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## Tüketicilerin Perspektifinden Katma Değer Vergisi İndirimleri: Ampirik Bulgular

İhsan Cemil Demir<sup>1</sup>

Ali Balkı<sup>2</sup>

Tüketicilerin Perspektifinden Katma Değer Vergisi İndirimleri: Ampirik Bulgular	Value-Added Tax Reductions from Consumers' Perspective: Empirical Findings
<p><b>Öz</b></p> <p>Bu çalışmanın amacı, Türkiye'nin 2022 yılında sürekli artan fiyatları baskılamak ve piyasaları canlandırmak amacıyla uyguladığı katma değer vergisi indirimlerine yönelik bireylerin algı, tutum ve davranışlarını Türkiye örneğinde belirlemektir. Bunun için Türkiye genelinde 1.098 kişi ile yüz yüze ve online anket yöntemi kullanılarak veriler toplanmış ve regresyon analizleri yapılmıştır. Çalışmanın bulgularına göre, bireylerin katma değer vergisi indirimlerine yönelik algısı genel olarak pozitiftir. Bu durum, piyasanın canlandırılmasına yönelik izlenen katma değer vergisi indirimleri politikasına katkı sağlayacaktır. Ayrıca bireyler, katma değer vergisi indirimlerinin fiyatlara yansımadığını düşünmektedirler. 2022 yılı Ocak-Ekim döneminde tüketici fiyat endeksinin sürekli artması, bireylerde hâkim olan, indirimlerin fiyatlara yansımadığı algısı ile örtüşmektedir. Bu açıdan, katma değer vergisi indirimleri politikasının fiyatları baskılamak ve düşürmek bakımından yeterli olmadığını ifade etmek mümkündür.</p>	<p><b>Abstract</b></p> <p>This study aims to determine individuals' perceptions, attitudes, and behaviors toward the value-added tax reductions implemented by Turkey in 2022 to suppress the ever-increasing prices and stimulate the markets in the sample of Turkey. For this, we collected data from 1.098 people across Turkey using face-to-face and online survey methods. We performed regression analyses with these data. According to the study's findings, the perception of individuals toward value-added tax reductions is generally positive. This result will contribute to the value-added tax reduction policy pursued to stimulate the market. In addition, individuals think that value-added tax deductions are not reflected in prices. The continuous increase in the consumer price index in the January-October period of 2022 coincides with the prevailing perception of individuals that discounts are not reflected in prices. In this respect, the value-added tax reduction policy must be revised to suppress and reduce prices.</p>
<p><b>Anahtar Kelimeler:</b> Katma Değer Vergisi, Vergi İndirimi, Sosyolojik Etki</p>	<p><b>Keywords:</b> Value-Added Tax, Tax Reductions, Sociological Effect</p>
<p><b>JEL Kodları:</b> H20, H30, H31</p>	<p><b>JEL Codes:</b> H20, H30, H31</p>

<p><b>Araştırma ve Yayın Etiği Beyanı</b></p>	<p>Bu çalışma 08.04.2022 tarih ve 2022/119 sayılı Afyon Kocatepe Üniversitesi Sosyal ve Beşerî Bilimler Bilimsel Araştırma ve Yayın Etiği Kurulu Onay Belgesi ile bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.</p>
<p><b>Yazarların Makaleye Olan Katkıları</b></p>	<p>Yazar 1'in makaleye katkısı %50, Yazar 2'nin makaleye katkısı %50'dir.</p>
<p><b>Çıkar Beyanı</b></p>	<p>Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.</p>

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## 1. Giriş

Vergiler, özellikle doğal kaynak zengini olmayan Türkiye gibi ülkelerde en önemli gelir kaynağıdır. Vergilerin mali amacı kamu harcamalarını finanse etmektir. Bunun yanı sıra devletler; iktisadi, sosyal, siyasi vb. birçok ekstra fiskal (mali olmayan) amaç için de vergileri maliye politikası aracı olarak kullanmaktadır. Ekonomik büyümenin yavaşladığı ve işsizliğin arttığı durumlarda vergilerde yapılacak indirimlerin ekonomiyi canlandırması beklenir. Keynes'e (1936) göre, ekonomilerin durgunluktan çıkabilmesi için kamu harcamalarını artırarak toplam talebi canlandırmak gerekir. Keynes'i takip eden fonksiyonel maliyeciler ise sadece kamu harcamaları aracılığıyla değil vergilerle de devletin ekonomiye müdahale etmesi gerektiğini ifade etmişlerdir (Lerner, 1943; Hansen, 1944). Kısa vadede toplam talebi canlandırmak için harcamalar üzerinden alınan vergilerde indirim gitmek gerekir.

Arz yönlü iktisadi düşünce (Laffer, 1981; Evans, 1983; Roberts, 1984) ise ekonomideki durgunluğun sebebini, toplam arzın var olan talebe cevap verememesinde görmektedir. Uzun vadede ekonominin durgunluktan çıkabilmesi, sürdürülebilir bir büyümenin yakalanabilmesi için izlenecek politika vergi indirimidir. Arz yönlü iktisadi düşünceye göre (Gwartney, 2005: 483), gelir üzerinden alınan vergilerde yapılacak indirimler piyasaları iki şekilde etkiler. İlk olarak, kişisel gelir vergisinde marjinal vergi oranlarının düşürülmesi, kişileri daha fazla çalışmaya sevk edecektir. Kurumlar vergisinde yapılacak indirimler ise yatırımı ve üretimi teşvik edecektir. Bu durum, uzun vadede üretimi ve toplam arzı artırarak ekonominin durgunluktan çıkmasını sağlayacaktır.

Devlet, izleyeceği politikalar ile önceden belirlediği büyüme, işsizlik, enflasyon gibi makro-ekonomik hedeflere ulaşmaya çalışır. İzlenecek politika, harcama veya vergi politikası ise politikanın devlet bütçesine olan muhtemel etkileri de dikkate alınır. Ancak, politikaların toplum nezdindeki yansımaları ile bireylerin politikalara karşı nasıl bir tutum sergileyeceği genellikle göz ardı edilir. Halbuki, devletin izleyeceği bir politikanın başarısında bireylerin bu politikaya uyum sağlaması da önemlidir. Bu kapsamda çalışmanın amacı, 2022 yılında uygulanan katma değer vergisi (KDV) indirimlerine karşı bireylerin tutum ve davranışlarını Türkiye genelinde belirlemektir.

Vergilerin toplum nezdindeki yansımaları ile bireylerin vergilere karşı tutum ve davranışları üzerine yapılan çalışmalar, vergi psikolojisi alanını oluşturur. Bu alandaki ilk çalışmalar Schmolders (1959), Allingham ve Sandmo (1972), Yitzhaki (1974), Friedland vd. (1978), Lewis (1982), Alm vd. (1995) tarafından yapılmıştır. Türkçe literatürde ise vergi psikolojisi alanında yapılan çalışmalar Muter vd. (1993) ile başlayıp Bayraklı vd. (2004), Saraçoğlu (2008), Tosuner ve Demir (2009), Gencil ve Kuru (2012), Taşkın (2012), Taytak (2016), Koç (2019) vb. çalışmalarla devam etmektedir. Bu çalışmaların ekseriyeti, genel olarak vergi uyumu, vergi algısı, vergi ahlakı, vergi kültürü konularında yoğunlaşmıştır. Harcamalar üzerinden alınan KDV'ye yönelik mükelleflerin tutum ve davranışlarını ölçen çalışma sayısı ise oldukça azdır. Bu çalışmalar (Altun ve Yavuz, 2017; Gürdal ve Yavuz, 2017; Çolak vd., 2018; Çobanoğlu vd., 2021) yalnızca bir-iki il ya da bölge düzeyinde yapılmış ve anket ifadelerinin ortalama değerleri üzerinden yorumlanmıştır. Şimdiye kadar, 2022 yılındaki KDV indirimleriyle ilgili herhangi bir çalışmanın olmaması, önceki dönemlerde uygulanan KDV indirimlerine karşı bireylerin nasıl bir tutum içerisinde olduklarının Türkiye genelinde ölçülmemiş olması ve bu çalışmada KDV indirimleri algısının regresyon modelleri ile analiz edilmesi çalışmanın özgün değeridir. Çalışmanın ilk bölümünde ilgili literatür incelenmiştir. İkinci bölümde, KDV indirimlerinin bütçeye yansımaları değerlendirilmiş; üçüncü bölümde, kullanılan veri seti ve yöntem



hakkında bilgi verilmiştir. Devamında ise analiz sonucunda elde edilen ampirik bulgular yer almaktadır. Sonuç bölümünde, elde edilen bulguların literatürle benzer ve farklı yönleri tartışılmıştır.

## 2. Literatür İncelemesi

Katma değer vergisi, bazı istisnalar dışında ekonomideki tüm mal ve hizmetlerden alınan bir genel tüketim vergisidir. Üretim ve tüketim gibi bir iktisadi işlemin tüm aşamalarındaki ilave değerler üzerinden alındığı için yayılı muamele vergilerine benzer. Bu vergide ifade edilen katma değer, bir firmanın üretim sırasında diğer firmalardan satın aldığı mal ve hizmetlere kattığı değerdir. Yani, bir firmanın ürettiği mal ve hizmetin satışından elde ettiği brüt gelir ile mal ve hizmeti üretmek için kullanılan tüm ara girdilerin maliyeti arasındaki farka eşittir. Bu nedenle, tüm firmaların ürettiği katma değere ilişkin bir vergi, ekonomideki tüm mal ve hizmetlerin toplam değerini esas alır ve KDV'yi ulusal düzeyde perakende satış vergisine eşdeğer yapar (Alm ve El-Ganainy, 2013: 108).

KDV ilk kez 1955 yılında Fransa'da uygulanmaya başlanmıştır. Brezilya, 1967'de KDV'yi benimseyen ilk Latin Amerika ülkesi olurken aynı yıl Danimarka'nın KDV'yi kabul etmesi, verginin Avrupa'da yayılmasının başlangıcı olmuştur. 1970'lerin sonunda on ikisi Avrupa ülkesi olmak üzere toplam yirmi yedi ülke KDV uygulamasına geçmiştir (Ebrill vd., 2002: 45). Dolaylı vergiler kategorisinde yer alan KDV, Türkiye'de 1985 yılından itibaren uygulanmaktadır. Genel olarak objektif nitelikte olan dolaylı vergiler, ric'i karakterli olmaları nedeniyle gelir dağılımını bozucu etkiye sahiptirler. Türkiye'de KDV'nin tek bir oran yerine üç farklı oranda uygulanması, bu bozucu etkinin azaltılmasına katkı sağlamaktadır. Dolaylı bir vergi olmasına rağmen KDV; kolay tahsil edilmesi, tasarrufları artırıcı etkisi olması, satış fiyatı yerine katma değer üzerinden alınması gibi avantajlara sahiptir (Şen ve Sağbaşı, 2016: 217).

Türkiye'de KDV ile ilgili birçok çalışma yapılmıştır. Bu çalışmalardan Madanoğlu (1992), Çelikkaya (2011), Yegen (2021) vb. çalışmalar uluslararası düzeyde KDV'nin uyumlaştırılması üzerine yapılırken; Ceran ve Çiçek (2007), Ardiç ve Seçer (2015), Pekşen (2021) gibi çalışmalar ise çeşitli sektörlerdeki KDV uygulamasını konu edinmiştir. Uluatam (1990), Arısoy ve Ünlükaptan (2011), Akduğan (2020) vb. çalışmalar ise enflasyon ve KDV gelirleri arasındaki ilişkiyi incelemiştir. Ayrıca KDV'deki indirim, istisna ve muafiyetleri vergi harcamaları kapsamında değerlendiren çalışmalar da mevcuttur (Saraç, 2010; Eriçok, 2019; Göze Kaya ve Gülsün, 2020).

Türkiye'de KDV'ye yönelik mükelleflerin tutum ve davranışlarını ölçen sınırlı sayıda çalışma vardır. Altun ve Yavuz (2017), Sakarya ve Düzce illerinde yaşayan kişilerin KDV'ye karşı tutum ve algılarını ölçmüştür. Çalışmanın sonuçlarına göre, bu iki ildeki kişilerin KDV'ye yönelik algısı genel olarak negatiftir. Ayrıca, kişiler %18 KDV oranının yüksek olduğunu, KDV kaldırılırsa daha fazla harcama yapacaklarını düşünmektedirler. Gürdal ve Yavuz (2017) çalışmalarında, Kocaeli ve Sakarya illerindeki esnafın KDV bilincini ölçmüşlerdir. Çalışmanın bulgularına göre, her iki ilde de KDV bilinci yüksektir. Ayrıca katılımcılar, KDV'nin neden olduğu vergi yükünün oldukça ağır olduğunu ve özellikle düşük ya da sabit gelir gruplarının vergi yükünü hafifletecek düzenlemelerin yapılması gerektiğini ifade etmişlerdir. Bu çalışmalar (Altun ve Yavuz, 2017; Gürdal ve Yavuz, 2017), genel olarak KDV'ye yönelik bireylerin algı ve bilincini ölçmek amacıyla, yalnızca iki il düzeyinde yapılmıştır. Yine bu çalışmalarda, sadece anket ifadelerinin ortalama değerleri üzerinden çıkarımda bulunulmuş olup bir model dahilinde kişilerin KDV'ye yönelik tutum ve davranışlarına ilişkin analiz yapılmamıştır.

KDV indirimlerine yönelik yapılan çalışmalardan Çolak vd. (2018), Ege bölgesinde mobilya sektöründe faaliyet gösteren 92 firma temsilcisiyle gerçekleştirdikleri anket ile KDV indiriminin etkilerini ölçmüşlerdir. Buna göre, 2017 yılında mobilya sektöründeki KDV oranlarının %18'den %8'e düşürülmesi, mobilya sektörünün canlanmasına katkı sağlamıştır. Çobanoğlu vd. (2021) çalışmalarında, tarımsal girdilerdeki KDV indiriminin etkilerini Aydın ili özelinde değerlendirmişlerdir. Çalışmanın bulgularına göre, tarımsal girdilerde uygulanmakta olan KDV indirimleri kısmen de olsa ürün fiyatlarındaki artışları dizginlemektedir. Ayrıca, Aydın ilindeki üreticilerin tarımsal girdilere uygulanan KDV oranları hakkında bilgi sahibi oldukları ve farkındalık düzeylerinin yüksek olduğu tespit edilmiştir. KDV indirimlerine yönelik yapılan bu çalışmalar (Çolak vd., 2018; Çobanoğlu vd., 2021), yalnızca bir sektördeki indirimleri konu edinmiş olup bir il ya da bölge düzeyinde yapılmıştır. Ayrıca çalışmalarda, Altun ve Yavuz (2017) ile Gürdal ve Yavuz'un (2017) çalışmalarında olduğu gibi bir model dahilinde analiz yapılmamış, sadece anket ifadelerinin ortalama değerleri üzerinden çıkarımda bulunulmuştur. Şimdiye kadar Türkiye örneğinde KDV indirimlerine yönelik bireylerin tutum ve davranışlarını ölçen bir çalışmanın olmaması, bu çalışmanın temel motivasyon kaynağı olmuştur. 2022 yılında Türkiye'de yapılan KDV indirimlerine yönelik tutum ve davranışları belirlemek amacıyla yapılan bu çalışmada, anket verileri regresyon modelleri kurularak analiz edilmiştir.

Uluslararası literatürde KDV'ye karşı bireylerin tutum ve davranışlarını ölçen birçok çalışma (Adams ve Webley, 2001; Bergman ve Nevarez, 2006; Webley ve Ashby, 2010; Oladipupo ve Izedonmi, 2013; Faridy vd., 2014; Fjeldstad vd., 2020; Kim vd., 2022; Schoeman vd., 2022) yapılmıştır. Adams ve Webley (2001) çalışmalarında, Birleşik Krallık'ta küçük işletme sahiplerinin KDV'ye yönelik tutumlarını ölçmüşlerdir. Çalışmanın bulgularına göre; gıda sektöründeki işletme sahiplerinin KDV'ye yönelik tutum ve davranışları, mobilya ve inşaat sektöründeki işletme sahiplerine göre daha olumsuzdur. Ayrıca, diğer vergilerde olduğu gibi vergi idaresinin mükellef odaklı yaklaşımının işletme sahiplerinin KDV'ye uyumunu kolaylaştırdığı sonucuna ulaşmışlardır. Oladipupo ve Izedonmi (2013), Nijerya'da vergi eğitimi ile KDV uyumu arasındaki ilişkiyi incelemişlerdir. Çalışmanın bulgularına göre; mükelleflerin vergi eğitim seviyeleri yükseldikçe KDV mevzuatını anlama düzeyleri yükselmekte ve mükellefler KDV'ye daha kolay uyum sağlamaktadırlar. Bunun yanı sıra, mükellef gruplarının eğitim seviyeleri ile KDV'ye uyumları arasında anlamlı bir fark bulunmamaktadır.

KDV uyumuna ilişkin yapılan çalışmalardan Faridy vd. (2014), Bangladeş'teki küçük ve orta ölçekli işletmelerin KDV'ye uyumu ile KDV mevzuatı ve uyum maliyetleri arasında bir ilişkinin olup olmadığını araştırmışlardır. Analiz sonuçlarına göre, KDV'ye uyumlu mükellefler açısından uyumu etkileyen iki faktör; KDV mevzuatındaki karmaşıklık ve vergiye uyum maliyetleridir. Fjeldstad vd. (2020), Tanzanya'nın ticaret merkezi olan Dar es Salaam Bölgesinde en işlek alışveriş merkezlerinde 314 işletme ve müşteri çifti ile doğrudan görüşme sağlayarak KDV uyumunu ölçmüşlerdir. Çalışmanın sonuçları, işletmelerin KDV'ye uyum oranının %75 olduğunu ve işletmelerin önemli bir çoğunluğunun KDV'ye gönüllü uyum sağladığını göstermektedir. Müşterilerin KDV konusunda bilinçli ve pozitif algıya sahip olmaları, işletmelerin KDV'ye uyumunu %24 artırmaktadır. Schoeman vd. (2022) çalışmalarında, Güney Afrika'da KDV oranlarındaki değişikliklere küçük işletme sahiplerinin nasıl tepki verdiklerini, yaptıkları saha deneyi ile vergi uyumu bağlamında değerlendirmişlerdir. Çalışmanın sonuçlarına göre, katılımcıların çoğu KDV oranlarında büyük bir indirim olduğunda

mükelleflerin kayıt dışılığa yönelmeyeceğini, yani KDV'ye uyumun olumlu etkileneceğini düşünmektedir.

Uluslararası literatürde yapılan bu çalışmalar incelendiğinde, genel olarak bireylerin KDV'ye uyumunun ölçüldüğü görülmektedir. Ancak doğrudan KDV indirimlerine yönelik tutum ve davranışları ölçen bir çalışmaya rastlanılmamıştır. Türkiye'de KDV indirimlerine yönelik çalışmalar ise yalnızca bir-iki sektör, il ya da bölge düzeyinde yapılmış ve sadece anket ifadelerinin ortalama değerleri üzerinden yorumlanmıştır. Bu çalışma, bireylerin 2022 yılındaki KDV indirimlerine yönelik tutum ve davranışlarını Türkiye örneğinde regresyon modelleri ile belirlemek ve literatürdeki bu boşluğu doldurmak amacıyla yapılmıştır.

### 3. Türkiye'de Son Dönemde Yapılan KDV İndirimleri ve Bütçeye Yansımaları

Türkiye'de KDV, 3095 sayılı Katma Değer Vergisi Kanunu ile 1985 yılından itibaren uygulanmaya başlanmıştır. KDV'nin ilgili kanunda yer alan oranı %10'dur. Yine aynı kanunla Bakanlar Kuruluna bu oranı %1'e kadar düşürmeye ve dört katına kadar artırmaya yetki verilmiştir. Bu yetki, 2018 yılında Cumhurbaşkanlığı Hükümet Sistemine geçildikten sonra Cumhurbaşkanına devredilmiştir. 2007 yılında alınan Bakanlar Kurulu Kararından (BKK) bu yana %1, %8 ve %18 olmak üzere üç farklı KDV oranı uygulanmaktadır. KDV oranlarındaki ilk indirim, 2008 ekonomik krizinin etkilerini azaltmak amacıyla 16.03.2009 tarihli Resmi Gazetede (RG) yayımlanan 2009/14802 sayılı BKK ile gerçekleşmiştir. Bu karardan sonra 2010-2021 döneminde de çeşitli ekonomik gerekçelerle zaman zaman KDV indirimleri uygulanmıştır.

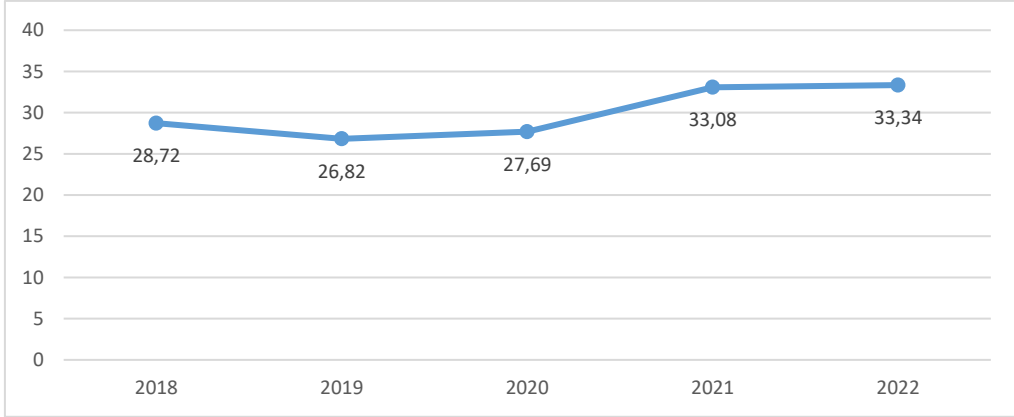
2022 yılındaki ilk KDV indirimi 13.02.2022 tarihli RG'de yayımlanan Cumhurbaşkanlığı Kararı (CBK) ile 14.02.2002 tarihinden itibaren uygulanmaya başlanmıştır. Bu indirimle çay, şeker, bakliyat ürünleri, meyve ve sebze ürünleri gibi temel gıda maddelerinde %8 olan KDV oranı %1'e düşürülmüştür. 2022 yılındaki ikinci KDV indirimi ise 01.03.2022 tarihli RG'de yayımlanan CBK ile elektrikte uygulanmaya başlanmıştır. Buna göre, mesken ve tarımsal sulamada kullanılan elektrikte KDV oranı %18'den %8'e düşürülmüştür. 2022 yılındaki bir diğer KDV indirimi ise 29.03.2022 tarihli RG'de yayımlanan CBK ile 01.04.2022 tarihinden geçerli olmak üzere uygulanmıştır. İlk iki KDV indirimine göre daha kapsamlı olan bu indirimde, 150 m<sup>2</sup>'ye kadar konut ile arsa ve arazi teslimlerinde; sabun, şampuan, kâğıt havlu gibi temizlik ve kişisel bakım ürünlerinde; üç yıldız ve üzeri otellerdeki lokantalar ile birinci sınıf lokantalardaki yeme-içme hizmetlerinde; tüm tıbbi cihazların kiralanmasında ve tesliminde; tarımda kullanılan bazı makine ve cihazların tesliminde KDV oranı %18'den %8'e düşürülmüştür. Ayrıca, bazı tohum ve fidanlara uygulanan %1 KDV oranının kapsamı genişletilerek Tarım ve Orman Bakanlığı'nın sertifikalandırdığı tüm tohum ve fidanların tesliminde de KDV oranı %18'den %1'e indirilmiştir.

Son dönemde yapılan KDV indirimlerinin bütçeye yansımaları, KDV gelirlerinin toplam vergi gelirleri içerisindeki payları üzerinden değerlendirilmiştir. 2022 yılındaki KDV gelirlerinin vergi gelirleri içerisindeki payını<sup>3</sup> önceki yıllarla karşılaştırabilmek için son beş yıllık dönem itibarıyla inceleme yapılmıştır. Bu kapsamda, 2018-2022 dönemine ait KDV gelirlerinin toplam vergi gelirlerine oranı Şekil-1'de gösterilmiştir. Buna göre; KDV gelirlerinin toplam vergi gelirleri içerisindeki payı 2018-2020 döneminde yaklaşık %27 olarak gerçekleşirken son iki yılda bu oran %33'e yükselmiştir. 2022 yılında bu oranın %33,34 olarak gerçekleşmesi, yıl içerisinde

<sup>3</sup> Hazine ve Maliye Bakanlığı'ndan erişilebilen son veri 2022 yılı Ekim ayına ait olduğu için şekillerde yer alan 2022 yılı verileri Ekim ayı sonu itibarıyla gerçekleşen oranlardır.

yapılan KDV indirimlerinin vergi gelirlerini azaltmadığını yani, bütçeye olumsuz bir yansımalarının olmadığını göstermektedir.

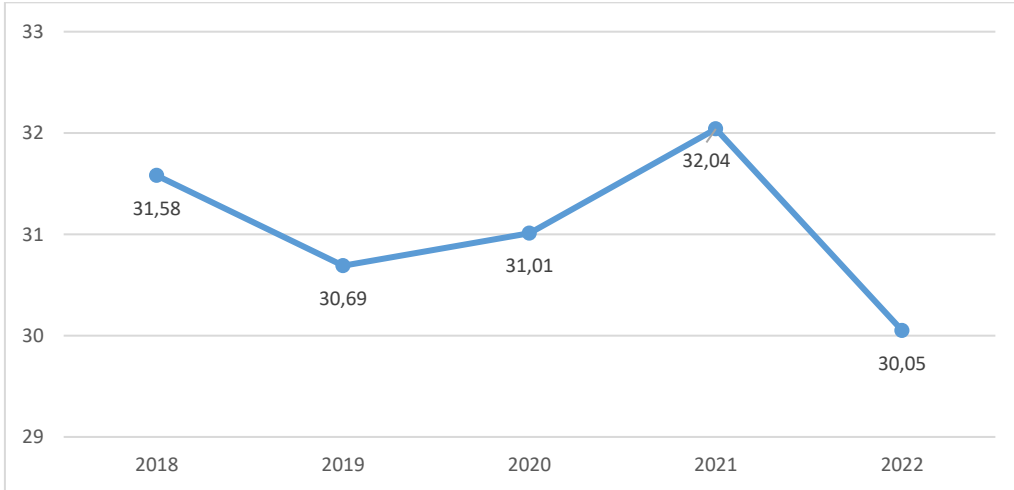
Şekil 1: KDV Gelirlerinin Vergi Gelirleri İçerisindeki Payı (%): 2018-2022



Kaynak: Hazine ve Maliye Bakanlığı (<https://muhasebat.hmb.gov.tr/merkezi-yonetim-butce-istatistikleri>) verileri kullanılarak hazırlanmıştır.

Türkiye’de KDV, dahilde ve ithalde alınan KDV olmak üzere iki ayrı kaleme toplanmaktadır. 2022 yılı içerisinde yapılan indirimlerin KDV gelirlerinin yapısında bir etkisinin olup olmadığını görebilmek amacıyla 2018-2022 dönemi itibariyle inceleme yapılmıştır. Bu dönemde, dahilde alınan KDV’nin gelirlerinin toplam KDV içerisindeki payı Şekil-2’de gösterilmiştir. Buna göre, 2018-2020 döneminde dahilde alınan KDV’nin toplam KDV’ye oranı yaklaşık %31 olarak gerçekleşmiştir. 2021 yılında %32’ye yükselen bu oran 2022 yılında %30’a gerilemiştir. 2022 yılındaki KDV indirimleri ekseriyetle mal ve hizmetlerin yurt içindeki teslimlerinde uygulandığı için bu düşüşte söz konusu indirimlerin etkili olduğu söylenebilir.

Şekil 2: KDV Gelirlerinin Vergi Gelirleri İçerisindeki Payı (%): 2018-2022



Kaynak: Hazine ve Maliye Bakanlığı (<https://muhasebat.hmb.gov.tr/merkezi-yonetim-butce-istatistikleri>) verileri kullanılarak hazırlanmıştır.

#### 4. Araştırmanın Metodolojisi ve Ampirik Bulgular

##### 4.1. Veri Seti, Model ve Yöntem

KDV indirimlerine karşı bireylerin tutum ve davranışlarını Türkiye genelinde ölçmek amacıyla yapılan bu çalışmada, nicel araştırma yöntemleri arasında yer alan anket tekniği kullanılmıştır. Bunun için her ilden en az bir kişinin katılımıyla toplam 1.100 kişi ile yüz yüze ve online anket gerçekleştirilerek veriler toplanmıştır. Araştırmanın evrenini, Türkiye’de yaşayan 18 yaş üstü nüfus oluşturmaktadır. Türkiye İstatistik Kurumu’nun 2021 yılı verilerine göre, 18 yaş üstü kişi sayısı yaklaşık 62 milyondur. Örneklem büyüklüğünün hesaplanmasında bu sayı dikkate alınmış ve hesaplama %95 güven aralığı ile %3 hata payına göre yapılmıştır. Yazıcıoğlu ve Erdoğan (2004) tarafından yapılan örneklem büyüklüğü hesaplama yöntemine göre; örneklem büyüklüğü için 1.068 kişinin yeterli olacağı görülmüş, eksik ya da kayıp verilerin olabileceği düşünülerek örneklem büyüklüğü 1.100 olarak belirlenmiştir.

Örneklem belirlenmesinde, tesadüfi olmayan örnekleme yöntemleri arasında yer alan kolayda örnekleme yöntemi (Etikan vd., 2016) tercih edilmiştir. Kolayda örnekleme yönteminin tercih edilmesinin sebebi, araştırma evreninin tamamının listesine erişimin mümkün olmaması ve rasgele seçim sonrası katılımcılara ulaşılmasının oldukça uzun bir zaman alacak olmasıdır. Ayrıca, kolayda örnekleme yönteminde ankete katılımın gönüllük esasına dayanmasının veri toplama sürecini hızlandıracağı düşünülmüştür. Araştırmanın ölçeği hazırlanırken Adams ve Webley (2001), Oladipupo ve Izedonmi (2013), Demir vd. (2017), Altun ve Yavuz (2017) gibi çalışmalarda kullanılan ölçek ve değişkenlerden yararlanılmıştır. Araştırma kapsamında kişilerden elde edilen veriler, OLS regresyon analizlerine tabi tutulmuştur. Araştırmada demografik değişkenler dışındaki anket ifadelerinde beşli likert ölçek kullanılmıştır (Kesinlikle katılmıyorum:1, Kesinlikle katılıyorum:5).

##### 4.2. Ampirik Bulgular

Araştırma, Türkiye genelinde online ve yüz yüze anket tekniği kullanılarak 1.100 kişi ile gerçekleştirilmiştir. Uygulanan anketlerden iki tanesi değerlendirmeye alınmamıştır. Toplamda 1.098 ankette elde edilen veriler analiz edilmiştir. Çalışmanın bu bölümünde öncelikle ankete katılan kişilere ilişkin demografik bulgulara yer verilecek, sonrasında ise OLS regresyon analizinden elde edilen bulgular değerlendirilecektir.

Demografik değişken olarak kişinin cinsiyeti, yaşı, medeni hali, sahip olduğu çocuk sayısı, yaşadığı bölge, eğitim durumu, mesleği, aylık ortalama geliri, motorlu aracının olup olmadığı kullanılmıştır. Ankette yer alan demografik değişkenlerin frekans dağılımları Tablo 1’de gösterilmiştir. Buna göre, ankete katılanların %57,5’i erkek, %42,5’i kadın, %60,7’si evli, %52,2’si 18-35 yaş aralığında, %20,8’i lise mezunu, %13’ü ev hanımı, %22,7’si İç Anadolu bölgesinde yaşamakta, %16’sının geliri 8.001-11.000 ₺ arası ve %45,4’ünün ise kendine ait motorlu aracı vardır.

Tablo 1: Demografik Değişkenlerin Frekans Dağılımları

Demografik Değişkenler		Frekans	Yüzde (%)
Cinsiyet	Kadın	467	42,5
	Erkek	631	57,5
Medeni Hal	Evli	667	60,7
	Bekar	431	39,3
Yaş	18-35 arası	573	52,2
	36-50 arası	401	36,5
	51 ve üzeri	124	11,3
Eğitim Durumu	Mezun değil	33	3,0
	İlköğretim	205	18,7
	Lise	228	20,8
	Ön lisans	130	11,8
	Lisans	411	37,4
	Lisansüstü	91	8,3
Yaşanılan Bölge	Akdeniz	103	9,4
	Doğu Anadolu	25	2,3
	Ege	499	45,4
	Güneydoğu Anadolu	26	2,4
	İç Anadolu	249	22,7
	Karadeniz	57	5,2
	Marmara	139	12,7
Meslek	Ev hanımı	143	13,0
	Öğrenci	206	18,8
	Emekli	62	5,6
	Serbest Meslek	121	11,0
	İşçi	189	17,2
	Esnaf/Tacir	63	5,7
	Memur	291	26,5
	Çiftçi	23	2,1
Gelir	0-2.000 ₺ arası	294	26,8
	2.001-5.000 ₺ arası	248	22,6
	5.001-8.000 ₺ arası	284	25,9
	8.001-11.000 ₺ arası	176	16,0
	11.001 ₺ ve üzeri	96	8,7
Araç sahipliği	Evet	499	45,4
	Hayır	599	54,6

KDV indirimleriyle ilgili bireylerin algı, tutum ve davranışlarını ölçmek amacıyla yapılan regresyon analizlerinde kullanılacak bağımlı değişken, altı anket ifadesi birleştirilerek oluşturulmuştur. Oluşturulan bağımlı değişkenin (KDV indirimleri algısı) ortalaması 3,89 olarak hesaplanmıştır. Birleştirilen anket ifadeleri ve bu ifadelerin ortalama değerleri şu şekildedir: 1- KDV indirimleri gereklidir (ort. 4,02); 2- KDV indirimleri ekonomiyi canlandırır (ort. 3,82); 3- Gıda ürünlerindeki KDV indirimini doğru buluyorum (ort. 3,80); 4- Elektrikteki KDV indirimini doğru buluyorum (ort. 3,96); 5- Yeme-içme hizmetlerindeki KDV indirimini doğru buluyorum (ort. 3,78); 6- Temel ihtiyaç maddelerindeki (sabun, deterjan, peçete, bebek bezi vb.) KDV indirimini doğru buluyorum (ort. 3,95).

Ayrıca, analizlerde likert ölçekli ifadelerden vergi algısı, KDV'nin uygulanma nedeni, KDV'nin gerekliliği, KDV bilinci, KDV indirimi, KDV'nin etkisi, KDV'nin uygulama alanı, KDV oranı olarak kodlanan 22 anket ifadesi bağımsız değişken olarak kullanılmıştır. Analizde kullanılan anket ifadelerine ilişkin özet bilgiler Tablo 2'de gösterilmiştir. Analizde kullanılan ölçeğin güvenilirliğini ölçmek üzere Cronbach's Alpha katsayısından yararlanılmış ve 0,68

olarak tespit edilmiştir. Bu oran %60-80 aralığında olduğu için ölçeğin güvenilir olduğunu göstermektedir.

Tablo 2: Anket İfadelerine İlişkin Özet Tablo

Kısaltma	Anket İfadesi	St.sapma	Ort.
Vergi algısı-1	Vergi ödemek vatandaşlık görevidir.	1,10	3,94
Vergi algısı-2	Vergiler, yapılan kamu harcamalarının karşılığıdır.	1,07	3,58
Vergi algısı-3	Vergiler, devletin vatandaşa kestiği cezalardır.	1,19	2,51
KDV'nin uyg. nedeni-1	KDV, gelir dağılımında ve vergilemede adaleti sağlamaya yardımcı olur.	1,19	2,81
KDV'nin uyg. nedeni-2	KDV'nin uygulanma amacı vergi sisteminde otokontrol sağlamaktır.	1,02	3,34
KDV'nin gerekliliği-1	KDV, vergi sistemimizde olması gereken bir vergidir.	1,11	3,31
KDV'nin gerekliliği-2	KDV'ye tabi olan mal ve hizmetlerin kapsamı daraltılmalıdır.	1,08	3,72
KDV'nin gerekliliği-3	Her çeşit mal ve hizmetten KDV alınmalıdır.	1,22	2,56
KDV bilinci-1	KDV'nin hangi mal ve hizmetlerden hangi oranlarda alındığını biliyorum.	1,12	3,00
KDV bilinci-2	KDV'deki değişiklikleri yakından takip ederim.	1,15	3,07
KDV bilinci-3	Her ay ne kadar KDV ödediğimi yaklaşık olarak biliyorum.	1,17	2,58
KDV indirimi-1	KDV indirimleri vergi gelirlerini azaltır.	1,13	3,19
KDV indirimi-2	KDV indirimleri enflasyonun düşmesine yardımcı olur.	1,25	3,06
KDV indirimi-3	KDV indirimlerinin fiyatlara yansıtıldığını düşünüyorum.	1,37	2,62
KDV'nin etkisi-1	KDV yaptığım harcamaları doğrudan etkiler.	1,12	3,69
KDV'nin etkisi-2	KDV kaldırılırsa daha fazla harcama yaparım.	1,24	3,63
KDV oranı-1	Ülkemizde uygulanan KDV oranları yüksektir.	1,12	3,99
KDV oranı-2	KDV, tek oranlı uygulanmalıdır.	1,13	2,95
KDV'nin uyg. alanı-1	Teknolojik ürünlere uygulanan %18 KDV oranı yüksektir.	1,08	4,05
KDV'nin uyg. alanı-2	Doğalgazdaki KDV oranı düşürülmelidir.	1,05	4,19
KDV'nin uyg. alanı-3	Akaryakıt ürünlerindeki KDV oranı düşürülmelidir.	1,03	4,27
KDV'nin uyg. alanı-4	Beyaz eşya (buzdolabı, çamaşır makinesi vb.) üzerinden alınan %18 KDV yüksektir.	1,08	4,08

İlk kurulan regresyon modelinde, dokuz adet demografik değişken ve 19 adet likert ölçekli anket ifadesi kullanılmıştır. Sonrasında modele, KDV'nin uygulama alanı ile ilgili üç adet anket ifadesi daha eklenerek toplamda dört model oluşturulmuş ve analiz sonuçları Tablo 3'te raporlanmıştır. Bağımsız değişkenlerin bağımlı değişkeni açıklama oranını gösteren  $R^2$  (Gujarati, 1988: 183), ilk modelde %37,5'tir. Diğer modellerde, her bir değişken eklendikçe  $R^2$  yükselmiş ve son modelde %45,1 olmuştur. Bu oran, KDV indirimleri algısının %45,1'inin modele dahil edilen 31 değişkenle açıklandığını göstermektedir. Ayrıca her modelin robust (sağlamlık/güven) testleri yapılmıştır.

Tablo 3: KDV İndirimleri Algısını Etkileyen Faktörler (Analiz Sonuçları)

Değişkenler	Model - 1		Model - 2		Model - 3		Model - 4	
	Katsayı	t ist.	Katsayı	t ist.	Katsayı	t ist.	Katsayı	t ist.
<b>Demografik Değişkenler</b>								
Cinsiyet	-0,0309	-0,67	-0,0324	-0,73	-0,0331	-0,77	-0,0312	-0,74
Evli	0,127**	2,11	0,125**	2,10	0,105*	1,78	0,0907	1,57
Çocuk sayısı	0,00498	0,12	-0,0147	-0,36	-0,00803	-0,21	-0,0175	-0,45
Genç	-0,0551	-0,98	-0,0715	-1,31	-0,0752	-1,41	-0,0983*	-1,88
İç Anadolu	-0,0904*	-1,81	-0,0832*	-1,73	-0,0825*	-1,75	-0,0809*	-1,75
Mezun değil	0,152	1,58	0,173*	1,84	0,172*	1,89	0,154*	1,67
Emekli	0,134*	1,74	0,126*	1,72	0,150**	2,05	0,147**	2,04
Üst-orta gelir	0,0801	1,57	0,0815	1,62	0,0932*	1,90	0,0924*	1,93
Araç	-0,126***	-2,59	-0,0949**	-2,01	-0,107**	-2,29	-0,101**	-2,22
<b>Likert Ölçekli İfadeler</b>								
Vergi algısı-1	0,0529**	2,16	0,0457*	1,87	0,0508**	2,12	0,0441*	1,90
Vergi algısı-2	0,0694***	3,23	0,0735***	3,46	0,0661***	3,18	0,0726***	3,58
Vergi algısı-3	-0,0539***	-2,90	-0,0463**	-2,53	-0,0336*	-1,87	-0,0353**	-2,01
KDV'nin uyg. nedeni-1	0,0492**	2,00	0,0357	1,44	0,0311	1,26	0,0308	1,26
KDV'nin uyg. nedeni-2	0,0988***	4,27	0,0929***	4,09	0,0946***	4,25	0,0879***	3,96
KDV'nin gerekliliği-1	0,0371*	1,74	0,0406*	1,94	0,0347*	1,73	0,0330*	1,68
KDV'nin gerekliliği-2	0,0939***	4,01	0,0907***	3,92	0,0780***	3,38	0,0678***	2,96
KDV'nin gerekliliği-3	-0,0595***	-3,09	-0,0472**	-2,50	-0,0400**	-2,14	-0,0337*	-1,84
KDV bilinci-1	0,00192	0,09	0,00569	0,28	0,0101	0,49	0,00744	0,37
KDV bilinci-2	0,0605***	3,01	0,0568***	2,92	0,0517***	2,67	0,0443**	2,32
KDV bilinci-3	-0,0499**	-2,34	-0,0404*	-1,95	-0,0318	-1,56	-0,0256	-1,29
KDV indirimi-1	0,0213	1,11	0,0249	1,35	0,0183	0,99	0,0101	0,56
KDV indirimi-2	0,0304*	1,73	0,0311*	1,79	0,0302*	1,77	0,0297*	1,76
KDV indirimi-3	-0,0100	-0,61	-0,00865	-0,54	-0,00343	-0,22	-0,00362	-0,23
KDV'nin etkisi-1	0,103***	4,69	0,0879***	4,13	0,0696***	3,34	0,0624***	3,01
KDV'nin etkisi-2	0,0623***	3,17	0,0551***	2,85	0,0394**	2,09	0,0292	1,58
KDV oranı-1	0,129***	5,73	0,0600**	2,57	0,0415*	1,78	0,0276	1,15
KDV oranı-2	-0,00901	-0,47	-0,00542	-0,29	-0,00526	-0,28	-0,00228	-0,12
KDV'nin uyg. alanı-1	0,110***	4,30	0,0797***	3,24	0,0385	1,58	-0,00841	-0,33
C (Sabit)	1,003***	4,97	0,742***	3,75	0,548***	2,83	0,572***	3,01
<b>Modele Eklenen Diğer Değişkenler</b>								
KDV'nin uyg. alanı-2			0,176***	6,49	0,138***	5,21	0,129***	4,84
KDV'nin uyg. alanı-3					0,176***	6,95	0,145***	5,75
KDV'nin uyg. alanı-4							0,141***	4,87
Observations	1.098		1.098		1.098		1.098	
Prob.	0,0000		0,0000		0,0000		0,0000	
R <sup>2</sup>	0,375		0,406		0,434		0,451	

Bağımlı Değişken: KDV indirimleri algısı.

Anlamlılık Düzeyleri: \* 0,05 &lt; p &lt; 0,10; \*\* 0,01 &lt; p &lt; 0,05; \*\*\* p &lt; 0,01

Temel Sınıflar: Evli, genç, İç Anadolu, mezun değil, emekli, üst-orta gelir.



Analiz sonuçlarına göre KDV indirimleri algısı, demografik değişkenlerden kişinin medeni hali, yaşı, yaşadığı bölge, eğitim durumu, mesleği, geliri ve araç sahipliği bakımından anlamlı farklılaşmaktadır. Cinsiyet ve çocuk sayısında ise anlamlı bir farklılık tespit edilememiştir. İlk iki modelde %5, üçüncü modelde ise %10 anlamlılık düzeyinde, evlilerin KDV indirimlerine yönelik algısı bekarlara göre daha pozitifdir. Ankete katılan kişilerden 18-35 yaş aralığında olanlar genç, 36-50 yaş aralığında olanlar orta yaş, 51 ve üzeri olanlar ise orta yaş üstü şeklinde kodlanmıştır. Yalnızca dördüncü modelde ve %10 anlamlılık düzeyinde, gençlerin diğer yaş gruplarındaki kişilere göre KDV indirimleriyle ilgili algısı negatiftir. İç Anadolu bölgesinde yaşayan kişilerin KDV indirimlerine karşı bakışı %10 anlamlılık düzeyinde negatiftir. Son üç modelde ve %10 anlamlılık düzeyinde, herhangi bir okuldan mezun olmamış kişilerin KDV indirimleri algısı diğer eğitim düzeyindeki kişilere göre daha olumludur. Emeklilerin diğer meslek gruplarındaki kişilere göre, KDV indirimlerine bakışı ilk iki modelde %10, son iki modelde %5 anlamlılık düzeyinde pozitifdir.

Ankete katılan kişilerden aylık ortalama geliri 0-2.000 ₺ arası olanlar en düşük gelir, 2.001-5.000 ₺ arası olanlar düşük gelir, 5.001-8.000 ₺ arası olanlar alt-orta gelir, 8.001-11.000 ₺ arası olanlar üst-orta gelir, 11.001 ₺ ve üzeri olanlar ise yüksek gelir olarak kodlanmıştır. Son iki modelde ve %10 anlamlılık düzeyinde, üst-orta gelir grubunda yer alan kişilerin KDV indirimlerine yönelik algısı diğer gelir gruplarındaki kişilere göre daha olumludur. Kendine ait bir aracı olan kişilerin KDV indirimleriyle ilgili algısı ilk modelde %1, son üç modelde %5 düzeyinde negatiftir.

Analiz sonuçlarına göre KDV indirimleriyle ilgili algı, 22 adet likert ölçekli ifadenin 18'inde anlamlı farklılaşmaktadır. Vergileri yapılan kamu harcamalarının karşılığı olarak gören kişilerin KDV indirimlerine yönelik algısı, %1 anlamlılık düzeyinde diğer kişilere göre pozitifdir. Vergileri devletin vatandaşa kestiği ceza olarak gören kişilerin KDV indirimlerine yönelik algısı ise %5 anlamlılık düzeyinde negatiftir. KDV'nin uygulanma amacını vergi sisteminde otokontrol sağlamak olarak görenlerin KDV indirimlerine bakışı %1 anlamlılık düzeyinde olumludur. KDV'ye tabi mal ve hizmetlerin kapsamının daraltılması gerektiğini düşünenlerin KDV indirimleriyle ilgili algısı %1 anlamlılık düzeyinde pozitifdir. Her çeşit mal ve hizmetten KDV alınması gerektiğini düşünenlerin ise KDV indirimleriyle ilgili algısı (ilk modelde %1, ikinci ve üçüncü modelde %5, dördüncü modelde %10 anlamlılık düzeyinde) negatiftir.

KDV'nin yaptığı harcamaları etkilediğini düşünenlerin KDV indirimlerine yönelik algısı, bu düşüncede olmayan kişilere göre %1 anlamlılık düzeyinde daha olumludur. Türkiye'de uygulanan KDV oranlarının yüksek olduğunu düşünenlerin KDV indirimlerine bakışı (ilk modelde %1, ikinci modelde %5, üçüncü modelde %10 anlamlılık düzeyinde) pozitifdir. Doğalgaz ve akaryakıt ürünleri ile beyaz eşya üzerinden alınan KDV'nin yüksek olduğunu ve düşürülmesi gerektiğini düşünenlerin KDV indirimlerine yönelik algısı, %1 anlamlılık düzeyinde, bu düşüncede olmayan kişilere göre daha olumludur. KDV'deki değişiklikleri yakından takip edenlerin KDV indirimlerine yönelik algısı, ilk üç modelde %1, dördüncü modelde ise %5 anlamlılık düzeyinde pozitifdir. KDV indirimlerinin enflasyonun düşmesine yardımcı olacağını düşünenlerin KDV indirimlerine bakışı %10 anlamlılık düzeyinde genel olarak pozitifdir.

Ayrıca "KDV indirimlerinin fiyatlara yansıdığını düşünüyorum." anket ifadesine katılım oranının düşük olması (ort. 2,62), kişiler nezdinde indirimlerin fiyatlara yansımadağı algısının olduğunu göstermektedir. Bu algı, devletin KDV indirimlerinden beklediği fiyatları ve dolayısıyla enflasyonu baskılama hedefiyle çelişen bir algı olarak karşımıza çıkmaktadır.

## 5. Sonuç

Vergiler, devlet açısından hem önemli bir gelir kaynağı hem de etkili bir maliye politikası aracıdır. Devlet, vergilerde yapacağı artış ya da azalışlarla bazı amaçlara ulaşmaya çalışır. Ancak bir vergi politikasının başarısı, kişilerin bu politikaya uyum sağlamasıyla yakından ilgilidir. 2022 yılında Türkiye'deki KDV indirimlerine karşı bireylerin tutum ve davranışlarını ölçmek amacıyla yapılan bu çalışmada, 1.098 kişi ile gerçekleştirilen anketten elde edilen veriler kullanılmıştır. Anket verileri ile dört farklı regresyon modeli kurulmuş ve OLS regresyon analizi yapılmıştır. Analizlerde KDV indirimleri algısı bağımlı değişken olarak belirlenmiş ve bu algıyı etkileyebilecek demografik faktörler ile vergi algısı, vergi bilinci, vergi oranı gibi hem ekonomik hem de sosyo-psikolojik faktörler bağımsız değişken olarak analize dahil edilmiştir. Bu yönüyle çalışma, Schmolders (1959) ile başlayan Friedland vd. (1978), Lewis (1982), Muter vd. (1993), Bayraklı vd. (2004), Taşkın (2012), Koç (2019) ile devam eden vergi psikolojisi literatürüne katkı sağlamaktadır.

Çalışmanın ampirik sonuçları, KDV indirimlerine karşı bireylerin algı, tutum ve davranışlarının genel olarak pozitif olduğunu göstermesi bakımından; Altun ve Yavuz (2017), Gürdal ve Yavuz (2017), Çolak vd.'nin (2018) elde ettiği sonuçlarla örtüşmektedir. Çalışmadan elde edilen sonuçlar; evlilerin bekarlara göre, herhangi bir okuldan mezun olmayan kişilerin diğer eğitim düzeylerindeki kişilere göre, emeklilerin diğer meslek gruplarındaki kişilere göre, üst-orta gelir grubundaki kişilerin diğer gelir gruplarındaki kişilere göre KDV indirimleriyle ilgili algısının pozitif olduğunu göstermektedir. Ayrıca, gençlerin diğer yaş gruplarındaki kişilere göre, İç Anadolu Bölgesi'nde yaşayan kişilerin diğer bölgelerde yaşayan kişilere göre, kendine ait aracı olan kişilerin diğer kişilere göre KDV indirimleriyle ilgili algısının negatif olduğu tespit edilmiştir. Çalışmada, KDV indirimleri algısının toplam yedi adet demografik değişkenden anlamlı farklılaşması ve bundan önceki çalışmalarda demografik değişkenlere ait herhangi bir bulgunun olmaması açısından bu çalışma, KDV indirimleriyle ilgili daha önce yapılan diğer çalışmalardan (Altun ve Yavuz, 2017; Gürdal ve Yavuz, 2017; Çolak vd., 2018; Çobanoğlu vd., 2021) ayrılmaktadır.

Analiz sonuçlarına göre, pozitif vergi algısına sahip kişilerin KDV indirimleri algısı pozitifken negatif vergi algısına sahip kişilerin KDV indirimleri algısı da negatiftir. KDV'nin vergi sisteminde otokontrol sağladığını, KDV'ye tabi mal ve hizmetlerin kapsamının daraltılması gerektiğini, KDV oranlarının yüksek olduğunu ve düşürülmesi gerektiğini düşünenler ile KDV bilinci yüksek olan kişilerin KDV indirimleriyle ilgili algısı pozitifdir. KDV indirimlerine karşı bireylerin algı, tutum ve davranışlarında vergi oranlarının etkili olması, ekonomik faktörlerin etkili olduğunu göstermektedir. Bu bulgu, literatürde Allingham ve Sandmo (1972), Yitzhaki (1974), Friedland vd. (1978), Schoeman vd.'nin (2022) elde ettiği bulgularla örtüşmektedir. Ayrıca, KDV indirimlerine karşı tutum ve davranışlarda vergi algısı, KDV bilinci gibi sosyo-psikolojik faktörlerin etkili olduğuna dair elde edilen bulgular, literatürde Alm vd. (1995), Bayraklı vd. (2004), Tosuner ve Demir'in (2009) elde ettiği bulgularla örtüşmektedir.

Devlet, 2022 yılında almış olduğu KDV indirimi kararlarıyla hem piyasaları canlandırmayı hem de hızla artan fiyatları baskılamayı amaçlamıştır. Bu dönemde gerçekleşen enflasyon oranları (tüketici fiyat endeksindeki yıllık % değişim) incelendiğinde, ocak ayında %48,69 olan oran yıl boyunca sürekli artarak ekim ayında %85,51 olarak gerçekleşmiştir. Bu durum, KDV indirimleri politikasının fiyatları baskılamada çok zayıf kaldığını göstermektedir. Çalışmanın bulguları arasında yer alan KDV indirimlerinin fiyatlara yansımada çok zayıf kaldığını göstermektedir. Çalışmanın bulguları arasında yer alan KDV indirimlerinin fiyatlara yansımada çok zayıf kaldığını göstermektedir. Çalışmanın bulguları arasında yer alan KDV indirimlerinin fiyatlara yansımada çok zayıf kaldığını göstermektedir. Çalışmanın bulguları arasında yer alan KDV indirimlerinin fiyatlara yansımada çok zayıf kaldığını göstermektedir.

edilecek nedenlere göre politikalar geliştirilmelidir. Bunun yanı sıra, kişilerin KDV indirimlerine yönelik tutum ve davranışlarının genel olarak pozitif olması, devletin KDV indirimleriyle piyasaları canlandırma amacına katkı sağlamaktadır. Ayrıca bu çalışma, bir vergi politikasının başarılı olabilmesi için politikaların toplum nezdindeki yansımalarının araştırılmasının önemini ortaya koyarak bundan sonra vergi psikolojisi alanında yapılacak çalışmalara ve politika yapıcılara yol göstermektedir.

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### Extended Summary

#### Value-Added Tax Reductions from Consumers' Perspective: Empirical Findings

Taxes are an essential tool that states apply to achieve various extra-fiscal purposes and finance public expenditures. In cases where economic growth slows down and unemployment increases, tax reductions are expected to stimulate the economy. Governments can reduce taxes on expenditures to stimulate aggregate demand in the short run. The government tries to reach macroeconomic targets with the policies it will follow. In tax policy implementations, the effects of the policy on the budget should also be considered. However, it often ignores the reflections of the policy on society and how individuals will react to the policies. However, the success of a policy depends on the adaptation of individuals to this policy. In this context, the study aims to measure the attitudes and behaviors of individuals toward the value-added tax reductions applied in 2022 throughout Turkey.


Studies on taxes' reflections on society and individuals' attitudes and behaviors towards taxes form the field of tax psychology. The first studies in this area are the studies Schmolders (1959), Allingham and Sandmo (1972), Yitzhaki (1974), Friedland et al. (1978), Lewis (1982), Alm et al., and De Juan (1995). In Turkey, extensive literature has emerged in the field of tax psychology, starting with Muter et al. (1993) and continuing with studies such as Bayraklı et al. (2004), Saracoglu (2008), Tosuner and Demir (2009), Taşkın (2012), Koç (2019). Most of these studies focused on tax compliance, perception, and general tax morale. The number of studies measuring the attitudes and behaviors of taxpayers towards VAT-taken-over expenditures is relatively low. These studies (Altun and Yavuz, 2017; Gürdal and Yavuz, 2017; Çolak et al., 2018; Çobanoğlu et al., 2021) were conducted only at the level of one or two provinces or regions and were interpreted on the average values of the survey statements. So far, there is no literature on value-added tax reductions in 2022. This study aims to contribute to the literature by measuring perceptions toward value-added tax reductions across Turkey with regression models.

We conducted the research with 1.100 people across Turkey using online and face-to-face survey techniques. Two of the statements we applied were not included in the evaluation because they contained missing data. We constructed four different regression models using data from 1.098 people. We formed the dependent variable, which we used in the regression analyses to measure individuals' perceptions, attitudes, and behaviors regarding value-added tax reductions, by combining six survey statements. The average of the dependent variable (perception of value-added tax reductions) we created is 3,89. In the analyses, we used thirty-one independent variables, nine demographic variables, and twenty-two Likert-scale statements. In Likert scale expressions, economic and socio-psychological factors include tax perception, tax awareness, and tax rate. In this respect, the study contributes to the tax psychology literature starting with Schmolders (1959), Friedland et al. (1978), Lewis (1982), Muter et al. (1993), Bayraklı et al. (2004), Taşkın (2012), Koç (2019).

According to the analysis results, the perception of value-added tax deductions differs significantly from demographic variables regarding marital status, age, region of residence, education level, occupation, income, and vehicle ownership. Our results show that married people have a positive perception of value-added tax reductions compared to singles, people who have not graduated from any school compared to people with other education levels, retirees compared to people from other occupational groups, people in the upper-middle income group compared to people in other income groups. In addition, the perception of young people about value-added tax reductions is negative compared to people in other age groups, people living in the Central Anatolia region compared to people living in other regions, and people who have their cars compared to other people. According to the analysis results, the perception of value-added tax reductions of people with positive tax perception is positive. Those who think that value-added tax provides self-control in the tax system, that the scope of goods and services subject to value-added tax should be narrowed, that value-added tax rates are high and should be reduced, and that people with high value-added tax awareness have a positive perception of reductions. The fact that tax rates are influential in individuals' perception, attitude, and behavior toward value-added tax reductions shows that economic factors are influential. This finding is consistent with the findings of Allingham and Sandmo (1972), Yitzhaki (1974), Friedland et al. (1978), and Schoeman et al. (2022) in the literature. In addition, our findings that socio-psychological factors such as tax perception and awareness of value-added tax are influential in attitudes and behaviors towards value-added tax reductions are in line with the findings of Alm et al. (1995), Bayraklı et al. (2004) and Tosuner and Demir (2009) in the literature.

With the value-added tax reduction decisions taken in 2022, the government aimed to stimulate the markets and suppress the rapidly increasing prices. When we examine the inflation rates realized in this period, the rate, 48,69% in January, increased continuously throughout the year and became 85,51% in October. These rates show that the value-added tax reductions policy is feeble in suppressing prices. The perception that value-added tax reductions, which are among the study's findings, are not reflected in the prices also supports this situation. In addition, individuals' positive attitudes and behaviors towards value-added tax reductions contribute to the government's aim of stimulating the markets with value-added tax reductions. Also, this study reveals the importance of investigating the reflections of policies on society for a tax policy to be successful and guides policymakers and future studies in the field of tax psychology.

# Environmental, Social, and Governance (ESG) Scores and Financial Performance of Publicly Listed Companies in Turkey<sup>1</sup>

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<b>Türkiye'de Halka Açık Şirketlerin Çevresel, Sosyal ve Yönetişim (ESG) Puanları ve Finansal Performansı</b>	<b>Environmental, Social, and Governance (ESG) Scores and Financial Performance of Publicly Listed Companies in Turkey</b>
<b>Öz</b> <p>Bu çalışmada işletmelerin çevresel, sosyal ve kurumsal yönetim (ESG) yatırımlarına yönelik çabalarının finansal performanslarına da yansiyip yansımadığı sorusuna cevap aranmıştır. Bu çerçevede 2009-2019 yılları arasında finans sektörü dışında yer alan firmaların ESG puanlarının piyasa temelli ve muhasebe temelli performans göstergeleri üzerindeki etkileri incelenmiştir. Elde edilen bulgulara göre ESG uygulamaları firmaların performans göstergeleri üzerinde pozitif bir etkiye sahiptir. ESG'nin alt bileşenleri kullanılarak gerçekleştirilen ek analizlerin sonuçlarına göre ise çevresel boyutun her üç bileşeni de performansı pozitif etkilerken, sosyal ve kurumsal yönetim boyutları ile ilgili bazı alt bileşenlerin performans ile istatistiksel olarak ilişkili olmadıkları bulgusuna ulaşılmıştır.</p>	<b>Abstract</b> <p>In this paper, the question of whether the efforts of businesses on environmental, social and corporate governance (ESG) investments are also reflected in their financial performance is tried to be answered. In this context, the effects of ESG scores of non-financial firms between 2009-2019 on market-based and accounting-based performance indicators were examined. According to the findings, ESG scores positively affect the performance indicators of companies. According to the results of the additional analyzes using the sub-components of the ESG, it was found that while all three components of the environmental dimension affect performance positively, some sub-components related to the social and corporate governance dimensions are not statistically related to performance.</p>
<b>Anahtar Kelimeler:</b> Çevresel, Sosyal ve Kurumsal Yönetim (ESG), Performans, Tobin Q, Aktif Kârlılığ, Özkaynak Kârlılığı	<b>Keywords:</b> Environmental, Social, and Governance (ESG), Performance, Tobin's Q, Return of Assets, Return of Equity
<b>JEL Kodları:</b> L25; Q56, C23	<b>JEL Codes:</b> L25; Q56, C23

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Çalışmanın tamamı üç yazar ile birlikte oluşturulmuştur. Yazarlar eşit oranda katkı sağlamıştır.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

The significance of a company's performance and the factors that influence it are crucial for professionals and scholars across various disciplines due to their wide-ranging implications and repercussions. Notably, it can directly impact a company's financial health and stability, thereby affecting shareholders and stakeholders. Moreover, a company's performance can also have a broader impact on the overall economy, affecting the livelihoods of the whole community. Given its complexity and scope, gaining insight into the performance of a company requires a multidisciplinary approach that draws on expertise and knowledge from various domains, including finance, economics, management, accounting, and marketing.

To develop effective strategies and make informed decisions that enhance overall performance, practitioners and researchers must understand the factors that determine a company's performance. This requires consideration of not only financial data but also non-financial factors that could significantly impact future performance. This is because, today, companies are increasingly investing in assets that cannot be imitated, are rare, and lack substitutes to gain a sustainable competitive advantage within the framework of the resource-based view theory (Barney, 1991). This has rendered traditional financial information inadequate for evaluating a firm's future performance and profits.

Environmental, social, and corporate governance (ESG) activities are gaining traction among practitioners as they seek to pursue both long-term investment opportunities and make a meaningful impact on society. Business managers recognize the importance of ESG and sustainability activities since they play a crucial role in the long-term viability and reputation of a company. Investors, financial analysts, and policymakers are also utilizing non-financial ESG information to obtain a holistic assessment of a company's performance and future prospects in the market (Zuraida et al., 2018: 458). More specifically, over the past decade, ESG investing has experienced significant growth, with professionally managed portfolios that incorporate crucial aspects of ESG assessments surpassing USD 17.5 trillion globally (Boffo and Patalano, 2020). According to a report by PwC, it is anticipated that asset managers worldwide will increase their management of ESG-related assets under management to \$33.9tn by 2026, compared to \$18.4tn in 2021 (PwC, 2022). Another study that included 1,300 decision-makers who work in finance, ESG, and sustainability from 13 global markets showed that in the last three years, 75% of organizations have begun formally reporting their ESG, climate, and sustainability, or corporate social responsibility data (Workiva, 2022).

Scholars have long been debating and discussing the measurement, reporting, and potential financial impact of ESG activities on companies. According to Fatemi et al. (2015), firms that prioritize environmental investment and social responsibility may witness an enhancement in their financial performance and overall worth. Additionally, as per Chouaibi et al. (2022), investors consider a firm's ESG practices while assessing investment risks and opportunities, which indicates that a company's ESG performance could affect its stock prices and bond yields. There are studies (Aras and Crowther, 2008; Branco and Rodrigues, 2008; Chouaibi et al., 2022; Lee et al., 2009; Velte, 2017) that found that investing in ESG activities has a positive effect on financial performance; there are also studies that concluded that it has a negative effect (Atan et al., 2018; Duque-Grisales and Aguilera-Caracuel, 2021; Fatemi et al., 2015; Wang and Sarkis, 2017). These studies, however, have predominantly focused on companies in developed nations, leaving a gap in understanding the impact of ESG activities

on the financial performance of firms in developing economies. This study aims to address this gap by conducting an empirical investigation into the effects of ESG activities on the financial performance of publicly listed non-financial Turkish firms between 2009 and 2019. Furthermore, this study seeks to make a significant contribution to the existing literature by examining the impact of ESG practices on financial performance using an overall financial performance indicator that integrates accounting-based and market-based performance measures and by exploring the distinct effects of the ten sub-components of ESG on firm performance.

The ESG scores of each firm were retrieved from the Refinitiv Eikon database. Refinitiv objectively measures a firm's ESG performance based on data reported by firms. Both market-based (Tobin q) and accounting-based (return on assets and return on equity) indicators were used to measure financial performance. In addition, a general financial performance indicator was created by using principal components analysis based on these three performance indicators. The models also incorporated several firm characteristics that have been demonstrated to affect performance in prior studies. Empirical models were estimated using ordinary least squares regression with the Driscoll-Kraay standard errors method.

The study found that ESG activities have a positive impact on a company's financial performance, with higher ESG performance leading to better financial performance. Further analysis of the sub-components of ESG revealed that companies with higher scores in CSR strategy, emission reduction, workforce, resource use, innovation, and management had a better financial performance. While all three components of the environmental dimension had a positive effect on performance, some sub-components related to social and corporate governance dimensions did not show a statistically significant relationship with performance. Overall, the study suggests that the financial performances of the companies that pay the necessary attention to the environment and work towards making the world more sustainable are higher than the others.

The next sections of the paper are as follows. Chapter 2 focuses on the conceptual framework. In Chapter 3, the hypothesis development is discussed. In Chapter 4, the sample, data, variables, and empirical model are discussed. Empirical findings are presented in Chapter 5. Finally, the article is concluded with Chapter 6.

## **2. Conceptual Framework**

In the current globalized world, the contagion effect has made it possible for events in one part of the world to have an impact on activities in another part. This has resulted in companies dedicating significant time to risk management and taking precautions to safeguard themselves. The consequences of such events can also have a financial impact on companies. As organizations that play a pivotal role in shaping society and fulfilling investor expectations, they adopt a solution-focused approach and establish defensive measures to protect against both systematic and unsystematic risks. To achieve this, companies invest not only in physical assets but also intangible assets.

At this point, investors have been discussing alternative sources of information as the financial reports of companies are insufficient in providing guidance on how to record and report intangibles. In particular, the investors, who realized that the environmental, social, and managerial competencies of companies, which are the biggest trump cards against the above-mentioned risks, affect the future and value of the companies, started to expect

companies to make financial statements on these issues. To respond to the expectations of all stakeholders, especially investors, companies make the necessary efforts to review their responsibilities and to create a reporting system accordingly (Aras and Sarıoğlu, 2015: 22-23).

Corporate sustainability practices encompass a broad spectrum of environmental, social, and corporate governance (ESG) issues. Examples of environmental issues include climate change, carbon emissions, energy consumption, and water usage, while social issues can include human rights, gender equality, product and customer information, and health and safety. Corporate governance issues such as the independence of the board of directors, reporting and disclosure, anti-corruption measures, and shareholder protection are also significant aspects of ESG (Galbreath, 2013: 530; Amel-Zadeh and Serafeim, 2018: 87).

ESG is not only associated with ethical and socially responsible investment but is also regarded as a critical indicator of risk management and non-financial performance (Galbreath, 2013: 530). The growing interest of responsible investors in a company's ESG performance has compelled firms to adopt stakeholder-oriented strategies and prioritize social values in their operations. Market participants are now using ESG information in addition to financial data, which has limited usefulness in predicting a company's future cash flow (Zuraida et al., 2018: 458). More specifically, in the last 25 years, there has been significant and substantial growth in the number of firms assessing and disclosing ESG information. While the number of companies publishing ESG data was not even 20 in the early 1990s, this number increased to 9,000 in 2016; thus, there has been an increase in investors' interest in ESG data (Amel-Zadeh and Serafeim, 2018: 87). Research suggests that companies with a strong commitment to corporate sustainability tend to benefit from shared values within their business and society at large (Alsayegh et al., 2020: 3910-3911).

ESG performance is also viewed as a proxy for the quality of management (Talieno et al., 2019: 1742). Companies are obligated to comply with ESG policies, which can help prevent information asymmetry between internal and external stakeholders, provide greater access to information, and ultimately build trust in the company (Yen-Yen, 2019: 469). Numerous studies have documented the economically significant impacts of ESG, including reduced capital constraints, lower capital costs, and correlations with share price movements (Amel-Zadeh and Serafeim, 2018: 87). Moreover, ESG constitutes a pillar of corporate social responsibility for the development of sustainable strategies that have an impact on the financial performance of companies (Duque-Grisales and Aguilera-Caracuel, 2021: 315; Galema et al., 2008).

### **3. Hypothesis Development**

The adoption of an ESG approach has prompted companies to pursue enlightened management practices and prioritize long-term returns driven by both ethical and financial considerations (Nasdaq, 2019: 5). Companies that demonstrate ethical and responsible behavior, which enhances societal welfare and strengthens their competitive position, are more likely to achieve superior value and performance (Mohammad and Wasiuzzaman, 2021: 9). Semenova et al. (2010) found a significantly positive relationship between environmental and social factors and market value in their study on companies traded in OMX Stockholm. They stated that firms with higher environmental and social performance have higher stock prices. In a study using the example of Malaysia and Singapore, Tarmuji et al. (2016) examined the effect of ESG practices on economic performance and presented empirical evidence that social and corporate governance practices affect economic performance.

Finding that ESG disclosures have a positive and significant effect on firm performance, Yen-Yen (2019) stated that non-financial disclosures lead to better firm value. Ting et al., (2020) found that ESG initiatives positively affect firm performance. In their research, they used the ESG scores of companies operating in developed and emerging markets between the years 2014-2018. Bahadori et al. (2021) concluded that firms with higher ESG scores have a higher level of profitability. On the results of the analyzes conducted using the sustainability reports of companies traded in the BIST between 2008 and 2014, Düzer and Önce (2019) assert that sustainability performance indicators have a positive effect on firm performance. Çimen (2019) found that being included in the BIST Sustainability Index positively affects the performance of companies. In another study conducted on companies traded on the BIST, Ateş (2021), using data from the years 2009-2017, concluded that corporate social performance levels have a positive relationship with financial performance. Şişman and Çankaya (2021) carried out an analysis using the ESG data of companies in the airline industry between 2010 and 2017 and found that there was a positive relationship between ESG score and return on assets (ROA).

This paper draws upon the findings and theoretical discussions outlined in the aforementioned studies to suggest that a company's ESG performance has a positive impact on its financial performance. As a result, as a company's ESG scores improve, its financial performance is expected to improve accordingly. This may be due to the fact that ESG practices can influence financial performance directly, as well as indirectly, by enhancing operational efficiency, reducing risks, fostering creativity, and improving satisfaction among customers and employees. Based on these arguments, this paper posits the following primary hypothesis:

*Hypothesis 1: As the firms' ESG scores increase, their financial performance also increases.*

#### **4. Methodology**

##### **4.1. Sample**

This paper aimed to investigate how ESG practices are related to the financial performance of listed non-financial companies in Turkey. With this aim, the companies whose ESG scores can be reached between the years 2009-2019 constitute the sample of the research. The ESG score is the company's environmental, social, and corporate governance score gathered by Refinitiv. Refinitiv publishes ESG scores that aim to objectively measure a firm's ESG performance based on data reported by firms. Market-based (TOBIN q) and accounting-based (ROA, ROE) indicators were used to measure financial performance. The financial statement information of the companies was also accessed through the Refinitiv Eikon database. To ignore the effects of the financial crisis in 2008 and the COVID-19 Pandemic in 2020 on the activities of the companies, the relevant years were not included in the sample. To avoid the effect of extreme values, the values outside the 1st and 99th percentiles of the variables were set to the value corresponding to the 1st and 99th percentiles, respectively. Finally, the research sample consists of 36 firms and 189 firm-year observations. The industries of these companies are as follows: basic materials (24 observation), consumer cyclicals (48 observation), consumer non-cyclicals (37 observation), energy (12 observation), healthcare (1 observation), industrials (37 observation), real estate (9 observation), technology (21 observation). The names of the firms included in the sample are given in Appendix 1. Sample distribution by years in the sample is given in Appendix 2.

Table 1 includes the definitions of the variables.

Table 1: Definitions and Explanations of Variables

Variables		Descriptions of Variables
Dependent variable	ROA	Return on assets is calculated as the ratio of net profit to total assets.
	ROE	Return on equity is calculated as net income divided by equity.
	TOBIN	TOBIN is calculated by dividing the market value by the book value. Its formula can be represented as: $[\text{Total assets} - \text{Equity} + (\text{Number of shares} \times \text{Share price})] \div \text{Total assets}$
	PERFORM	PERFORM is an overall financial performance indicator created using principal components analysis based on three performance indicators (ROA, ROE, and TOBIN). Higher values of the variable indicate higher financial performance.
Independent variables	ESG	ESG Score refers to the overall ESG score of firms calculated by Refinitiv based on the information reported within the environmental, social, and corporate governance components.
	RES	Resource Use Score is a measure of a company's ability to minimize its usage of materials, energy, or water and to implement sustainable practices in its supply chain management.
	EMS	Emission Reduction Score evaluates a company's efforts and success in lowering the amount of pollution it generates through its production and daily operations.
	EIS	Innovation Score measures a company's potential to decrease its environmental expenses and increase revenue by developing new environmentally friendly technologies, procedures, or products.
	WFS	Workforce Score assesses a company's success in promoting employee satisfaction, providing a safe and healthy work environment, fostering a diverse and inclusive workplace, and offering opportunities for personal and professional growth.
	HRS	Human Rights Score evaluates a company's adherence to basic human rights standards. It measures the company's performance in treating its employees, customers, and other stakeholders with respect, dignity, and fairness.
	CMS	Community Score assesses a company's dedication to being a responsible member of society, safeguarding public health, and adhering to ethical business practices.
	PRS	Product Responsibility Score is an indicator of a company's ability to produce goods and services of high quality by incorporating integrity, protecting customer data, and ensuring customer safety and well-being.
	MNS	Management Score evaluates a company's dedication and success in adhering to the highest principles of corporate governance.
	SHS	Shareholders Score assesses a company's success in treating its shareholders fairly and using tools to prevent hostile takeovers.
	CSR	CSR Strategy Score evaluates the way a company integrates social, environmental, and economic considerations into its daily decision-making process and communicates the same to the stakeholders.
Control Variables	SIZE	Size is defined as the natural logarithm of total assets.
	AGE	Firm age is the natural logarithm of firm age.
	LEVERAGE	Leverage is defined as the ratio of total debt to total assets.
	LIQUIDITY	Liquidity is defined as the ratio of current assets to current liabilities.
	SALES_G	Sales growth is defined as the change in net sales over the past year.
	LOSS	Loss is a dummy variable that is equal to 1 for firms reporting a loss in the current year and 0 for other firms.
	RISK	Risk represents firm risk and is defined as the absolute difference between the annual percentage change in net income after taxes of a given firm $i$ in year $t$ and the average of this change of firm $i$ over the sample period.

#### 4.2. Empirical Model

The following model was formed to test the relationship between ESG scores and firm performance.

$$Y_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 Control_{it} + \beta_3 Year_{it} + \beta_4 Firm_{it} + \varepsilon_{it} \quad (1)$$

The *i* indices in the model represent the firms and the *t* indices represent the years.  $Y_{it}$  represents return on assets (ROA), return on equity (ROE), TOBIN q, and overall performance measure (PERFORM), respectively. The independent variable of the study,  $ESG_{it}$ , represents the company's ESG score. Various firm characteristics that have been shown to have an impact on performance in previous studies are also included in the analysis model.  $Control_{it}$  refers to firm characteristics that are considered as control variables. These variables are size, age, leverage, liquidity, sales growth, loss, and risk. In addition, dummy variables related to years and companies were included in the analysis model in order to eliminate the omitted variable bias.  $Year_{it}$  represents the year dummy variables;  $Firm_{it}$  represents the firm dummy variables.  $\varepsilon_{it}$  is the error term. Detailed explanations of the variables are shown in Table 1.

The dataset is panel data, as it includes observations over time and across different firms. However, due to the unavailability of data for certain years for some of the firms included in the sample, an unbalanced panel data set is present. Panel data analysis is frequently used in the fields of economics and finance because it provides the opportunity to conduct empirical studies that cannot be obtained by using only time series data or cross-sectional data (Tari, 2010). Therefore, to analyze the experimental model, panel data analysis techniques were employed. More specifically, the empirical model was estimated using the Driscoll-Kraay standard errors method. Driscoll and Kraay (1998) standard error method provides results that are robust to heteroskedasticity and general temporal and cross-sectional dependency problems (Hoechle, 2007)).

#### 4.3. Descriptive Statistics

Descriptive statistics of the variables are given in Table 2. ROA mean (median) was 0.08 (0.07), ROE mean (median) was 0.19 (0.18), and TOBIN Q mean (median) was 1.59 (1.36). The averages of the sub-components of the ESG score, namely resource use, emissions, innovation, labor, human rights, society, product responsibility, management, shareholders, and CSR strategy, are 46.20, 46.19, 25.31, 60.97, 29.79, 53.21, 46.22, 51.86, 52.49, and 39.69, respectively. The workforce size has the highest average of the ESG sub-components. This can be interpreted as an indication that companies care about their employees. On the other hand, the innovation and human rights components have the lowest ratings. The average of ESG score is 46.43.

Table 3 shows the correlation coefficients between variables and variance inflation factor of variables. There is a negative correlation between ESG score and ROA, ROE, TOBIN Q, and Perform variables. The existence of a high correlation coefficient (>0.70) among the variables in the regression model may cause a multicollinearity problem. It tested whether there was a multicollinearity problem between the variables via variance inflation factor (VIF). If the calculated VIF value is greater than 0.10, it means that there is multicollinearity. According to the results, it was seen that there was no multicollinearity problem since the VIF values were less than 0.10.

Table 2: Descriptive Statistics

Variables	Observation	Mean	St. Deviation	Median	Minimum	Maximum
ROA	225	0.08	0.06	0.07	-0.03	0.33
ROE	225	0.19	0.14	0.18	-0.22	0.55
TOBIN	226	1.59	0.88	1.36	0.68	5.51
PERFORM	225	0.00	1.41	-0.23	-6.32	5.71
SIZE	226	23.07	0.89	23.17	20.82	24.96
AGE	226	3.62	0.56	3.66	1.61	4.22
LEVERAGE	226	0.29	0.17	0.31	0.00	0.60
LIQUIDITY	226	2.04	2.30	1.48	0.61	13.12
SALES_G	189	0.18	0.22	0.16	-0.33	1.13
LOSS	226	0.05	0.22	0.00	0.00	1.00
RISK	189	176.7	595.6	34.49	0.02	5466
ESG	226	46.43	20.01	49.29	2.57	92.55
RES	226	46.20	32.86	49.69	0.00	98.72
EMS	226	46.19	32.61	48.99	0.00	99.49
EIS	226	25.31	29.51	17.38	0.00	98.44
WFS	226	60.97	24.93	65.69	2.89	99.00
HRS	226	29.79	34.24	14.50	0.00	97.83
CMS	226	53.21	27.94	55.69	2.48	98.52
PRS	226	46.22	31.86	48.75	0.00	99.73
MNS	226	51.86	29.07	55.45	0.81	98.39
SHS	226	52.49	28.79	54.02	0.81	99.19
CSR	226	39.69	30.55	38.64	0.00	99.12

Table 3: Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	VIF
ROA	1												-
ROE	0.79***	1											-
TOBIN	0.44***	0.53***	1										-
PERFORM	0.87***	0.89***	0.72***	1									-
SIZE	-0.36***	-0.35***	-0.50***	-0.45***	1								1.20
AGE	0.05	0.11	-0.04	0.07	0.06	1							1.03
LEVERAGE	-0.53***	-0.25***	-0.31***	-0.43***	0.17**	0.005	1						1.46
LIQUIDITY	0.58***	0.18***	-0.02	0.31***	-0.26***	-0.06	-0.43***	1					1.34
SALES_G	0.23***	0.23***	0.05	0.18**	0.07	0.03	-0.05	0.07	1				1.03
LOSS	-0.37***	-0.52***	-0.10	-0.44***	0.10	-0.07	0.19***	-0.09	-0.07	1			1.07
RISK	-0.06	-0.06	-0.10	-0.08	0.05	0.07	0.14*	-0.07	0.02	0.02	1		1.05
ESG	-0.33***	-0.14**	-0.11*	-0.25***	0.27***	0.11*	0.37***	-0.33***	0.07	0.01	-0.07	1	1.36



## 5. Empirical Results

Table 4 shows the results of the analysis regarding the effect of the ESG score on firm performance. Columns (1)-(4) show the findings related to return on assets, return on equity, Tobin q ratio, and overall performance variables, respectively. First, all models in Table 4 are statistically valid when looking at the F, P, and R2 values. In other words, all models have a statistically significant predictive ability on firm performance. It is seen that the ESG coefficient in the models is 0.000 (t=2.22), 0.001 (t=2.44), 0.009 (t=2.37), and 0.014 (t=2.58), respectively. The coefficient of the ESG score is statistically significant at the level of 0.10 in the ROA model. In ROE, TOBIN q, and overall performance models, it is statistically significant at the 0.05 level. According to these results, ESG has a positive effect on the performance of firms. Therefore, the hypothesis suggesting that the higher the ESG score, the higher the performance of the firms is supported.

Tablo 4: Analysis Results

Variables	(1) ROA	(2) ROE	(3) TOBIN	(4) PERFORM
ESG	<b>0.000*</b> (2.22)	<b>0.001**</b> (2.44)	<b>0.009**</b> (2.37)	<b>0.014**</b> (2.58)
SIZE	-0.014 (-0.81)	-0.036 (-0.70)	-1.039*** (-7.42)	-0.853** (-2.31)
AGE	0.110 (1.04)	0.271 (0.84)	6.878*** (7.59)	5.303** (2.29)
LEVERAGE	-0.125*** (-6.33)	-0.041 (-0.98)	-0.263 (-0.58)	-1.462*** (-3.44)
LIQUIDITY	0.011* (2.22)	0.011 (0.97)	-0.129* (-2.10)	0.059 (0.59)
SALES_G	0.045*** (3.86)	0.100*** (4.20)	0.365*** (4.03)	0.956*** (4.55)
LOSS	-0.051*** (-3.74)	-0.221*** (-6.43)	0.111 (0.86)	-1.075*** (-4.14)
RISK	-0.000 (-0.94)	-0.000 (-0.02)	-0.000*** (-5.36)	-0.000* (-2.10)
Constant	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Firm effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Observations	189	189	189	189
Number of firms	36	36	36	36
Adjusted R <sup>2</sup>	0.427	0.391	0.465	0.427
F – value	39862***	9100***	44013***	18889***

t-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

This finding is also supported by previous findings in the literature. In studies investigating the effect of ESG activities on financial performance using various time intervals and samples in Turkey, it has been found that the performance of companies that attach more importance to environmental, social, and corporate governance practices has been positively affected by this situation (Düzer and Önce 2019; Ateş, 2021). In addition, studies conducted in various parts of the world have proven that ESG disclosures have a positive effect on firm performance (Semenova et al., 2010; Tarmuji et al., 2016; Yen-Yen, 2019; Ting, 2020; Bahadori et al., 2021). The disclosure of ESG commitments and the extent to which they are fulfilled allows the company's strategy and objectives to be examined from the point of view

of current and potential investors, so investors who have the opportunity to access more information about the company can evaluate the companies better. Easier access to information can lead to an increase in the value of the company (Yen-Yen, 2019). In addition, firms with strong financial performance can be able to use their resources to be more beneficial to society and to do good for others. ESG activities can also reduce conflicts of interest between managers and stakeholders. Thus, businesses can have a better perception in the eyes of society, and this can improve company performance (Waddock, 1997:312; Hamilton et al., 1993: 64). Since companies have not yet invested in ESG activities as much as necessary, it can be said that participants in the market position companies that perform ESG activities differently from those that do not and see them as companies worth to invest (Jo and Harjoto, 2012).

Table 5 contains the results of additional analyzes using subcomponents of the ESG to support the main finding in Table 4. Considering the results of the analysis using the return on assets ratio as the dependent variable in Table 5 Panel A, coefficients of Emission, Innovation, Workforce, and CSR Strategy are statistically significant, while others are statistically insignificant. In Panel B, coefficients of Emission, Innovation, Workforce, and CSR Strategy are again statistically significant, while others are statistically insignificant. In Panel C, coefficients of Resource Use, Emission, Innovation, Workforce, Management, and CSR Strategy are statistically significant, while others are statistically insignificant. In Panel D, coefficients of Resource Use, Emission, Innovation, Workforce, and CSR Strategy are statistically significant, while others are statistically insignificant. The coefficients of the variables found to be significant are positive in the results of the four dependent variables, which supports the results of the main hypothesis.

Resource use, emissions, and innovation are the subcomponents of the environmental dimension of ESG. The environmental dimension of ESG assesses a company's environmental impact and management, including its efforts to mitigate and reduce negative impacts, as well as its adherence to environmental regulations and sustainability initiatives. ESG data can provide insight into a company's long-term environmental performance and potential risks, which can be useful for investors and analysts in making investment decisions. Additionally, companies that score well on the environmental dimension of ESG may be considered more socially responsible and may be seen as a more sustainable long-term investment. In Table 5, it was found that all three components of the environmental dimension positively affect performance. Companies with strong environmental performance may reduce their costs by using energy and natural resources more efficiently. Also, companies with good environmental performance may also be better positioned to capitalize on opportunities related to sustainability and clean energy. According to this, it has been found that if companies give weight to environmental factors, their performance will also increase.

Table 5: Impact of ESG Components on Performance

<b>Panel A: Dependent Variable ROA</b>										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	0.000 (1.41)	<b>0.000**</b> <b>(2.79)</b>	<b>0.000***</b> <b>(6.03)</b>	<b>0.000***</b> <b>(3.97)</b>	0.000 (1.11)	0.000 (0.75)	-0.000 (-0.40)	-0.000 (-0.14)	0.000 (0.40)	<b>0.000*</b> <b>(2.11)</b>
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R <sup>2</sup>	0.419	0.434	0.436	0.430	0.415	0.415	0.414	0.414	0.414	0.425
<b>Panel B: Dependent Variable ROE</b>										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	0.001 (1.68)	<b>0.001***</b> <b>(3.33)</b>	<b>0.001***</b> <b>(5.79)</b>	<b>0.001**</b> <b>(2.65)</b>	0.000 (0.84)	0.000 (0.45)	0.000 (0.18)	-0.000 (-0.85)	-0.000 (-0.26)	<b>0.001**</b> <b>(2.57)</b>
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R <sup>2</sup>	0.387	0.412	0.414	0.393	0.377	0.376	0.376	0.378	0.376	0.393
<b>Panel C: Dependent Variable TOBIN</b>										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	<b>0.004***</b> <b>(4.25)</b>	<b>0.004*</b> <b>(1.95)</b>	<b>0.004***</b> <b>(6.67)</b>	<b>0.005***</b> <b>(4.02)</b>	0.001 (1.08)	0.003 (1.20)	0.001 (1.02)	<b>0.002**</b> <b>(2.40)</b>	-0.000 (-0.27)	<b>0.003*</b> <b>(1.97)</b>
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R <sup>2</sup>	0.468	0.458	0.453	0.464	0.437	0.442	0.437	0.439	0.436	0.446
<b>Panel D: Dependent Variable PERFORM</b>										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	<b>0.006**</b> <b>(2.73)</b>	<b>0.009***</b> <b>(2.86)</b>	<b>0.008***</b> <b>(6.98)</b>	<b>0.009**</b> <b>(4.42)</b>	0.002 (1.35)	0.003 (1.04)	0.000 (0.01)	-0.000 (-0.08)	-0.001 (-0.58)	<b>0.006**</b> <b>(2.37)</b>
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R <sup>2</sup>	0.421	0.440	0.436	0.430	0.406	0.407	0.404	0.404	0.404	0.422

t-statistics in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

It was also found that only the workforce score, which is one of the sub-components of the social dimension, positively affects financial performance. The workforce score is an ESG factor that measures how well the business performs on issues such as working conditions, recruitment and promotion processes, and job security of its employees. A well-managed workforce will show itself through results such as high performance, low absenteeism rates, and reduced occupational accidents. This increases the productivity and efficiency of the company and contributes to financial performance by reducing costs. However, the lack of impact from other sub-components of the social dimension on financial performance may be attributed to socio-economic conditions in Turkey. On the other hand, although these components do not have a direct effect on financial performance, it should not be ignored that they have a direct effect on increasing the sustainability of enterprises and protecting the corporate reputation.

## **6. Conclusion**

Environmental, social, and corporate governance (ESG) practices have become a subject that is closely followed in the world. ESG has been the focus of many people, such as companies, investors, financial analysts, and policymakers (Semenova et al., 2010: 265). Because in today's, an event that occurs in one corner of the world can affect the activities in another, and companies try to respond to these risks with their physical and non-physical capital and skills against various risks. At this point, market interest is increasing, especially for businesses that are sensitive to their immediate and distant environment, protect the rights of the human resources they work with, and protect the interests of their shareholders and other stakeholders. Both individual and institutional investors are more interested in the activities of firms that go beyond the objectives of maximizing shareholder wealth. In this context, businesses with high ESG performance draw attention (Gillan et al., 2010: 1).

An important research question will be whether the efforts of companies that increase their ESG investments and improve their ESG performance are reflected in their traditional performances. In this paper, based on the argument that ESG practices are one of the mechanisms that protect companies against both systematic and unsystematic risks, it has been considered that the ESG performance of companies will have positive effects on their financial performance, and therefore, as the company's ESG scores increase, the financial performance will also increase. In order to test the hypothesis, non-financial Turkish companies were included in the research sample between 2009 and 2019. Empirical models were estimated using ordinary least squares regression with the Driscoll-Kraay standard errors method. Thus, results that are robust to heteroscedasticity, and general temporal and cross-sectional dependency problems were obtained.

According to the findings, ESG practices have a positive effect on the performance indicators of companies. Therefore, as the ESG performance of companies increases, their financial performance also increases. According to the results of the additional analyzes carried out using the sub-components of the ESG, it was found that while all three components of the environmental dimension affect performance positively, some sub-components related to the social and corporate governance dimensions are not statistically related to performance. According to this, it has been concluded that the financial performances of the companies that pay the necessary attention to the environment are higher than the others.

This study not only contributes to studies examining the impact of ESG practices on financial performance through a sample of other developing countries (for Malaysia, see Atan et al., 2018) but also contributes to previous studies conducted on companies in Turkey with different ESG measurement methods. For example, Düzer and Önce (2019) examined the sustainability reports of 30 companies traded on the BIST between 2008 and 2014 and investigated their ESG performances over the economic, environmental, and social performance sub-components in line with GRI reporting principles. Moreover, Kulalı (2022) investigated the relationship between the ESG performance of the firms traded in Borsa İstanbul and the market value and the role of firm size in this relationship between the years 2016-2020. The researcher found that both ESG criteria and ESG components had a significant and positive effect on market value. In other studies carried out on the sample of Turkish firms, the effect of binary situations such as inclusion or non-inclusion in the sustainability index and disclosure or non-disclosure of a sustainability report on financial performance has been investigated (see Çimen, Gürünlü, 2019; Taç, 2019; Yılmaz et al., 2020).

The study also adds to the existing literature by utilizing an overall financial performance indicator, which sets it apart from earlier research. The goal is to present a fresh perspective by combining accounting-based and market-based performance measures into one comprehensive framework. Moreover, this study enables us to analyze the effect of ESG practices on firm performance in more detail. Existing literature has solely focused on exploring the impact of the overall ESG score or its E, S, and G components, neglecting the examination of the individual effects of the ten sub-components of ESG. Thus, the study has made a further contribution by examining the effect of the ten sub-components of the ESG separately on firm performance.

As a result, investing in ESG factors, particularly those related to the environmental dimension, is crucial for companies looking to improve their sustainable performance. Considering these factors when making decisions about company policies can help guide future decisions for managers. In other words, companies should prioritize ESG factors, and especially environmental concerns, in their overall business strategy in order to achieve long-term sustainability. The development of socially and environmentally conscious policies seems to contribute to more effective financial performance. As a result, executives must take into account the needs and concerns of not only their shareholders but also all parties who may be impacted by, or have an impact on, the attainment of environmental and social objectives (Chouaibi et al., 2022).

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Appendix 1: Tickers of Firms


AEFES	AKSA	ARCLK	ASELS	AYGAZ	BIMAS
CCOLA	DOAS	DOHOL	EKGYO	ENKAI	EREGL
FROTO	GLYHO	KORDS	KOZAA	KOZAL	KRDMD
MGROS	MPARK	OTKAR	PETKM	PGSUS	SASA
SELEC	SISE	TAVHL	TCELL	THYAO	TKFEN
TOASO	TTKOM	TTRAK	TUPRS	ULKER	VESTL

Appendix 2: Sample Distribution by Years

Years	Observations	%	ESG Means
2009	6	3.17	27.18
2010	7	3.70	33.04
2011	15	7.94	39.09
2012	16	8.47	41.05
2013	16	8.47	42.20
2014	17	8.99	45.88
2015	18	9.52	49.20
2016	18	9.52	50.59
2017	18	9.52	53.18
2018	22	11.64	56.98
2019	36	19.05	52.51



## Performance Analysis of Regional Development Agencies by LMAW-DNMA Methods

Sinan Dündar<sup>1</sup> 

Bölgesel Kalkınma Ajanslarının LMAW-DNMA Yöntemi ile Performans Analizi	Performance Analysis of Regional Development Agencies by LMAW-DNMA Methods
<p><b>Öz</b></p> <p>Bu çalışmada, Türkiye’de faaliyet gösteren 26 adet Bölgesel Kalkınma Ajansının (BKA), kar amacı güden ve kar amacı gütmeyen kurumlara yönelik finansal destekleri açısından performansları incelenmiştir. Logarithm Methodology of Additive Weights (LMAW) yöntemi ile 9 adet kriterin ağırlıkları belirlenmiş olup Double Normalization-based Multiple Aggregation (DNMA) yöntemi ile Bölgesel Kalkınma Ajanslarının performans sıralamaları ortaya çıkarılmıştır. Kar amacı gütmeyen kurumlara yönelik mali destek programları açısından İstanbul Kalkınma Ajansı en başarılı Bölgesel Kalkınma Ajansı olarak belirlenmiştir. Bununla birlikte, kar amacı güden kurumlara yönelik mali destek programı açısından Çukurova Kalkınma Ajansı en başarılı performansı göstermiştir.</p>	<p><b>Abstract</b></p> <p>In this study, the performances of 26 Regional Development Agencies (RDAs) operating in Turkey in terms of financial support for for-profit and non-profit organisations were examined. The weights of 9 criteria were determined with the Logarithm Methodology of Additive Weights (LMAW) method, and the performance order of the Regional Development Agencies was revealed with the Double Normalization-based Multiple Aggregation (DNMA) method. Istanbul Development Agency was determined as the most successful Regional Development Agency in terms of financial support programs for non-profit organisations. However, Çukurova Development Agency has shown the most successful performance in terms of the financial support programme for for-profit organisations.</p>
<p><b>Anahtar Kelimeler:</b> Bölgesel Kalkınma Ajansı, Mali Destek Programı, Çok Kriterli Karar Verme, LMAW, DNMA</p>	<p><b>Keywords:</b> Regional Development Agency, Financial Support Programme, Multi-Criteria Decision Making, LMAW, DNMA</p>
<p><b>JEL Kodları:</b> C44, P48</p>	<p><b>JEL Codes:</b> C44, P48</p>

<p><b>Araştırma ve Yayın Etiği Beyanı</b></p>	<p>Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.</p>
<p><b>Yazarların Makaleye Olan Katkıları</b></p>	<p>Yazar 1’in makaleye katkısı %100’dür.</p>
<p><b>Çıkar Beyanı</b></p>	<p>Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.</p>

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## 1. Introduction

Regional Development Agencies, the first applications of which were encountered in the United States of America (USA) in the 1930s, are among the most substantial regional and local development actors in many developed countries, especially in the European Union (EU) region. Even though the Development Agencies put forward different approaches individually, the aims of their entity can be generalized as guiding development policies and increasing the competitiveness of the region they are founded (*Avrupa Birliğinde Kalkınma Ajansları*, 2018; 1).

In order to provide information to development programs led by the central government and to supervise the implementation and monitoring of these plans, Regional Development Agencies were founded in the 1950s and 1960s. The importance of Regional Development Agencies has started to increase within the scope of ascending local competition with the understanding of public management and globalization that became widespread in the 1980s. These agencies were tasked with ensuring the active participation of the private sector and local shareholders in the regional development process. In the 1950s, Austria, Belgium, Ireland and France met with Regional Development Agencies. In the 1960s, Germany, Netherlands, England and Italy, and in the 1980s, Greece, Spain, Finland and Denmark started to adopt these institutions (Özen, 2005; 4).

The main mission of the Regional Development Agencies in Türkiye, which started to be established in the 2000s within the scope of Law No. 5449, can be listed as (Kalkınma Ajanslarının Kuruluşu, Koordinasyonu ve Görevleri Hakkında Kanun, 2006);

- to establish cooperation among the public sector, the private sector and civil society organisations,
- to expedite the regional development process in line with the principles and policies stated in the national development plan and programs by ensuring the appropriate and effective use of resources and actuating local potential,
- to ensure sustainability,
- to minimize inter-regional and intra-regional development disparities.

Çukurova and İzmir Development Agencies, which started their activities in 2006, are the first two Development Agencies in Türkiye and have been designed as a pilot scheme. Depending on the positive results obtained from these pilot schemes, 24 other Regional Development Agencies were additionally established in the following years.

The Nomenclature of Territorial Units for Statistics (NUTS) is one of the criteria that Türkiye is obliged to fulfil in the EU membership process. The aim of the application is defined as; the determination of regional policy framework, socio-economic analysis of the regions and generation of regional statistical data comparable at the European level. From this point of view, NUTS-II regions in Türkiye were associated with Regional Development Agencies and each Regional Development Agencies is responsible for one NUTS-II region as indicated in Table 1 and Figure 1.

Table 1. List of Regional Development Agencies in Türkiye

NUTS-II	Provinces	Regional Development Agency
TR31	İzmir	İzmir RDA
TR62	Adana-Mersin	Çukurova RDA
TR52	Karaman-Konya	Mevlana RDA
TR83	Amasya-Çorum-Samsun-Tokat	Middle Black Sea RDA
TRB2	Bitlis-Hakkâri-Muş-Van	Eastern Anatolia RDA
TRC1	Adıyaman-Gaziantep-Kilis	Silk Road RDA
TRC3	Batman-Mardin-Şırnak-Siirt	Tigris RDA
TR10	İstanbul	İstanbul RDA
TRC2	Diyarbakır-Şanlıurfa	Karacadağ RDA
TRA1	Bayburt-Erzincan-Erzurum	Northeast Anatolia RDA
TR21	Edirne-Kırklareli-Tekirdağ	Thrace RDA
TR22	Balıkesir-Çanakkale	Southern Marmara RDA
TR32	Aydın-Denizli-Muğla	Southern Aegean RDA
TR33	Afyonkarahisar-Kütahya-Manisa-Uşak	Zafer RDA
TR41	Bilecik-Bursa-Eskişehir	Bursa Eskişehir Bilecik RDA
TR42	Bolu-Düzce-Kocaeli-Sakarya-Yalova	Eastern Marmara RDA
TR51	Ankara	Ankara RDA
TR61	Antalya-Burdur-Isparta	West Mediterranean RDA
TR63	Hatay-Kahramanmaraş-Osmaniye	Eastern Mediterranean RDA
TR71	Aksaray-Kırıkkale-Kırşehir-Nevşehir-Niğde	Ahiler RDA
TR72	Kayseri-Sivas-Yozgat	Central Anatolia RDA
TR81	Bartın-Karabük-Zonguldak	Western Black Sea RDA
TR82	Çankırı-Kastamonu-Sinop	North Anatolian RDA
TR90	Artvin-Giresun-Gümüşhane-Ordu-Rize-Trabzon	Serhat RDA
TRA2	Ağrı-Ardahan-Iğdır-Kars	Serhat RDA
TRB1	Bingöl-Elazığ-Malatya-Tunceli	Euphrates RDA

Source: (Şimşek, 2013).

Figure 1. Map of NUTS-II Regions in Türkiye



Regional Development Agencies offer financial and technical support to regional shareholders in line with pre-determined criteria to accelerate the region's development process and implement activities of critical importance for the region. These supports are implemented under two topics, as Financial Support and Technical Support, as described below (*Kalkınma Ajansları Destek Yönetimi Kılavuzu*, 2021; 12-106).

Direct Financing Support, which is implemented within the scope of Financial Support, is a type of funding provided by the Regional Development Agencies to specific projects, mainly through the "call for project proposal" method and within the framework of certain rules. However, apart from the call for project proposals, the agency can also provide direct support in the form of "Feasibility Support" and "Guided Project Support".

Funding support is the type of aid served by Regional Development Agencies to cover the financing expenses paid for the loans taken from the relevant intermediary institutions for the projects. Interest-Free Credit Support, on the other hand, is a type of aid for interest-free loans provided by intermediary institutions to applicant companies.

The purpose of Technical Support is to prop up the efforts of local actors in the region for issues related to regional development, which face difficulties during the preparation and implementation phase stemming from a lack of institutional capacity. For this purpose, relevant support is served in subjects such as providing training, contributing to the preparation of programs and projects, assigning temporary expert personnel, receiving consultancy services, lobbying activities and establishing international relations.

Within the scope of this study, the performance of 26 Regional Development Agencies operating in Türkiye is evaluated in terms of Financial Support Programs (FSP) offered between the years 2006-2021 by Logarithm Methodology of Additive Weights (LMAW) and Double Normalization-Based Multiple Aggregation (DNMA) methods. Relevant data is officially requested from the Republic of Türkiye Ministry of Industry and Technology Development Agencies General Directorate. The data provided includes Financial Support Programs implemented for-profit and non-profit organizations, technical support programs and guided project supports applied by 26 Development Agencies. However, only the financial support of for-profit and non-profit organizations is taken into consideration for evaluation and calculated separately.

Regional Development Agencies, one of the most prominent institutions of our country, are legal entities operating in different regions under the coordination of the Ministry of Industry and Technology. The financial support programs they have been implementing since 2006 have triggered the investments of both public institutions and the private sector. However, there has not been any practice to measure the performance of the Regional Development Agencies in terms of these financial support programs implemented. Therefore, it is expected that this study will guide the Ministry of Industry and Technology in the performance measurement of institutions operating within their own structure.

This study, in which the performances of Regional Development Agencies are handled and evaluated as a decision-making problem, is expected to contribute to the literature. Furthermore, it is hoped that the results obtained will guide policymakers.

Within the scope of this research, a comprehensive literature review is presented in Section 2. The framework of the methodology introduced in Section 3 is explained in detail, and thereafter, the case study is examined in Section 4. Sensitivity analysis is illustrated in Section 5, and finally, the results are discussed in Section 6.

## 2. Literature Review

Decision-making is one of the substantial and fundamental processes for an organization's corporate goals. In this context, it is necessary to establish the targets correctly, determine possible solutions, evaluate them in terms of benefits and costs, and choose and implement the most suitable alternative (Alinezhad and Khalili, 2019; 14). In addition, Multi-Criteria Decision-Making (MCDM) is a set of approaches and techniques that allow ranking alternatives from most preferred to least preferred. The main purpose of the applied methods is not to make the final decision directly but to help with thinking and decision-making (Dodgson et. al., 2009: 46).

There are so many manuscripts about the legal status, history and best practices of Regional Development Agencies, but there is no study realized aiming to measure the performance of these institutions. For this reason, financial support programs, which are one of the main performance indicators of Regional Development Agencies, are discussed within the scope of this study and it is examined which Regional Development Agency performs better in terms of this indicator.

Studies carried out in recent years to examine Regional Development Agencies in Türkiye from various perspectives are as follows;

A study was conducted by Özkan and Boylu (2022) in order to determine the impact and role of the Eastern Anatolia Development Agency (DAKA) in regional development in terms of tourism. As a result, it has been determined that the Eastern Anatolia Development Agency has not set any goals and objectives for tourism, has focused on promotional activities for the region since 2010, has been engaged in activities for archaeological and cultural heritage, and has organized scientific activities to find solutions to the problems of the region in terms of tourism. Within the scope of the project, it has been revealed that DAKA mainly works with public institutions and supports projects for alternative tourism types

In his study, Özişik (2021) determined some inconsistencies between the objectives expected to be realized according to the founding goals of the Regional Development Agencies and the implementation in practice. He also revealed that, even though the foundation of Regional Development Agencies in Türkiye was initially considered a requirement of the adaptation process with the European Union, they became a part of the national policy and centralized management approach over time.

Akbulut and Göküş (2017) aimed to examine the emergence process and effectiveness of Regional Development Agencies, which have become popular actors in the localization process brought about by the globalization phenomenon. Today, when the concepts of globalization and localization maintain their importance, they suggest that Regional Development Agencies should fulfil their institutionalization processes in order to develop participatory development.

Utilizing statistical data, Ultan and Saygın (2016) aimed to make an assessment of to what extent Regional Development Agencies affect Türkiye's regional development and to what extent Regional Development Agencies reach their founding goals. According to the results of their study, it is emphasized that in order to be considered "effective regional development tools" for Regional Development Agencies, the issue of reducing intra-regional disparities should be focused on rather than reducing the disparities between regions.

Although few fuzzy versions have been used in the literature, studies using the LMAW method have not been encountered more than once since it is an extremely new method. Similar to this situation, there are not many manuscripts published in the literature since the DNMA method is a recently introduced method as well.

In order to examine the potential of production systems of the heavy industry branches by means of cyber-physical systems, Görçün and Küçükönder (2022) utilized the LMAW method where the prominent criterion is determined as Overall Equipment Efficiency and the prominent branch of heavy industry is determined as Aerospace Industry.

By means of LMAW and DNMA methods together, Demir (2022) aimed to develop a multi-criteria model to measure and evaluate the performance of the deposit banking sector during the COVID-19 pandemic. The LMAW method was used for the weighting of the criteria, and the DNMA method was used to determine the performance order of the deposit banks.

Within the scope of this method, Pamucar et al. (2021) analysed the performance of six logistics service providers using the criteria of annual overhead expense, annual fuel consumption, cost of delay, innovativeness, average customer rating and turnover. According to the results of the analyse, the applied method resulted in consistent sorting of alternatives which is not affected by rank reversal implementation. By means of this study, the LMAW method is introduced to the literature.

Lai and Liao (2021) introduced a new approach for the evaluation of blockchain platforms by using linguistic D numbers (LDN), Double Normalization-Based Multiple Aggregation (DNMA) method and Criteria Importance through Inter-criteria Correlation (CRITIC) method together. During the implementation of the method, performance efficiency, interactivity, scalability, reliability, security, portability, maintainability, and cost criteria were taken into account for four different blockchain platforms. The CRITIC method is integrated into the LDN-based DNMA method to reveal correlations among criteria in the blockchain platform evaluation process.

The new Double Normalization-Based Multiple Aggregation method is proposed by Liao and Wu (2020) for green enterprise ranking problems and excavation scheme selection problems. This method is a multi-criteria decision-making method that includes benefit, cost and target criteria with quantitative and qualitative features. In this method, linguistic terms can be used. Linear normalization and vector normalization are used together while weight adjustment processes are performed to realize a trade-off between the criteria. The method also proposes a ranking method consisting of three sub-models based on three aggregation techniques.

By taking the DNMA method one step further to address Cloud Service Provider (CSP) selection problem, the Z-DNMA method is developed by Lai et. al. (2020). The weighting method based on the mean square used in the classical DNMA method was altered and the weighting method based on the Gini coefficient was applied. During the implementation of the method, cost, reliability, availability, response time and throughput criteria were taken into account for four different cloud service providers. After the normalization stage, they aimed to improve the applicability and isotonicity of the DNMA method by extending this approach to the Z-number environment level for the trade-off between criteria.

Wu and Liao (2019) conducted a study in order to compare the DNMA method and the TOPSIS, VIKOR and MULTIMOORA methods, which are among the other multi-criteria

decision-making methods based on utility value. Based on the results of this study, since TOPSIS, VIKOR and MULTIMOORA methods are calculated with only one normalization approach, they cause a certain amount of information loss. At the same time, the appropriate combination of normalization and aggregation approaches is not taken into account. The DNMA method, on the other hand, becomes a more advantageous application in terms of flexibility, reliability and simplicity, as it uses different normalization and aggregation approaches.

In order to determine the best methods for healthcare waste management, Saha et. al. (2022) used five alternative methods consisting of chemical disinfection, microwave disinfection, incineration, autoclaving (steam sterilization) and reverse polymerization following up weighting the criteria by means of FUCOM method. The results indicate that autoclaving (steam sterilization) would be the most efficient healthcare waste management method.

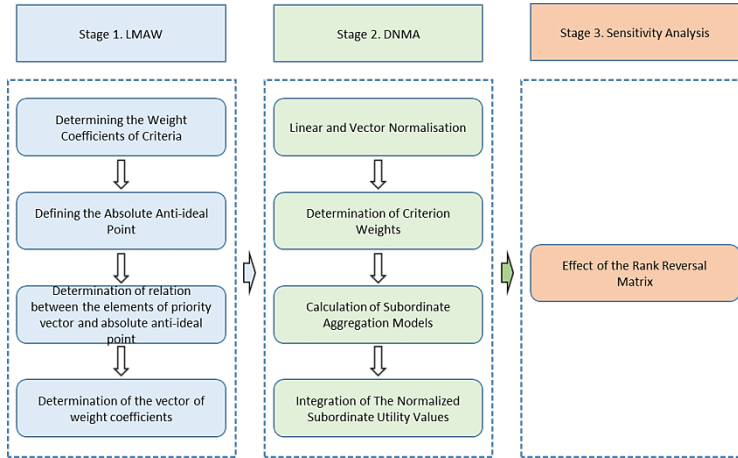
Hezam et. al. (2022) applied the MEREC and RS methods simultaneously in order to evaluate the objective and subjective criteria taken into consideration in the study, which included electric vehicles, hybrid vehicles and hydrogen-powered vehicles as alternatives. Evaluation results revealed that electric vehicles might serve as a prominent alternative to reduce carbon emissions and negative impacts on the environment.

Following up weighting fourteen criteria used to determine the performances of countries in terms of economic freedom with the MEREC method, Ecer and Zolfani (2022) realized the performance ranking of OPEC countries by means of the DNMA method. In the study, the most important indicator of economic freedom emerged as "investment freedom". Among the OPEC countries, the best-performing country in terms of economic freedom was determined to be the United Arab Emirates.

### **3. Methods**

The aim of this study is to measure and evaluate the performance of Regional Development Agencies operating in Türkiye in terms of Financial Support Programs they implement for both non-profit and profit organizations. The data regarding the evaluation criteria used in performance measurement have been determined in line with the official letter sent from the Ministry of Industry and Technology of the Republic of Türkiye. The weights of the criteria were obtained by the LMAW approach, which is one of the new methods in which both qualitative and quantitative data can be used together, and the opinions of decision-makers can be included in the weighting process of the criteria. Afterwards, the financial support performance scores and orders of Regional Development Agencies were obtained by using the DNMA approach, which is a quite new MCDM method. The advantage of this model is that the opinions of experts are included in the analysis by the LMAW method, and on the other hand, the best alternative can be selected by means of the DNMA method using two normalized techniques and three aggregation approaches together. The study consists of three stages. LMAW method, DNMA method and sensitivity analysis were carried out, respectively. The Flowchart of the model covering the applied methods is given in Figure 2.

Figure 2. Flowchart of the Study



### 3.1 LMAW Method

The LMAW method was introduced to the literature by Pamucar et al. in 2021. Therefore, it is one of the up-to-date methods used for weighting criteria and ordering alternatives. LMAW method was preferred for such reasons that; it provides higher stability compared to similar methods such as TOPSIS, it is quite stable against rank reversal analysis, the mathematical framework of the method remains the same regardless of the number of alternatives and criteria, it is suitable for use in applications that consider different alternatives and criteria, and it allows to use qualitative and quantitative criteria together. The calculations aiming to find the criterion weight coefficients is explained here and the application steps of this method are as follows (Pamucar et. al., 2021).

By participation of  $k$  experts  $E = \{E_1, E_2, \dots, E_k\}$ ,  $m$  alternatives  $A = \{A_1, A_2, \dots, A_m\}$  are evaluated depending on  $n$  criteria  $C = \{C_1, C_2, \dots, C_n\}$  and by means of a predefined linguistic scale.

Step 1: Determining the Weight Coefficients of the Criteria

Experts in the  $E = \{E_1, E_2, \dots, E_k\}$  cluster prioritize the  $C = \{C_1, C_2, \dots, C_n\}$  criteria over previously defined linguistic scale values. The prioritization process expressed here assigns a high value to the criterion of high importance and a low value to the criterion of low importance. At the end of the process, the priority vector  $P^e = (\gamma_{C_1}^e, \gamma_{C_2}^e, \dots, \gamma_{C_n}^e)$  is obtained.

Here,  $\gamma_{C_n}^e$  represents the linguistic scale value assigned by expert  $e$  ( $1 \leq e \leq k$ ) to criterion  $C_t$  ( $1 \leq t \leq n$ ).

Step 1.1: Defining the absolute anti-ideal point ( $\gamma_{AIP}$ )

The absolute ideal point ( $\gamma_{AIP}$ ) defined by the minimum values of the priority vector and must be less than the minimum value of the priority vector. The relevant value is calculated by the equation;

$$\gamma_{AIP} = \frac{\gamma_{min}^e}{s}$$



where  $Y_{min}^e$  is the minimum value of the priority vector. The value of  $s$  should be greater than the base of the logarithmic function. Thus, if the logarithmic function is considered as Ln function, the  $s$  value may be preferred as 3.

Step 1.2: Determination of the relation between the elements of the priority vector and absolute anti-ideal point

By means of Equation (1) below, the relation between the elements of the priority vector and the absolute anti-ideal point is calculated.

$$\eta_{Cn}^e = \frac{Y_{Cn}^e}{Y_{AIP}} \quad (1)$$

Thus and so, the relation vector  $R^e = (\eta_{C1}^e, \eta_{C2}^e, \dots, \eta_{Cn}^e)$  is acquired where  $\eta_{Cn}^e$  represents the value from the relation vector derived from Equation (1) and  $R^e$  represents the relation vector of  $e$  ( $1 \leq e \leq k$ ).

Step 1.3: Determination of the vector of weight coefficients  $w_j = (w_1, w_2, \dots, w_n)^T$

By implementing Equation (2), the values of weight coefficients of the criteria are calculated for expert  $e$  ( $1 \leq e \leq k$ ).

$$w_j^e = \frac{\log_A(\eta_{Cn}^e)}{\log_A(\prod_{j=1}^n \eta_{Cn}^e)}, A > 1 \quad (2)$$

$\eta_{Cn}^e$  expression in the equation represents the elements of relation vector  $R$  and  $w_j^e$  indicates the weight coefficients obtained based on the evaluations of the  $e^{\text{th}}$  expert. All the weight coefficients determined should meet the condition of  $\sum_{j=1}^n w_j^e = 1$ .

Thereafter, aggregated vector of weight coefficients  $w_j = (w_1, w_2, \dots, w_n)^T$  is obtained by applying the Bonferroni aggregator as indicated in Equation (3).

$$w_j = \left( \frac{1}{k \cdot (k-1)} \cdot \sum_{x=1}^k (w_j^{(x)})^p \cdot \sum_{\substack{y=1 \\ y \neq x}}^k (w_{ij}^{(y)})^q \right)^{\frac{1}{p+q}} \quad (3)$$

$p$  and  $q$  values in the equation are the stabilization parameters of the Bonferroni aggregator where  $p$  and  $q \geq 0$ .

### 3.2 DNMA Method

The DNMA method, which is one of the up-to-date methods aiming to order alternatives, was introduced to the literature by Liao and Wu (2020). The method takes two different normalizations (linear and vector) techniques and three different aggregations (Complete Compensatory Model-CCM, Un-compensatory Model-UCM, Incomplete Compensatory Model-ICM) functions into account. The advantage of this model is that, the best alternative can be selected by means of two normalized techniques and three aggregation approaches together. This method can deal with quantitative and qualitative criteria simultaneously. Besides, benefit, cost and target-based criteria can be evaluated synchronously. Three aggregation models with different functions also improve the reliability of the method. This method also enables the decision-makers to feel more flexible. That's why this application

renders the decision-making process a robust method compared with other methods. The application steps of this method are as follows (Liao and Wu, 2020):

Step 1: Linear and Vector Normalisation

The decision matrix is normalized by both linear normalization ( $\tilde{x}_{ij}^{1N}$ ) and vector normalization ( $\tilde{x}_{ij}^{2N}$ ) by means of Equation (4) and Equation (5), respectively.

$$\tilde{x}_{ij}^{1N} = 1 - \frac{|x^{ij} - r_j|}{\max\{\max_i x^{ij}, r_j\} - \min\{\min_i x^{ij}, r_j\}} \tag{4}$$

$$\tilde{x}_{ij}^{2N} = 1 - \frac{|x^{ij} - r_j|}{\sqrt{\sum_{i=1}^m (x^{ij})^2 + (r_j)^2}} \tag{5}$$

The  $r_j$  value is the target value for the  $c_j$  criterion and will be taken into account as  $\max_i x^{ij}$  for benefit-oriented criteria and  $\min_i x^{ij}$  for cost-oriented criteria.

Step 2: Determination of Criterion Weights

Determination of criterion weights step is applied in 3 phases.

Step 2.1: Standard deviation ( $\sigma_j$ ) of the criterion  $c_j$  is determined by Equation (6) where  $m$  indicates the number of alternatives.

$$\sigma_j = \sqrt{\frac{\sum_{i=1}^m \left( \frac{x^{ij}}{\max_i x^{ij}} - \frac{1}{m} \sum_{i=1}^m \left( \frac{x^{ij}}{\max_i x^{ij}} \right) \right)^2}{m}} \tag{6}$$

Step 2.2: Normalization of the standard deviation values calculated for the criteria by Equation (7).

$$w_j^\sigma = \frac{\sigma_j}{\sum_{i=1}^n \sigma_j} \tag{7}$$

Step 2.3: Adjust the criterion weights by Equation (8).

$$\tilde{w}_j = \frac{\sqrt{w_j^\sigma \cdot w_j}}{\sum_{i=1}^n \sqrt{w_j^\sigma \cdot w_j}} \tag{8}$$

Step 3: Calculation of Subordinate Aggregation Models

CCM (complete compensatory model), UCM (uncompensatory model) and ICM (incomplete compensatory model) aggregation models are calculated individually for each alternative based on the two normalization methods applied.

CCM, UCM and ICM are calculated by Equation (9), Equation (10) and Equation (11), respectively.

$$u_1(a_i) = \sum_{j=1}^n \frac{\tilde{w}_j \cdot \tilde{x}_{ij}^{1N}}{\max_i \tilde{x}_{ij}^{1N}} \tag{9}$$

$$u_2(a_i) = \max_j \tilde{w}_j \left( \frac{1 - \tilde{x}_{ij}^{1N}}{\max_i \tilde{x}_{ij}^{1N}} \right) \quad (10)$$

$$u_3(a_i) = \prod_{j=1}^n \left( \frac{\tilde{x}_{ij}^{2N}}{\max_i \tilde{x}_{ij}^{2N}} \right)^{\tilde{w}_j} \quad (11)$$

#### Step 4: Integration of The Normalized Subordinate Utility Values

Three types of subordinate utility values of each alternative are integrated by the weighted Euclidean distance formula as indicated in Equation (12).

$$DN_i = w_1 \sqrt{\varphi \left( \frac{u_1(a_i)}{\max_i u_1(a_i)} \right)^2 + (1 - \varphi) \left( \frac{m - r_1(a_i) + 1}{m} \right)^2} \\ - w_2 \sqrt{\varphi \left( \frac{u_2(a_i)}{\max_i u_2(a_i)} \right)^2 + (1 - \varphi) \left( \frac{r_2(a_i)}{m} \right)^2} \\ + w_3 \sqrt{\varphi \left( \frac{u_3(a_i)}{\max_i u_3(a_i)} \right)^2 + (1 - \varphi) \left( \frac{m - r_3(a_i) + 1}{m} \right)^2} \quad (12)$$

$r_1(a_i)$  and  $r_3(a_i)$  used in the above formula represent the sequence number for the alternative  $a_i$  which is sorted according to the CCM and ICM functions in descending order (the highest value first). On the other hand,  $r_2(a_i)$  indicates the sequence number in the order obtained for the UCM utility function in ascending order (smallest value first). The  $\varphi$  coefficient is the relative importance of the subordinate utility values and takes a value in the range of [0,1]. Those who developed the method recommend that it could be assumed as  $\varphi = 0.5$ . The coefficients  $w_1, w_2, w_3$  are the importance weights of CCM, UCM and ICM utility functions, respectively. It is determined by the decision makers as the sum of the weights is  $w_1 + w_2 + w_3 = 1$ . When determining the weights, if the decision maker gives importance to the wide-ranging performance of the alternatives, he can assign the greatest weight to  $w_1$ . In case the decision maker is not willing to take risks, i.e., the chosen alternative should not perform poorly according to some criteria, he can assign the greatest weight to  $w_2$ . However, the decision-maker can assign the greatest weight to  $w_3$  if he considers both the overall performance and the risks. Finally, the  $DN$  values are sorted in descending order, where the alternative with the highest value will be evaluated as the best.

## 4. Performances Evaluation of Regional Development Agencies

### 4.1. Problem Description

This study it is aimed to determine the performance orders of Regional Development Agencies operating in Türkiye through the criteria and multi-criteria decision-making methods based on the Financial Support Programs they announced between the years 2006-2021. The evaluation is carried out through the Financial Support Programs implemented by the Regional Development Agencies for both profit and non-profit organizations, and the relevant data were obtained from the Ministry of Industry and Technology of the Republic of Türkiye by official letter. Therefore, the criteria used in the study were created in accordance with the

parameters requested by the Ministry of Industry and Technology from the Regional Development Agencies for their annual reports.

All Regional Development Agencies, criteria used in the study and relevant codes are listed in Table 2.

Table 2. Regional Development Agencies, Criteria and Codes

ALTERNATIVES		CRITERIA	
Code	Regional Development Agency	Code	Criteria
ALT1	Ahiler Development Agency	CA1	Number of Calls for Financial Support Program for Non-Profit Organizations
ALT2	Ankara Development Agency	CA2	Total Call Budgets for Non-Profit Organizations (₺)
ALT3	West Mediterranean Development Agency	CA3	Total Number of Applications of Non-Profit Organizations
ALT4	Western Black Sea Development Agency	CA4	Number of Successful Projects for Non-Profit Organizations
ALT5	Bursa Eskişehir Bilecik Development Agency	CA5	Number of Contracted Projects for Non-Profit Organizations
ALT6	Çukurova Development Agency	CA6	Number of Successfully Completed Projects for Non-Profit Organizations
ALT7	Tigris Development Agency	CA7	Number of Terminated Projects for Non-Profit Organizations
ALT8	Eastern Mediterranean Development Agency	CA8	Contribution Amount of Development Agency for Non-Profit Organizations (₺)
ALT9	Eastern Anatolia Development Agency	CA9	Co-financing Amount for Non-Profit Organizations (₺)
ALT10	Eastern Black Sea Development Agency		
ALT11	Eastern Marmara Development Agency	CB1	Number of Calls for Financial Support Program for Profit Organizations
ALT12	Euphrates Development Agency	CB2	Total Call Budgets for Profit Organizations (₺)
ALT13	Southern Aegean Development Agency	CB3	Total Number of Applications of Profit Organizations
ALT14	Southern Marmara Development Agency	CB4	Number of Successful Projects for Profit Organizations
ALT15	Silk Road Development Agency	CB5	Number of Contracted Projects for Profit Organizations
ALT16	İstanbul Development Agency	CB6	Number of Successfully Completed Projects for Profit Organizations
ALT17	İzmir Development Agency	CB7	Number of Terminated Projects for Profit Organizations
ALT18	Karacadağ Development Agency	CB8	Contribution Amount of Development Agency for Profit Organizations (₺)
ALT19	North Anatolian Development Agency	CB9	Co-financing Amount for Profit Organizations
ALT20	Northeast Development Agency		
ALT21	Mevlana Development Agency		
ALT22	Central Anatolia Development Agency		
ALT23	Middle Black Sea Development Agency		
ALT24	Serhat Development Agency		
ALT25	Thrace Development Agency		
ALT26	Zafer Development Agency		

The data in the first two columns as alternatives represent 26 Regional Development Agencies operating in Türkiye and the codes assigned for each. The distinction between the criteria CA and CB in the last two columns is due to the separate evaluation of calls for Financial Support Programs applied to non-profit and profit organizations by Regional Development Agencies.

#### 4.2. Explanation of the Data

Data on the Financial Support Programs implemented by the Regional Development Agencies for non-profit organizations are given in Table 3, while the Financial Support Programs implemented by for-profit organizations are summarized in Table 4.

Table 3. Financial Support Programs for Non-Profit Organizations

	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
ALT1	12	100,991,247	1,162	277	161	140	20	54,767,804	83,432,796
ALT2	18	171,500,000	1,450	512	249	243	6	67,265,520	81,647,551
ALT3	13	134,176,445	1,633	651	182	167	26	62,290,432	88,816,627
ALT4	10	75,500,000	600	262	175	134	3	60,115,378	83,744,211
ALT5	19	171,000,000	1,463	407	237	206	8	102,745,389	136,060,407
ALT6	22	161,500,000	1,914	517	321	299	14	102,165,678	149,844,996
ALT7	11	90,585,539	333	166	116	109	23	78,348,749	117,113,970
ALT8	12	108,500,000	660	258	195	177	10	88,947,035	136,615,281
ALT9	9	76,908,658	807	180	48	43	14	45,538,614	69,721,349
ALT10	10	75,175,000	639	282	187	157	10	71,280,383	105,968,750
ALT11	10	54,779,265	505	185	127	114	10	60,573,252	81,011,703
ALT12	8	72,500,000	412	142	75	55	7	51,056,824	72,080,602
ALT13	14	114,600,000	927	403	175	131	12	88,654,421	137,058,419
ALT14	15	117,091,128	1,423	471	265	262	5	79,075,184	105,018,706
ALT15	15	123,105,218	821	430	234	231	33	71,808,018	110,809,207
ALT16	33	948,500,000	4,635	862	801	643	16	687,771,319	836,597,300
ALT17	17	209,441,489	1,509	576	314	308	17	125,429,849	175,189,226
ALT18	21	133,350,000	1,477	744	207	181	25	65,542,823	104,346,483
ALT19	5	48,000,000	254	77	38	32	9	43,019,273	69,442,141
ALT20	15	97,567,500	901	301	203	139	12	99,654,405	146,362,209
ALT21	13	166,000,000	1,767	746	279	226	24	73,932,856	116,340,153
ALT22	14	97,697,000	1,066	366	176	149	37	68,812,098	108,265,225
ALT23	11	145,862,500	972	353	241	228	23	95,646,363	185,660,598
ALT24	10	82,850,000	671	253	167	135	12	77,195,557	126,622,895
ALT25	18	70,404,802	1,384	423	295	285	21	66,732,726	92,471,446
ALT26	13	159,200,000	1,291	466	275	222	20	127,698,559	229,658,595

Table 4. Financial Support Programs for Profit Organizations

	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9
ALT1	7	74,418,753	840	246	173	173	18	57,705,832	122,524,766
ALT2	14	158,500,000	1,038	400	222	201	15	51,881,617	138,293,278
ALT3	11	96,923,882	1,497	580	171	169	32	42,814,039	93,550,678
ALT4	5	47,500,000	587	247	144	137	10	37,575,523	78,398,037
ALT5	11	90,000,000	858	277	137	133	16	39,782,858	84,239,831
ALT6	14	186,000,000	2,398	852	424	422	58	143,580,856	325,277,096
ALT7	7	59,951,461	468	234	121	119	37	27,620,395	59,488,708
ALT8	17	141,500,000	1,321	504	292	268	72	70,270,435	167,621,102
ALT9	8	83,177,635	1,502	431	203	203	39	48,138,740	99,641,155
ALT10	5	48,000,000	683	306	222	209	24	40,388,682	81,538,419
ALT11	15	82,850,000	1,124	405	240	240	21	57,594,951	123,749,105
ALT12	10	76,700,000	1,213	397	246	243	29	65,580,224	137,756,429
ALT13	10	92,600,000	1,011	364	167	150	8	54,452,778	118,620,856
ALT14	8	81,908,872	858	219	124	123	6	34,048,325	70,707,401
ALT15	11	101,800,000	863	393	160	160	38	31,555,280	67,045,285
ALT16	11	213,500,000	1,504	160	110	105	2	34,668,240	73,057,106
ALT17	11	141,130,293	1,590	569	225	22	12	66,688,891	141,646,026
ALT18	13	135,750,000	1,032	423	319	309	30	67,992,492	159,899,422
ALT19	6	61,500,000	583	300	190	190	30	45,418,780	93,853,118
ALT20	13	87,205,000	1,076	379	250	193	36	43,612,882	136,032,072
ALT21	9	149,000,000	1,591	905	274	270	58	77,943,185	161,035,788
ALT22	12	99,717,278	1,445	488	218	218	50	55,451,644	116,930,301
ALT23	6	54,500,000	1,167	323	201	200	18	41,927,881	87,437,396
ALT24	14	68,346,560	817	332	204	190	21	48,463,101	99,554,890
ALT25	7	45,000,000	606	140	90	90	6	20,094,341	43,021,217
ALT26	7	113,200,000	1,141	345	201	201	32	61,722,403	130,135,780

**4.3. LMAW Method Application**

Since the final beneficiaries of the Financial Support Programs are the representatives of industrial organizations and managers of public institutions, evaluation is made by using the linguistic scale with the participation of four Decision Makers (DM) doing business in these fields. The importance levels of the criteria were determined by the final beneficiaries of the financial support programs and no significant contradictions were found between the assessments of these four decision-makers. For this reason, it is foreseen that it would not be meaningful to involve more decision-makers in the process.

To calculate the weight coefficient values for each criterion, these four experts stated their own comments based on the scale indicated in Table 5.

Table 5. Prioritization Scale

Linguistic Variables	Prioritization Score
Absolutely Low (AL)	1
Very Low (VL)	1.5
Low (L)	2
Medium (M)	2.5
Equal (E)	3
Medium High (MH)	3.5
High (H)	4
Very High (VH)	4.5
Absolutely High (AH)	5

Source: (Pamucar et. al., 2021)

Priority vectors obtained with the opinions of four experts for the criteria relevant to calls for non-profit organizations are given in Table 6, and the implementation steps are explained.

Table 6. Priority Vector of Criteria for Calls towards Non-profit Organizations

	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
DM1	4	5	5	4.5	4.5	5	3	4.5	4
DM2	4.5	4	4.5	4.5	5	4.5	2.5	4.5	4.5
DM3	5	4.5	4.5	5	5	4.5	3.5	5	5
DM4	4.5	5	4.5	4.5	4.5	5	2	5	5

The absolute anti-ideal point ( $Y_{AIP}$ ) is arbitrarily defined as  $Y_{AIP} = 0.5$ . The relationship between the elements of the priority vector and the absolute anti-ideal point ( $Y_{AIP}$ ) is determined by means of Equation (1) based on the data obtained from the expert priority vectors and  $Y_{AIP} = 0.5$ . The relationships between the elements of the priority vector and the absolute anti-ideal point are presented in the following section.

The elements of the vector  $R^1$  are obtained by applying Equation (1) as follows.

$$\eta_{CA_1}^1 = \frac{4}{0,5} = 8, \eta_{CA_2}^1 = \frac{5}{0,5} = 10, \eta_{CA_3}^1 = \frac{5}{0,5} = 10, \eta_{CA_4}^1 = \frac{4,5}{0,5} = 9, \eta_{CA_5}^1 = \frac{4,5}{0,5} = 9,$$

$$\eta_{CA_6}^1 = \frac{5}{0,5} = 10, \eta_{CA_7}^1 = \frac{3}{0,5} = 6, \eta_{CA_8}^1 = \frac{4,5}{0,5} = 9, \eta_{CA_9}^1 = \frac{4}{0,5} = 8$$

$$R^1 = (8, 10, 10, 9, 9, 10, 6, 9, 8)$$

The remaining elements of vectors  $R^2, R^3$  and  $R^4$  are calculated in a similar manner.

The elements of the first expert's vector  $w_j^1$  are calculated individually to create the weight coefficients vector by applying Equation (2) as follows.

$$w_1^1 = \frac{\ln(8)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1069 \quad w_2^1 = \frac{\ln(10)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1184$$

$$w_3^1 = \frac{\ln(10)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1184 \quad w_4^1 = \frac{\ln(9)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1130$$

$$w_5^1 = \frac{\ln(9)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1130 \quad w_6^1 = \frac{\ln(10)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1184$$

$$w_7^1 = \frac{\ln(6)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.0921 \quad w_8^1 = \frac{\ln(9)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1130$$

$$w_9^1 = \frac{\ln(8)}{\ln(8.10.10.9.9.10.6.9.8)} = 0.1069$$

$$w_j^1 = (0.1069; 0.1184; 0.1184; 0.1130; 0.1130; 0.1184; 0.0921; 0.1130; 0.1069)$$

The values of weight coefficients obtained meet the condition of  $\sum_{j=1}^9 w_j^1 = 1$ . The remaining elements of vectors  $w_j^2, w_j^3$  and  $w_j^4$  are calculated in a similar manner.

$$w_j^2 = (0.1146; 0.1084; 0.1146; 0.1146; 0.1201; 0.1146; 0.0839; 0.1146; 0.1146)$$

$$w_j^3 = (0.1148; 0.1096; 0.1096; 0.1148; 0.1148; 0.1096; 0.971; 0.1148; 0.1148)$$

$$w_j^4 = (0.1133; 0.1188; 0.1133; 0.1133; 0.1133; 0.1188; 0.0715; 0.1188; 0.1188)$$

The aggregate vector of the weighting coefficients is obtained by applying Equation (3).

For instance, the value of 0.11241 is calculated by average values of  $w_j^e$  ( $1 \leq e \leq 4$ ) for each expert where  $w_1^1 = 0.1069$ ,  $w_1^2 = 0.1146$ ,  $w_1^3 = 0.1148$  and  $w_1^4 = 0.1133$  as follows.

$$w_1 = \{0.1069 \ 0.1146 \ 0.1148 \ 0.1133\}^{p,q=1}$$

$$= \sqrt[4]{\frac{0.1069^1 \cdot 0.1146^1 + 0.1069^1 \cdot 0.1148^1 + 0.1069^1 \cdot 0.1133^1 + \dots + 0.1133^1 \cdot 0.1069^1 + 0.1133^1 \cdot 0.1146^1 + 0.1133^1 \cdot 0.1148^1}{4(4-1)}}$$

$$= 0.11241$$

The remaining values of the vectors of the weight coefficients are obtained in a similar way.

$$w_j = (0.11241; 0.11376; 0.11396; 0.11393; 0.11530; 0.11531; 0.08597; 0.11529; 0.11375)^T$$

In the evaluation made for FSPs for non-profit organizations, the Number of Successfully Completed Projects criterion (CA6) emerged as the most important criterion, while the Number of Terminated Projects criterion (CA7) emerged as the least important. This approach reveals that the successfully completion of a project is perceived as an important performance indicator for non-profit organizations such as Public Institutions, Special Provincial Administration, Chamber of Industry and Commerce, Organized Industrial Zone Directorate, Non-Governmental Organizations etc. The decision-makers strongly emphasize that the Number of Terminated Projects criterion placed at the bottom does not indicate that this criterion is insignificant, but it is in the last order relatively.

Priority vectors obtained with the opinions of four experts for calls towards FSPs for-profit organizations are given in Table 7.

Table 7. Priority Vector of Criteria for Calls Towards Profit Organizations

	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9
DM1	4	5	5	4.5	4.5	5	3	4.5	4
DM2	4.5	4.5	4	4.5	5	4.5	3	4.5	4.5
DM3	5	4.5	4.5	5	4.5	4	3.5	5	5
DM4	4.5	5	4.5	4.5	4.5	5	3	5	5

By applying the same Equations, values for the vectors of the weight coefficients are obtained for calls towards profit organizations in a similar manner as indicated below.

$$w_j = (0.11188; 0.11475; 0.11189; 0.113940; 0.11342; 0.11324; 0.09333; 0.11474; 0.11320)^T$$

Total Call Budget (CB2) has emerged as the most important criterion in the calls for FSPs applied to profit organizations. The fact that this criterion is relatively high reveals the attitudes of Regional Development Agencies, especially towards industrial and service organizations. It indicates how important these sectors are in the regions they are responsible for. As in the evaluation of calls for FSPs for non-profit organizations, the Number of Terminated Projects criterion (CB7) is in the last order as well.



#### 4.4. DNMA Method Application

By applying Equation (4) for the data in Table 3, the linear normalization matrix in Table 8 is obtained.

Table 8. Linear Normalization Matrix

	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
ALT1	0.2500	0.0588	0.2073	0.2548	0.1612	0.1768	0.5000	0.0182	0.0182
ALT2	0.4643	0.1371	0.2730	0.5541	0.2765	0.3453	0.9118	0.0376	0.0159
ALT3	0.2857	0.0957	0.3148	0.7312	0.1887	0.2209	0.3235	0.0299	0.0253
ALT4	0.1786	0.0305	0.0790	0.2357	0.1796	0.1669	1.0000	0.0265	0.0186
ALT5	0.5000	0.1366	0.2760	0.4204	0.2608	0.2848	0.8529	0.0926	0.0868
ALT6	0.6071	0.1260	0.3789	0.5605	0.3709	0.4370	0.6765	0.0917	0.1048
ALT7	0.2143	0.0473	0.0180	0.1134	0.1022	0.1260	0.4118	0.0548	0.0621
ALT8	0.2500	0.0672	0.0927	0.2306	0.2058	0.2373	0.7941	0.0712	0.0876
ALT9	0.1429	0.0321	0.1262	0.1312	0.0131	0.0180	0.6765	0.0039	0.0004
ALT10	0.1786	0.0302	0.0879	0.2611	0.1953	0.2046	0.7941	0.0438	0.0476
ALT11	0.1786	0.0075	0.0573	0.1376	0.1166	0.1342	0.7941	0.0272	0.0151
ALT12	0.1071	0.0272	0.0361	0.0828	0.0485	0.0376	0.8824	0.0125	0.0034
ALT13	0.3214	0.0740	0.1536	0.4153	0.1796	0.1620	0.7353	0.0708	0.0881
ALT14	0.3571	0.0767	0.2668	0.5019	0.2975	0.3764	0.9412	0.0559	0.0464
ALT15	0.3571	0.0834	0.1294	0.4497	0.2569	0.3257	0.1176	0.0447	0.0539
ALT16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6176	1.0000	1.0000
ALT17	0.4286	0.1793	0.2865	0.6357	0.3617	0.4517	0.5882	0.1278	0.1378
ALT18	0.5714	0.0948	0.2792	0.8497	0.2215	0.2439	0.3529	0.0349	0.0455
ALT19	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8235	0.0000	0.0000
ALT20	0.3571	0.0550	0.1477	0.2854	0.2163	0.1751	0.7353	0.0878	0.1003
ALT21	0.2857	0.1310	0.3454	0.8522	0.3159	0.3175	0.3824	0.0479	0.0611
ALT22	0.3214	0.0552	0.1853	0.3682	0.1809	0.1915	0.0000	0.0400	0.0506
ALT23	0.2143	0.1087	0.1639	0.3516	0.2661	0.3208	0.4118	0.0816	0.1515
ALT24	0.1786	0.0387	0.0952	0.2242	0.1691	0.1686	0.7353	0.0530	0.0745
ALT25	0.4643	0.0249	0.2579	0.4408	0.3368	0.4141	0.4706	0.0368	0.0300
ALT26	0.2857	0.1235	0.2367	0.4955	0.3106	0.3110	0.5000	0.1313	0.2088

In a similar manner, by applying Equation (5) for the data in Table 3, the vector normalization matrix in Table 9 is obtained.

Table 9. Vector Normalization Matrix

	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
ALT1	0.7503	0.4245	0.6001	0.7579	0.5870	0.6176	0.8164	0.3983	0.4349
ALT2	0.8217	0.4724	0.6332	0.8551	0.6438	0.6959	0.9676	0.4102	0.4336
ALT3	0.7622	0.4470	0.6543	0.9127	0.6006	0.6381	0.7516	0.4054	0.4390
ALT4	0.7266	0.4072	0.5353	0.7517	0.5961	0.6130	1.0000	0.4034	0.4352
ALT5	0.8336	0.4720	0.6347	0.8117	0.6361	0.6678	0.9460	0.4439	0.4744
ALT6	0.8692	0.4656	0.6867	0.8572	0.6903	0.7385	0.8812	0.4433	0.4847
ALT7	0.7384	0.4174	0.5046	0.7119	0.5580	0.5940	0.7840	0.4207	0.4602
ALT8	0.7503	0.4296	0.5423	0.7500	0.6090	0.6457	0.9244	0.4308	0.4748
ALT9	0.7147	0.4082	0.5592	0.7177	0.5141	0.5438	0.8812	0.3895	0.4246
ALT10	0.7266	0.4070	0.5398	0.7599	0.6038	0.6305	0.9244	0.4140	0.4518
ALT11	0.7266	0.3931	0.5244	0.7198	0.5651	0.5978	0.9244	0.4038	0.4331
ALT12	0.7028	0.4052	0.5137	0.7020	0.5315	0.5530	0.9568	0.3948	0.4264
ALT13	0.7741	0.4337	0.5730	0.8100	0.5961	0.6107	0.9028	0.4305	0.4752
ALT14	0.7860	0.4354	0.6301	0.8382	0.6541	0.7103	0.9784	0.4214	0.4511
ALT15	0.7860	0.4395	0.5608	0.8212	0.6341	0.6868	0.6760	0.4145	0.4555
ALT16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8596	1.0000	1.0000
ALT17	0.8098	0.4982	0.6400	0.8816	0.6858	0.7453	0.8488	0.4655	0.5038
ALT18	0.8573	0.4465	0.6363	0.9512	0.6167	0.6488	0.7624	0.4085	0.4506
ALT19	0.6671	0.3885	0.4955	0.6751	0.5077	0.5355	0.9352	0.3871	0.4244
ALT20	0.7860	0.4222	0.5700	0.7678	0.6141	0.6168	0.9028	0.4410	0.4821
ALT21	0.7622	0.4687	0.6697	0.9520	0.6632	0.6830	0.7732	0.4165	0.4596
ALT22	0.7741	0.4223	0.5890	0.7947	0.5967	0.6244	0.6329	0.4116	0.4536
ALT23	0.7384	0.4550	0.5782	0.7893	0.6387	0.6845	0.7840	0.4371	0.5116
ALT24	0.7266	0.4122	0.5435	0.7479	0.5909	0.6138	0.9028	0.4196	0.4673
ALT25	0.8217	0.4037	0.6256	0.8183	0.6735	0.7278	0.8056	0.4097	0.4417
ALT26	0.7622	0.4640	0.6149	0.8361	0.6606	0.6799	0.8164	0.4676	0.5446

By means of Equation (6), the standard deviations of the criteria are calculated in order to adjust the criterion weights and the results are given in Table 10.

Table 10. Standard Deviations of the Criteria

$\sigma_1$	$\sigma_2$	$\sigma_3$	$\sigma_4$	$\sigma_5$	$\sigma_6$	$\sigma_7$	$\sigma_8$	$\sigma_9$	Total
0.1657	0.1744	0.1782	0.2281	0.1717	0.1802	0.2298	0.1736	0.1716	1.6733

Normalization of standard deviation values is carried out with Equation (7) and the results are given in Table 11.

Table 11. Normalized Standard Deviation Values

$w_1^{\sigma}$	$w_2^{\sigma}$	$w_3^{\sigma}$	$w_4^{\sigma}$	$w_5^{\sigma}$	$w_6^{\sigma}$	$w_7^{\sigma}$	$w_8^{\sigma}$	$w_9^{\sigma}$	Total
0.0990	0.1043	0.1065	0.1364	0.1026	0.1077	0.1373	0.1037	0.1025	1.0000

Adjusted weight values are calculated by Equation (8) and the calculated values are summarized in Table 12.

Table 12. Adjusted Weight Values

$\tilde{w}_1$	$\tilde{w}_2$	$\tilde{w}_3$	$\tilde{w}_4$	$\tilde{w}_5$	$\tilde{w}_6$	$\tilde{w}_7$	$\tilde{w}_8$	$\tilde{w}_9$	Toplam
0.1060	0.1094	0.1107	0.1252	0.1093	0.1119	0.1092	0.1099	0.1085	1.0000

CCM, UCM and ICM utility functions obtained by using Equations (9), (10) and (11), respectively are given in Table 13.

Table 13. CCM, UCM and ICM Values

	CCM	Descending Order	UCM	Ascending Order	ICM	Descending Order
ALT1	0.1837	20	0.1079	20	0.5742	19
ALT2	0.3381	4	0.1068	18	0.6247	6
ALT3	0.2538	11	0.1066	16	0.5983	12
ALT4	0.2129	16	0.1069	19	0.5728	20
ALT5	0.3242	6	0.0997	4	0.6291	5
ALT6	0.3750	2	0.0998	5	0.6519	3
ALT7	0.1271	24	0.1110	24	0.5563	23
ALT8	0.2260	15	0.1021	7	0.5903	15
ALT9	0.1268	25	0.1099	23	0.5446	24
ALT10	0.2056	18	0.1061	15	0.5770	17
ALT11	0.1624	21	0.1086	21	0.5572	22
ALT12	0.1363	23	0.1148	25	0.5446	25
ALT13	0.2465	12	0.1021	8	0.5955	14
ALT14	0.3272	5	0.1037	10	0.6220	8
ALT15	0.2057	17	0.1050	12	0.5889	16
ALT16	0.9583	1	0.0417	1	0.9871	1
ALT17	0.3596	3	0.0958	2	0.6532	2
ALT18	0.3070	8	0.1060	14	0.6132	9
ALT19	0.0899	26	0.1252	26	0.5269	26
ALT20	0.2400	13	0.1034	9	0.5960	13
ALT21	0.3132	7	0.1046	11	0.6245	7
ALT22	0.1578	22	0.1092	22	0.5719	21
ALT23	0.2321	14	0.1009	6	0.6059	11
ALT24	0.1933	19	0.1052	13	0.5760	18
ALT25	0.2775	10	0.1067	17	0.6076	10
ALT26	0.2925	9	0.0959	3	0.6312	4

The performance scores of the alternatives are obtained by integration of utility functions with Equation (12) which is based on Euclidean distance. The values for  $\varphi$ ,  $w_1$ ,  $w_2$  and  $w_3$  are deemed appropriate by the experts to consider as  $\varphi = 0.5$ ,  $w_1 = 0.6$ ,  $w_2 = 0.1$  and  $w_3 = 0.3$ . The calculated performance values and the ranking of the alternatives are given in Table 14.

Table 14. Performance Ranking of RDA's for Calls towards Non-Profit Organizations

Regional Development Agencies	DN	Descending Order
Ahiler Development Agency	0.245	20
Ankara Development Agency	0.617	4
West Mediterranean Development Agency	0.447	11
Western Black Sea Development Agency	0.304	17
Bursa Eskişehir Bilecik Development Agency	0.614	5
Çukurova Development Agency	0.704	2
Tigris Development Agency	0.149	24
Eastern Mediterranean Development Agency	0.373	15
Eastern Anatolia Development Agency	0.136	25
Eastern Black Sea Development Agency	0.298	18
Eastern Marmara Development Agency	0.206	21
Euphrates Development Agency	0.152	23
Southern Aegean Development Agency	0.428	12
Southern Marmara Development Agency	0.595	6
Silk Road Development Agency	0.326	16
İstanbul Development Agency	0.976	1
İzmir Development Agency	0.699	3
Karacadağ Development Agency	0.531	9
North Anatolian Development Agency	0.094	26
Northeast Development Agency	0.417	14
Mevlana Development Agency	0.570	7
Central Anatolia Development Agency	0.198	22
Middle Black Sea Development Agency	0.422	13
Serhat Development Agency	0.279	19
Thrace Development Agency	0.481	10
Zafer Development Agency	0.575	8

The data in Table 14 reveal that Istanbul Development Agency is the most successful institution in terms of Financial Support Programs implemented by Regional Development Agencies for non-profit organizations. Within the scope of this evaluation, it is also revealed that the institution with the lowest performance is the North Anatolian Development Agency.

When all the steps of the DNMA method are re-applied to the data regarding the Financial Support Programs applied by the Regional Development Agencies to the profit organizations, the performance values have emerged as indicated in Table 15.

Table 15. Performance Ranking of RDA's for Calls Towards Profit Organizations

Regional Development Agencies	DN	Descending Order
Ahiler Development Agency	0.391	18
Ankara Development Agency	0.728	4
West Mediterranean Development Agency	0.565	10
Western Black Sea Development Agency	0.241	24
Bursa Eskişehir Bilecik Development Agency	0.401	17
Çukurova Development Agency	0.939	1
Tigris Development Agency	0.210	25
Eastern Mediterranean Development Agency	0.705	5
Eastern Anatolia Development Agency	0.458	16
Eastern Black Sea Development Agency	0.288	23
Eastern Marmara Development Agency	0.664	6
Euphrates Development Agency	0.620	8
Southern Aegean Development Agency	0.522	13
Southern Marmara Development Agency	0.313	21
Silk Road Development Agency	0.366	19
İstanbul Development Agency	0.540	12
İzmir Development Agency	0.664	7
Karacadağ Development Agency	0.785	3
North Anatolian Development Agency	0.288	22
Northeast Development Agency	0.557	11
Mevlâna Development Agency	0.796	2
Central Anatolia Development Agency	0.602	9
Middle Black Sea Development Agency	0.347	20
Serhat Development Agency	0.467	15
Thrace Development Agency	0.199	26
Zafer Development Agency	0.487	14

The data in Table 15 unfold that Çukurova Development Agency is the most successful institution in terms of Financial Support Programs implemented for profit organizations by Regional Development Agencies. It is also revealed that Thrace Development Agency has the lowest performance within the scope of the same evaluation.

## 5. Sensitivity Analysis

Sensitivity analysis in this study is applied by checking the impact of the rank reversal matrix.

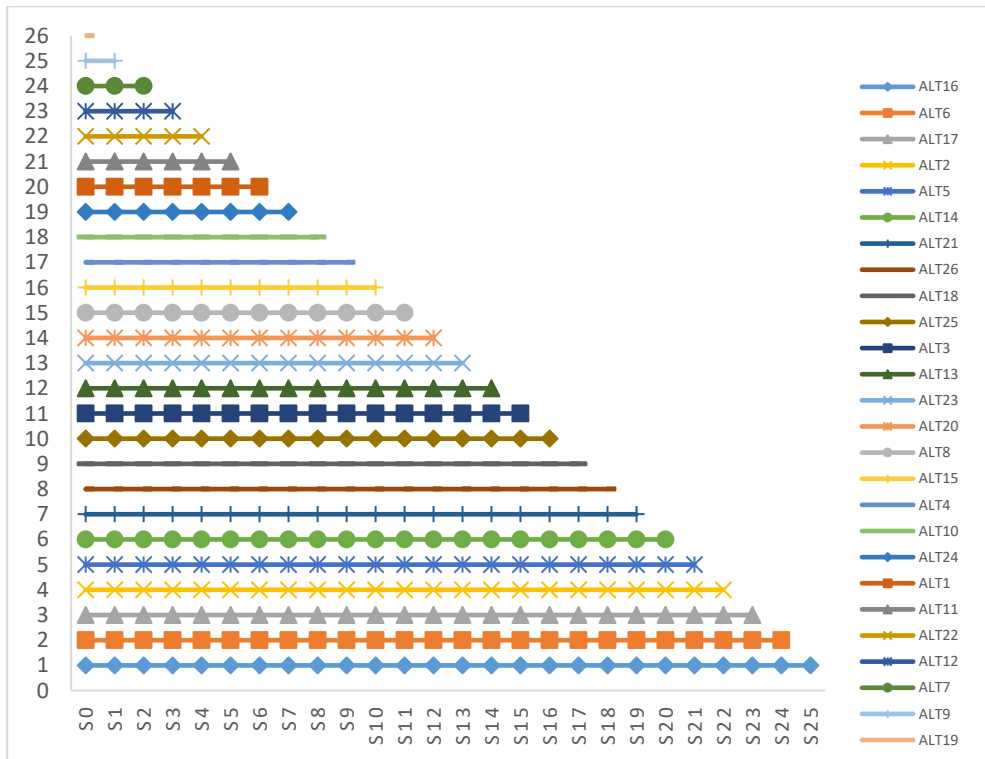
### 5.1. Effect of Rank Reversal Matrix

One of the options to observe the persistence of MCDM methods is to include new alternatives to the initial cluster or to remove weak alternatives from the cluster. In such cases, it is counted that the MCDM method will not depict a significant change in terms of the order of alternatives. This phenomenon is defined as the popular rank reversal problem, and much attention has been paid to it in the literature (Mukhametzyanov and Pamucar, 2018; Pamucar et. al., 2017).

For this purpose, a sensitivity analysis is implemented to measure the resistance of the model against the rank reversal problem. Within the scope of this test, 25 scenarios are created to simulate the change in financial support program data offered to non-profit

organizations by Regional Development Agencies. As an accepted principle, 25 scenarios should be built (total number of Regional Development Agencies minus one). Following the first trial where the DNMA method is applied, the Regional Development Agencies are ordered according to the results as shown in the S0 scenario (original ranking). In the following scenario (S1), the least ranked alternative is disposed of. Thereafter, the remaining 24 alternatives are sorted again. Thus, 25 scenarios (S1–S25) are built, thereby eliminating the alternative with the least performance from the cluster in each next scenario. The final ranking obtained from different scenarios is indicated in Figure 3.

Figure 3. Results of Ranks Reversal Analysis for FSPs towards Non-Profit Organizations



According to Figure 3, it can be easily observed that the DNMA model provides consistent results and the model for FSPs towards non-profit organizations has a strong resistance to the rank reversal problem. The same process steps were applied to the FSPs offered by Regional Development Agencies for-profit organizations, and the results are given in Figure 4.

Figure 4. Results of Ranks Reversal Analysis for FSPs Towards Profit Organizations

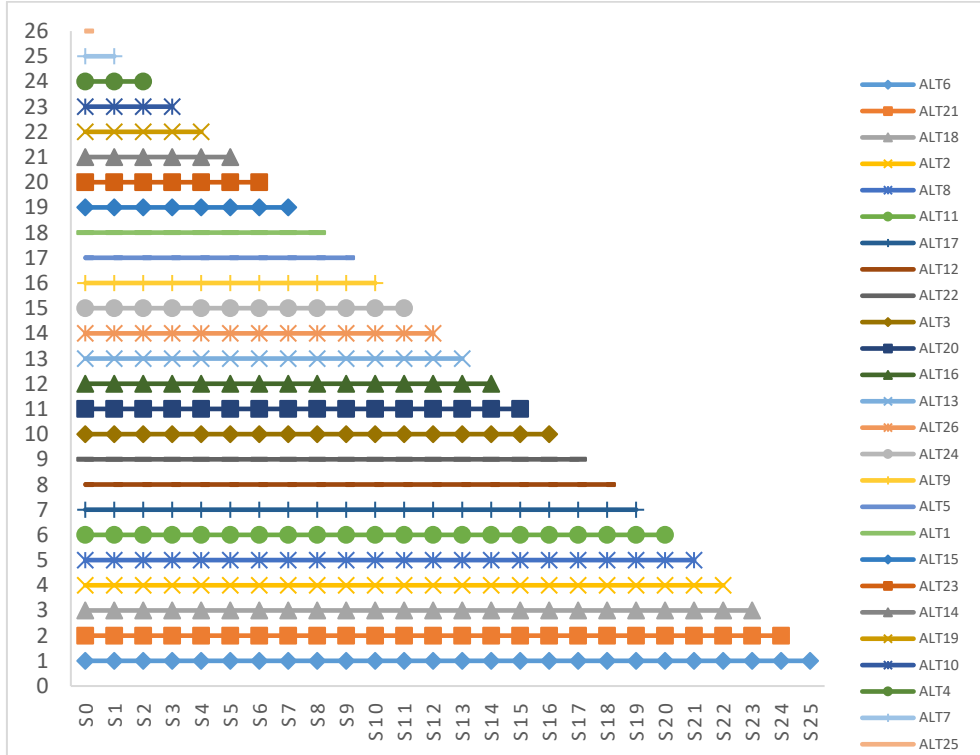


Figure 4 indicates that the DNMA model provides consistent results and the model for FSPs towards profit organizations has a strong resistance to rank reversal problems as well.

### 6. Results and Discussion

As a requirement of the pre-accession process to the European Union, 26 Regional Development Agencies were established in Türkiye beginning in the year 2006. Regional Development Agencies, whose job descriptions are extremely wide, announce periodic calls for financial support programs according to the priorities and requirements of the region they are responsible for.

In this study, the performances of 26 Regional Development Agencies operating in Türkiye were evaluated in terms of financial support programs they have implemented since the date of their foundation. Because of the calls for financial support programs applied separately for-profit and non-profit organizations, two different evaluation processes were carried out.

The LMAW method is used in the weighting phase of 9 criteria, and the DNMA method is applied for the performance evaluation of 26 alternatives within the scope of the study.

It has been determined that the most important criterion in terms of financial support program calls for non-profit organizations is the "Number of Successfully Completed Projects". However, the criteria of "Total Call Budget" for calls aiming profit organizations is determined as the prominent one.

When these evaluations are examined carefully, it is eliciting that non-profit organizations attach more importance to the completion of projects. Considering that successfully completion of projects is an important indicator of performance evaluation for public institutions, it becomes quite meaningful for managers to especially emphasize the criterion. However, it is revealed that private sector representatives focus on the total budget criterion to finance their investments. This approach also reveals important findings in terms of monitoring the difference between the perspectives of the private sector and public institutions.

In the performance order made for 26 Regional Development Agencies; Istanbul Development Agency, Çukurova Development Agency and İzmir Development Agency are in the top three in terms of financial support programs announced for non-profit organizations. If the data is examined carefully, it can be inferred that Istanbul Development Agency is in a superior position compared to the closest alternative in terms of the Number of Successfully Completed Projects for Non-Profit Organizations criteria. Considering that İstanbul hosts 18.7% of Türkiye's population, it should be taken into account that the number of non-profit institutions providing services to all segments of society should be higher. This situation can be evaluated as a reflection of the financial requirement for public services. It is thought that the high performance of Çukurova and İzmir Development Agencies is due to the fact that they started their activities as the first pilot scheme in Türkiye in 2006, while the remaining ones were established in 2008 and 2009. Therefore, Çukurova and İzmir Development Agencies had more opportunities to implement financial support programs. According to the evaluation made for financial support programs announced towards non-profit organizations, North Anatolian Development Agency showed the lowest performance. When the criteria for financial support programs applied for non-profit institutions are examined, it can be deducted that it performs quite poorly compared to other Regional Development Agencies. The fact that the population of the region, which consists of Kastamonu, Çankırı and Sinop provinces, is less than 1% compared to the population of Türkiye may indicate that public resources are less required and less used. This situation can be considered a topic that should be questioned by the Ministry.

In terms of the financial support program implemented by for-profit organizations; Çukurova Development Agency, Mevlana Development Agency and Karacadağ Development Agency share the best performance, respectively. In addition to being one of the first two development agencies to be established, the promising position of Adana and Mersin in the industry and agriculture sectors and the fact that Mersin is a Mediterranean port city is thought to have affected Çukurova Development Agency to achieve high performance in this sense. Similarly, it is observed that the number of successfully completed projects within the scope of financial support programs for the developing industry and agriculture sectors in Konya province is quite high, which contributes to the performance of the Mevlana Development Agency. According to the evaluation made for financial support programs announced towards profit organizations, it is deducted that Thrace Development Agency has the worst performance in this regard. Kırklareli and Tekirdağ are the provinces where the industrial sector is developed. Despite this fact, the low performance of this region in terms of financial support is a situation that should be questioned by the Ministry.

In this study, Regional Development Agencies were examined in terms of the financial support programs they implemented. In addition to these supports, their performance can be



also evaluated in terms of supports such as Guided Projects, Technical Support and Funding Support mechanisms.

This study on the financial support performance of the Regional Development Agencies operating in Türkiye can be applied to other grant-providing institutions such as the Small and Medium Enterprises Development Organization (KOSGEB) and the Agriculture and Rural Development Support Institution (TKDK) in the future. It is also a viable method in terms of carrying out similar studies for the General Directorate of Incentive Implementation and Foreign Capital, which is the centre of incentive applications for investments in Türkiye. In addition, this study can be a reference for grant or incentive provider institutions operating around the world. This method can be used in the performance evaluation of funding institutions, as well as a tool that contributes to inter-institutional competition.

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# Leader-Member Exchange and Job Performance in Municipalities: Mediating Effect of Organizational Commitment<sup>1</sup>

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Leader-Member Exchange and Job Performance in Municipalities: Mediating Effect of Organizational Commitment	Belediyelerde Lider-Üye Etkileşimi ve İş Performansı: Örgütsel Bağlılığın Aracı Etkisi
<b>Abstract</b> In this study, the effect of Leader Member Exchange (LMX) behaviors on organizational commitment and job performance in municipalities is discussed. Since the administrations of the municipalities are elected, the administration is not permanent. In such cases, the effect of leader-member exchange on organizational commitment and job performance is not available to the best of our knowledge. For this purpose, the questionnaires collected from the employees of a municipality were analyzed by quantitative methods. As a result, it has been found that Leader-Member Exchange (LMX) has a positive effect on both organizational performance and job performance, and that organizational commitment mediates the effect of LMX on job performance.	<b>Öz</b> Bu çalışmada belediyelerde lider üye etkileşimi davranışlarının örgütsel bağlılık ve iş performansı üzerine etkisi tartışılmıştır. Belediyelerin yönetimlerinin seçime gelmesi nedeni ile yönetim sürekli değildir. Bu tür durumlarda lider üye etkileşiminin örgütsel bağlılığa etkisi ve iş performansına etkisinin ne olacağı literatürde yoktur. Bu amaçla bir belediye kurumunda çalışanlardan toplanan anketler niceliksel yöntemlerle analiz edilmiştir. Sonuçta Lider Üye Etkileşim'in (LÜE) hem örgütsel performansı hem de iş performansını olumlu etkilediği aynı zamanda örgütsel bağlılığın LMX ile iş performansı arasında aracı etkisi olduğu bulunmuştur.
<b>Keywords:</b> Lead Member Interaction, Job Performance, Organizational Commitment, Municipalities	<b>Anahtar Kelimeler:</b> Lider Üye Etkileşimi, İş Performansı, Örgütsel Bağlılık, Belediyeler
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<b>Yazarların Makaleye Olan Katkıları</b>	Yazar 1'in makaleye katkısı %40, Yazar 2'nin makaleye katkısı %40 ve Yazar 3'ün makaleye katkısı %20'dir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

Leadership is one of the most researched topics in organizational behavior studies. Leadership studies are of great importance because leadership is pointed out as a prominent antecedent of organizational performance (Martin et al., 2010). Early studies on leadership generally accepted that the leader had similar relationships with group members and adopted the same behavior. Being one of the modern leadership theories, Leader-Member Exchange (LMX) approach suggests that successful leaders evaluate each group member as independent and different individuals, and develop relationships of different qualities. LMX theory is defined as “an interpersonal, unstructured, and informal exchange process between leader and follower in a workplace setting”. Leaders begin to establish tight relationships with some followers, resulting in formation of an in-group and an out-group among followers (Gottfredson et al., 2020). Followers in the in-group increase their performance. At the same time, their commitment to the organization increases with LMX.

Similar to leadership studies, organizational commitment is one of the major organizational problems that attracts great attention in the field of organizational behavior and that managers are trying to solve. It is known that physical and psychological well-being of employees is a major determinant of organizational commitment (Meyer, 2009) and LMX might be considered to increase employee morale in the workplace. Considering that organizational commitment of employees also affects their job performance, the importance of the relationship between organizational commitment and LMX will be comprehended more easily. Therefore, LMX is important not only for employees but also for organizational outcomes (Eisenberger et al., 2010).

The literature suggests that organizations should have employees committed to the organization to survive. Committed employees and their levels of organizational commitment have a crucial effect on job performance (Ahmad et al., 2010; Riketta, 2002; Meyer et al., 1989) and this will ensure the survival of an organization. Thus, understanding organizational commitment with its antecedents might provide some theoretical and practical insights. Whereas the literature is ample with research studying the leadership – organizational commitment relationship, limited research has been done to understand how LMX affects organizational commitment. Besides, although the effect of LMX on job performance is known, there are no studies investigating how organizational commitment affects this relationship.

Although a number of studies investigate the process of leadership, job performance, and organizational commitment, more research is required to analyze the relationship between these three variables. In addition, this study has two different original aspects distinguishing it from other studies. First, the study was carried out specifically in a municipality. Studies in the literature predominantly focused on private sector organizations. There is a need for studies describing how LMX works in municipalities because of its unique characteristics. Despite the studies carried out in some public institutions (like Buch et al., 2014), we did not come across with any research carried out in municipalities. Another important contribution of this study is that organizational commitment is considered as a variable mediating the effect of LMX on job performance. Mayors are elected by local residents, and division managers are appointed by the mayor. In Türkiye, where the research was conducted, local elections are repeated once every 5 years. If a new mayor is elected, that generally means a change of all management teams. This situation necessitates a constant managerial change in municipal

organizations since each new administration comes with new managers. For this reason, an examination of municipalities, where developing LMX is a very challenging work, might provide original contributions to the organizational behaviour field. Moreover, it is meaningful to comprehend the relationship between organizational commitment and job performance in this context, which is two of the most fundamental problems of managers in organizational life. In this study, we explain that LMX affects job performance and organizational commitment in organizations with relative short-term management, and organizational commitment also has a mediating effect in this relationship.

## **2. Conceptual framework and hypothesis development**

In the nearly 50-year history of LMX theory, researchers have benefited from different theories while creating the LMX theoretical background. LMX was quoted as the vertical dyad linkage theory in the early 70s. The core assumption of LMX was based on the role theory, which postulated that employee roles evolve through unofficial procedures and that employees' immediate supervisors play a crucial role in aiding employees in becoming more clear about their tasks. LMX was distinguished from other theories because LMX suggests that leaders differentiate their styles through testing and negotiating with their subordinates, as well as through followers' willingness and capacity to exchange with the leader, and leaders' availability and capacity to exchange with followers. Looking at later developments of the theory, we can point out that the LMX was initially largely defined as a binary structure, as it was largely based on the concepts of mutual exchange. However, with later studies, this perspective changed and the theory was connected with the theory of social exchange (Gottfredson et al, 2020). For the first time, LMX structure and social exchange theory were merged in one article by Dienesch and Liden (1986). LMX became linked with social exchange and has widely been used together.

Unlike other leadership theories, LMX theory is based on relationship in that it assumes different relationship types are developed between leaders and their subordinates. Researchers argue that the leader - member relationship develops around the dimensions of respect, trust, liking, loyalty, support, closeness, honesty, and openness (Graen and Scandura, 1987). Distribution of resources also forms the basis of this relationship. Leaders can use the resources they hold in favor of the member. On the other hand, members can increase their task performance to obtain resource allocation from leaders (Graen and Cashman, 1975). Studies on the theory initially focused heavily on research into what kind of resources the members obtained from the leaders. However, later studies have also been conducted to examine what kind of resources the leader acquires in resource allocation (Wilson et al., 2010).

LMX theory suggests that there are two different groups, in-group and out-group, which are established according to the quality of the interaction between leaders and followers. The leader treats the followers of the ingroup with more sincerity, friendliness, and respect. Members in this group gain the leader's trust because they are in a closer relationship. At the same time, the leader asks these members to do the tasks they deem important. They have more responsibilities and are rewarded more. The leader's relationship with in-group members develops on loyalty. In contrast, the leader communicates within the framework of formal business rules, as s/he interacts less with the out-group members. These members act within the framework of their current duties. At the same time, these members are rewarded less than the others (Deluga and Perry, 1994). It is possible to define the leader - in-group

member relationship as high-quality interaction, and the relationships with the out-group members as low-quality communication. The interaction between the leader and the groups is in a constantly changing structure. Groups or their members may change in the process (Phillips and Bedeian, 1994: 990).

The first stage of the process between the leader and the member is the first interaction stage. This stage is the first contact between the leader and the member in their current positions, and their interaction levels and expectations are low. Both parties act in the maximization of their own interests. The initial interaction, that is, the first contact, is of great importance as it will determine the future of the intercourse between the leader and the member. Since the first social interaction takes place at this stage, the trust between the people is very low. Both the leader and the member bring their physical characteristics, personalities, professional and social skills and abilities, experiences, attitudes and behaviors and expectations with them to the first interaction phase. The quality of the initial interaction, as well as the personal characteristics and equipment possessed, will determine how the leader- member interaction process will continue. The fact that the leader and the member have similar age, education, gender and ethnicity helps to establish better relations in the first stage of interaction and increases the possibility of the member to be included in the in-group.

The leader, who makes the first interaction with the member, is the stage where s/he evaluates the member from different perspectives by assigning some duties and responsibilities in the second phase. The leader has little information about the member's performance. The success of performing the tasks given within the framework of the position he/she wants to evaluate will determine whether the member will be in the in-group or out-group. This is the phase where the member is tested. In this phase where interaction and sharing are limited, the parties mutually evaluate each other and start getting to know each other. This evaluation helps both parties decide how to treat each other. As the recognition process progresses, the trust level between the leader and the member begins to increase. In the third phase of the interaction process, mutual attitudes and behaviors of both the leader and the member, and the answers given by the leader to the member as a result of this interaction emerge. At this stage, the expectations of each party start developing as a result of the interaction beyond the standard job descriptions. If the member has positive feelings and thoughts towards his/her leader, he can take actions outside his field of duty to impress him. On the other hand, either leader or member may not respond positively to the other party's effort to engage at a high level, and the level of interaction may remain low as a result. The important point for the continuity of the interaction is the compatibility of the behavior and attitudes of the leader, the member and the performance shown. These will determine which group the member will belong to. In the fourth and the last phase of the interaction process, the leader and the member get to know each other well as a result of their interaction. Through the course of this process, a shared past has been built, and as a result, it has started to behave with a common denominator. The goals and expectations of the two parties become interconnected. At this stage, the quality of the interaction between the leader and the member is determined, and as a result, the degree of the transaction between the leader and the member become different. High-quality interaction increases trust, respect, loyalty and performance. At the same time, the relationship between the two parties transforms companionship. The leader positions this member in his immediate environment,

that is, in the inner group, and assigns him the duties he deems important, rewards him, and gives priority to him in terms of promotion. In addition, attitudes and behaviors are constantly repeated, that is, routinized, which increases the degree of high-quality interaction (Dienesch and Liden, 1986).

There are many studies on the predecessors of LMX in the literature. The findings on LMX's antecedents can be grouped into four categories. These groups are classified as "subordinate characteristics, leader characteristics, interactional variables, and contextual variables" (Liden et al., 1997). Moreover, studies can be defined as individual level, dyad level, and organizational level according to the analysis levels. Although they predominate in this subject, investigations defined at the organizational level are mostly studies on the impact of organizational outputs. Studies are mostly on the positive effects of leadership. Research on individual-level outputs study employee job satisfaction, job-related well-being, low stress, increased organizational commitment, innovative behaviors, increased time and effort dedicated to the job, positive self-efficacy, employee empowerment, and decreased turnover intention with LMX. At the dual level, it is about workplace friendships, perceived leader support, and perceived leader empowerment and counseling behaviors. At the organizational level, it is associated with concepts such as perceived justice, job breadth, reduced actual turnover, and perceived transformational leadership (Martin et al., 2010).

#### *LMX, Organizational Commitment, and Job Performance*

An individual's bond with the organization and willingness to remain a member are both examples of organizational commitment. To put it another way, organizational commitment is described as the belief of a person in the organisational values and goals, willingness to work toward those goals, and desire to continue belonging to the organization (Hunt and Morgan, 1994). According to previous studies, people who have a high level of organizational commitment are more motivated to carry out their responsibilities and exert a lot more effort. Those with higher levels of organizational commitment allegedly work there longer and have good interactions with the company. In addition, some studies have shown that higher organizational commitment leads to lower levels of intention to leave (Oberholster & Taylor, 1999). Another important concept for organizations is the job performance of individuals. Job performance is the sum of the individual's efforts in a given time period. High level of employee job performance increases productivity, quality and organizational effectiveness. The survival of the organizations and the achievement of the determined goals and objectives depend on high employee performance. The important point here is related to the benefit that employees get from the organization. The literature has verified the positive and significant relationship between LMX and performance (Vecchio and Gobdel, 1984; Graen and Uhl-Bien, 1995; Gerstner and Day 1997).

An important variable of study is job performance. Katz & Kahn (1978) call job performance as the very essence of a social system in an organization (Giri and Kumar, 2010). Job performance is the ability of a person to do his/her job in an efficient and effective way. There are many factors that affect the improvement of job performance in organizations. Organizational commitment and leadership behaviors are among the main factors affecting job performance (Al-Malki and Juan, 2018). The behavioral aspect refers to what people do while at work, the action itself. Based on definition, it is implied that only actions that can be scaled are considered performance activities. The performance concept is explicitly limited to behaviors which are goal-oriented, i.e. behaviors which are the result of the organization's



hiring the employee in order for them to perform well. A person's behavior is reflected in the outcome aspect (Sonnentag et al, 2008).

The organizational commitment framework suggested by Allen and Meyer consists of three aspects: "affective, continuance and normative commitment" (Allen and Meyer, 1990). The common feature of all three dimensions of organizational commitment is that they emerge as a psychological state. Although they emerged psychologically, their psychological structures are different from each other in three dimensions. In addition, according to the model, individuals in the organization can experience these three dimensions at different levels.

Affective commitment is the situation in which the goals, values and beliefs of the individual are compatible, similar or identified with the goals, values and beliefs of the organization. Emotional commitment is mutually compatible. Therefore, an emotional bond will be formed between the individual and the organization, and at the same time, the individual will embrace the organization. Individuals with emotional attachment are happy in their environment and feel that they belong there. There is a strong bond between the organization and the individual. Affective commitment is established on the identification of the individual with the organization, participation and loyalty. Since the individual sees himself as a part of the organization, it has an important place in his life. Therefore, according to affective commitment, individuals stay in the organization not because they feel obliged to, but because they desire it. They are in great effort and desire for the organization's goals and objectives and interests. Therefore, it is the type of commitment that leaders or managers want individuals to have. Among the three dimensions, it is stated that the most effective commitment dimension for an individual's performance is emotional commitment. Shaw et al. (2003) stated that there is a direct relationship between emotional commitment and performance, and that individuals with emotional commitment outperform other employees. Continuance commitment refers to the state of knowing the cost that the individual will face if he leaves the organization. In other words, it is the state of being aware of the consequences and maintaining membership in case of leaving the organization (Meyer Allen &, 1997). The commitment in question here is not an emotional one, but rather an instrumental one. The individual calculates the scenarios and consequences that he will encounter in case of leaving the organization. The reason for the individual's continuing membership is that staying in the organization will provide more benefits than leaving it.

Current study, thus, examines the effect of LMX on job performance and organizational commitment in municipalities. Appointment of administrators for a certain period of time in municipalities is a problem for the sustainability of the administration.

Municipalities in Türkiye carry out important functions in meeting local needs and occupy a predominant place in the local government system of the country. There are two types of municipalities in Turkey. The first of these is the municipalities operating in the districts, and the second is the metropolitan municipalities that operate only in big cities and that have a different status. In this study, the municipalities in the first group were examined. There are three organs of municipal government in Turkey. The first two are the mayor the municipal council, which are directly elected by the people within the boundaries of the municipality, and third is the municipal committee, which consists of the chief executives of the municipal service units and the members elected by the municipal council. The mayor is the executive body of the municipality, and the municipal council and the municipal committee are the

decision-making bodies. The mayor is the head and representative of the municipal government, as well as the executive body. The mayor is elected by the majority of the people for five years.

The mayor, as the highest supervisor of the municipal organization, manages the municipality in accordance with the strategic plan, creates the institutional strategies of the municipal administration, implements, monitors, and evaluates the budget, and prepares performance criteria for municipal activities. Also, s/he presents the relevant reports to the assembly, chairs the assembly and the committee, manages the movable and immovable properties of the municipality, and tracks and collects the revenues and receivables of the municipality. S/he implements the decisions of the council and the committee, implements the budget, appoints the municipality personnel, inspects the municipality and its subsidiaries and businesses, and has a mandate and authority (İnanç and Ünal, 2007). This situation, which is specific to the organizational forms of municipalities, brings about periodic changes in managers and personnel.

The organizational commitment and job performance of the employees will be affected by the periodic management. Based on previous studies, in this study, we first claim that LMX positively affects organizational commitment (OC) and job performance (JP) (H1 and H3). Again, grounding on the literature, we claim that organizational commitment in municipalities will positively affect job performance (H2). We also argue that increased organizational commitment behavior with LMX practices mediates the relationship between LMX and job performance (H4). With these hypothesis these hypotheses, we aim to emphasize once again the importance of LMX behaviors of managers in municipalities in short-term administrations.

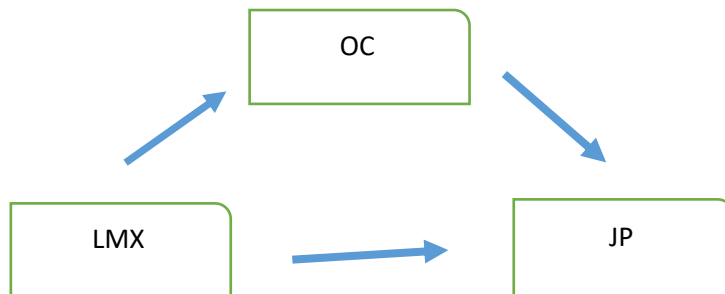
H1: LMX positively influences organizational commitment.

H2: Organizational commitment positively influences job performance.

H3: LMX positively influences job performance.

H4: Organizational commitment mediates the relationship between leader member exchange and job performance

Figure 1: Research model and hypothesis



### 3. Methodology

#### 3.1. Participants and procedures

Municipal employees in Türkiye were the target participants of the study. 228 of the 1,200 employees who volunteered to take part in the study returned the surveys in 2022. The data were collected in 2022. Valid surveys were decreased to 221 through data cleaning. Detailed information about the participants is provided in Table 1.

Table 1: Sample Characteristics

Characteristics	Sample (n=221)	Characteristics	Sample (n=221)
<i>Gender</i>			
Female	80 (%36.2)	<i>Total duration of work</i>	
Male	141 (%63.8)	Less than 1 year	10 (%4.5)
Missing	0	Between 1-5 years	39 (%17.6)
<i>Age</i>			
18-24	18 (%8.1)	Between 6-10 years	75 (%33.9)
25-34	71 (%32.1)	Between 11-15 years	31 (%14)
35-44	56 (%25.3)	Between 16-20 years	17 (%7.7)
45-54	70 (%31.7)	More than 20 years	24 (%10.9)
55 +	6 (%2.7)	Missing	25 (%11.8)
Missing	0	<i>Total duration of current work</i>	
<i>Marital Status</i>			
Married	144 (%65.2)	Less than 1 year	14 (%6.3)
Single	76 (%34.4)	Between 1-5 years	50 (%22.6)
Missing	1 (%0.5)	Between 6-10 years	84 (%38)
<i>Education Level</i>			
Elementary	8 (%3.6)	Between 11-15 years	12 (%5.4)
Mid-school	29 (%13.1)	Between 16-20 years	19 (%8.6)
High School	78 (%35.3)	More than 20 years	16 (%7.2)
Two-year degree	33 (%14.9)	Missing	26 (%11.8)
Undergraduate	63 (%28.5)		
Graduate	9 (%4.1)		
Missing	1 (%0.5)		

#### 3.2. Measurements

Leader Member Exchange Scale (Liden and Maslyn, 1998), Organizational Commitment Scale (Allen and Meyer, 1990), Job Performance Scale (Kirkman and Rosen, 1999) and a demographic information form were administered to the participants by researchers. The researcher created a demographic information form that was used to gather details about participants, which composed of questions about participants' age, gender, marital status, total duration of work, and total duration of current work in a public institution.

LMX Scale has four subscales namely "affect, loyalty, contribution, and professional respect". Affect has 3 items such as "I like my supervisor very much as a person.", loyalty has 3 items such as "My supervisor would come to my defense if I were "attacked" by others", contribution has 3 items such as "I do work for my supervisor that goes beyond what is specified in my job description", and professional respect has 3 items such as "I am impressed with my supervisor's knowledge of his/ her job". Each subscale is rated on a 1 (strongly

disagree) to 5 (strongly agree) scale and scored separately. Internal reliabilities of the subscales were .89, .77, .85, .88 respectively. Internal reliability of overall scale was .91.

To measure organizational commitment, Organizational Commitment Scale (Allen and Meyer, 1990) which is adapted to Turkish by Çöl (2008), was used. The scale has three subscales namely “affective commitment, normative commitment, and continuance commitment”. Affective commitment has 8 items such as “I would be very happy to spend the rest of my career with this organization”, normative commitment has 8 items such as “Too much in my life would be disrupted if I decided I wanted to leave my organization now”, and continuance commitment has 8 items such as “I was taught to believe in the value of remaining loyal to one organization”. Each subscale was rated on a 1 (strongly disagree) to 5 (strongly agree) scale. Two affective commitment items and one normative commitment item were eliminated from the scale since they loaded onto more than one factor. Following that, each subscale is scored separately. The subscales’ internal reliabilities were, .90, .87, .92 respectively, and the entire scale’s internal reliability was .94.

Job Performance Scale was used to measure job performance. The scale consists of 5 items, one of which is “I complete my tasks on time”. The items were assessed by the respondents on a scale of 1 (strongly disagree) to 5 (strongly agree). Internal reliability of the scale was .86.

### **3.3. Data Analysis**

SPSS was used to examine respondents’ demographic characteristics, descriptive statistics of the construct variables, to make preliminary outlier and multicollinearity checks, to perform exploratory factor analysis (EFA) to test the factor structure and to make reliability analysis. Confirmatory factor analysis (CFA) in Smart PLS was used to examine the measurement model in order to determine the causal relationship between items and constructs. PLS-SEM was used to test the hypotheses in SmartPLS (Ringle et al., 2015).

### **3.4. Results**

#### **Measurement Model**

The data were normally distributed as the kurtosis and skewness values were below 3.00 (Kline, 2011). VIF values indicating multicollinearity in the data ranged between 1.28 and 4.96 which is below the suggested value of 10 (Hair et al., 2018). To ensure the factor structures, EFA was performed and for all items, except 2 items in affective commitment and 1 item in normative commitment sub-dimensions, factor loadings ranged from .42 to .89. Then, measurement model was performed using Smart PLS to test the construct validity of the measurement scale. Item loadings, composite reliability (CR), and average extracted variance (AVE) were used to evaluate the measurement model for convergent validity. As presented in Table 2, all factor loadings were higher than the suggested value of 0.7, CR values were higher than 0.7, and AVE was higher than 0.5 for all latent constructs (Hair et al., 2018). In addition, all dimensions and sub-dimensions had Cronbach’s  $\alpha$  values higher than .70 which is a sign to the satisfactory internal reliability (Pesämaa et al., 2021).

Table 2: CFA Results, AVE and Reliability

Constructs	Sub-constructs	Indicators	Loadings (t-values)	CR	$\alpha$	AVE				
LMX	Affect	A1	.91 (71.43)	.89	.89	.81				
		A2	.89 (42.95)							
		A3	.90 (54.62)							
	Loyalty	L1	.81 (23.24)				.79	.77	.69	
		L2	.87 (57.59)							
		L3	.80 (24.94)							
	Contribution	C1	.87 (46.06)				.85	.85	.77	
		C2	.90 (56.00)							
		C3	.85 (37.04)							
	Professional Respect	PR1	.90 (49.61)				.85	.88	.81	
		PR2	.89 (27.86)							
		PR3	.90 (58.60)							
	OC	Affective Commitment	AC1				.56 (10.33)	.92	.90	.68
			AC2				.77 (22.46)			
			AC3				.84 (29.86)			
AC4			.90 (62.99)							
AC5			.90 (60.64)							
AC6			.89 (60.16)							
Continuance Commitment		CC1	.74 (16.75)	.92	.92	.64				
		CC2	.78 (26.02)							
		CC3	.85 (44.66)							
		CC4	.83 (34.70)							
		CC5	.80 (27.52)							
		CC6	.83 (32.96)							
		CC7	.785(24.11)							
Normative Commitment		NC1	.77 (24.70)	.89	.87	.58				
		NC2	.48 (6.71)							
	NC3	.66 (13.45)								
	NC4	.86 (39.58)								
	NC5	.85 (38.61)								
	NC6	.77 (17.28)								
	NC7	.82 (28.85)								
Job Performance	JP1	.78 (23.21)	.88	.86	.63					
	JP2	.72 (16.62)								
	JP3	.85 (43.25)								
	JP4	.84 (28.62)								
	JP5	.80 (22.64)								
JP		JP5	.75 (18.57)							

The discriminant validity of the constructs was assessed using the Fornell and Larcker (1981) criterion. As seen in Table 3, each construct's square root of AVE in the diagonal of the matrix is larger than the related correlation (off-diagonal) in the corresponding rows and columns, demonstrating that a sufficient level of discriminant validity has been attained. The

heterotrait monotrait (HTMT) ratio of correlations is another technique for evaluating discriminant validity (Henseler et al., 2015). The more conservative HTMT criterion is thought to be a more accurate method of evaluating discriminant validity. The association between the LMX and the organizational commitment has the highest HTMT of .612 (Table 3), conforming the expectation for HTMT coefficients being less than 0.9 (Ab Hamid et al., 2017).

Table 3: Reliability and Validity Scores for Constructs

	HTMT			Composite Reliability	AVE
	1.	2.	3.		
1. LMX				.91	.51
2. Organizational Commitment	.612			.94	.46
3. Job Performance	.532	.484		.88	.63

**Structural Model**

SmartPLS was employed to evaluate the structural model and the hypotheses. Tenenhaus et al. (2005) GoF measure was used to evaluate the model's fit for PLS. GoF is a better index because it considers the PLS algorithm's predictive capabilities. The values of the GoF index over 0.36 indicate a high fit, as is the case in the current study with a value of 0.40. The results of the analysis are shown in Table 4.

Table 4: Model Fit and Goodness-of-Fit Index

	AVE	R <sup>2</sup>
LMX	.51	N.A.
Organizational Commitment	.46	.32
Job Performance	.63	.30
Mean	.5333	.31
Goodness of Fit ( $\sqrt{AVE \times R^2}$ )		.40657
SRMR		0.00
NFI		1.00

The values of R<sup>2</sup> and results of the hypotheses testing are presented in Table 4. According to the results, leader member exchange explains 32% of organizational commitment ( $\beta = 0.566$ ;  $t = 10.768 < .001$ ) and directly affects job performance ( $\beta = 0.333$ ;  $t = 3.677 < .001$ ). Furthermore, organizational commitment has significant effects on job performance ( $\beta = 0.287$ ;  $t = 3.677 < .001$ ). Therefore, organizational commitment is a partial mediator between leader member exchange and job performance ( $\beta = 0.162$ ;  $t = 3.472 < .001$ ). Leader member exchange and organizational commitment explain 29% of Job performance. Hence, H1, H2, H3 and H4 were supported.

Table 5: Hypotheses Testing

Direct Hypotheses							
H	Path	Std. $\beta$	Std. Er.	t value	Decision	Confidence Int.	
						2.5%	97.5%
H <sub>1</sub>	LMX → OC	.566	.053	10.768*	Supported	.460	.664
H <sub>2</sub>	OC → JP	.287	.078	3.677*	Supported	.128	.439
H <sub>3</sub>	LMX → JP	.333	.079	4.238*	Supported	.185	.495
Mediating Effect of Organizational Commitment							
H	Path	Std. $\beta$	Std. Er.	t value	Decision	Confidence Int.	
						2.5%	97.5%
H4	LMX → OC → JP	.162	.047	3.472*	Supported (partial mediation)	.073	.258

LMX: Leader Member Exchange; OC: Organizational Commitment; JP: Job Performance  
 \* p < .01 (t > 2.58); \*\*p < .05 (t > 1.96)  
 R<sup>2</sup> (Organizational Commitment = 0.32; Job Performance = 0.29)

#### 4. Discussion and Conclusion

Employees follow the people they see as leaders and focus on the goals and outputs they set. Increasing the quality of LMX has an impact on outcomes. Today, it is possible for organizations to be superior in competition and to act in line with their interests, with the human resources they have. Correctly managing and directing human resources and obtaining maximum efficiency and output will provide competitive advantage. Therefore, it is very important for organizations to have the right human resources, manage them correctly and increase their performance. On the other hand, employees will want to maximize their performance in the context of realizing their own goals. High organizational commitment will increase the motivation of people, integration with the organization will be ensured and productivity will increase.

In the study, the effect of leader-member exchange on job performance and organizational commitment in municipalities was examined. First of all, the reason why the concept of organizational commitment is examined in the study is the expectation that the performance of the personnel working in municipalities will increase as they feel connected to the organization. Second, the reason why organizational commitment was chosen as a variable is the thought that it is more difficult to develop organizational commitment because the political identity of local governments is more prominent. Municipalities differ from other public institutions, especially due to the staff replacements after the general elections. The management/leadership of the municipality representatives and the mayor is periodic because of this situation. In this respect, one of the important problems faced by local governments is to create a sustainable management group. It is more difficult to increase the commitment of the employees to the organization in local municipalities where the personnel turnover rate is high and the management staff changes periodically. For this reason, this study found it meaningful to examine the relationship between commitment and leadership practices, and job performance, which is the output, while understanding the organizational commitment dynamics of the municipalities. Although the variables of the research, leader-member exchange organizational commitment and job performance, have been tested with different variables in various studies, no study has been found on the interaction of these

three variables at the same time. Furthermore, the current study is conducted in a specific context of municipalities.

In this respect, the model put forward in the study has the potential to fill a theoretical gap. At the same time, it has succeeded in producing practical information due to the fact that it explains the effect of leadership processes in a short time in the organizational practices of local governments whose management changes periodically. The findings of the hypotheses developed within the research model resulted in supporting “H1: LMX positively influences organizational commitment.”, “H2: Organizational commitment positively influences job performance”, “H3: LMX positively influences job performance” and “H4: Organizational commitment is a partial mediator between leader member exchange and job performance”.

The supported hypotheses expand the widely accepted knowledge in the organizational behavior literature that commitment drives job performance (Yahaya& Ebrahim, 2016; Turgut et al., 2015, Clinebell et al., 2013). As a result of the research, it is seen that organizational commitment alone increases the job performance output it provides when the right leadership type is applied. For this reason, it is possible to say that the leadership style is important as well as the institutional practices and policies that cause organizational commitment. The study specifically shows the importance of leader-member exchange for managers and organizations. Managers can increase the interaction with the members of the organization in order to increase job performance of the working personnel and to ensure organizational commitment. In today’s world where human capital is very important for organizations (Whipp, et al., 1992; Khatri, 2000), the nature of these relationships should be determined and negative situations that may arise in terms of work performance and commitment can be eliminated accordingly.

In the future studies, the sample selection, data collection method and the differences in the variables will increase the contribution of the research to the literature. On the other hand, the effect of demographic characteristics on the relationship between these three variables can be investigated. However, it can be examined whether there are differences in the context of the results emerging between local governments in different geographies. In addition, the results between different departments can be compared and it can be examined whether there is a connection between the distance of these departments to the management and the variables. The results of the LMX depending on the culture can also be revealed by research.



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## Sürdürülebilir Su için Fırsat Maliyeti Modelleme Yaklaşımı ile Gelir Getirmeyen Su Maliyeti Tahmini

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Sürdürülebilir Su için Fırsat Maliyeti Modelleme Yaklaşımı ile Gelir Getirmeyen Su Maliyeti Tahmini	Prediction of Non-Revenue Water Cost Via Opportunity Cost Modeling Approach for Sustainable Water
<b>Öz</b> <p>Uluslararası Su Birliği ile Amerikan Su İşleri Birliği su kaybını önlemek ve sebep olan unsurları tanımlamak için su denetimi kavramını geliştirmişlerdir. Türkiye’de su kayıplarıyla mücadele ve su denetiminde ortak terminoloji sağlamak için şehirlerin su ve kanalizasyon idarelerinden “standart su dengesi tablosu (SSDT)’nu hazırlaması talep edilmektedir. Çalışmanın amacı; SSDT kapsamında su denetimi aracılığıyla sürdürülebilir su geleceğinin katkısını ortaya koymak, gelir getirmeyen su (GGS) miktarına bağlı gelir kaybını belirlemek, fırsat maliyetini hesaplamak ve GGS maliyeti hesaplaması için “fırsat maliyetini bir model” olarak önermektir. Çalışmanın sonucunda, GGS’nin fırsat maliyetinin hesaplanması sayesinde GGS tahmini maliyetinin sistematik bir şekilde azaltılması ve kayıp yönetimi hesaplamalarına katkı sunması beklenmektedir.</p>	<b>Abstract</b> <p>The International Water Association and the American Water Works Association have developed the concept of water audit to prevent water loss and identify the factors that cause it. In Türkiye, the water and sewerage administrations of the cities are requested to prepare the "standard water balance table (SSDT)" to combat water losses and provide common terminology in water control. The main objectives of this study are to reveal the contribution of a sustainable water future through water auditing, to determine the loss of income due to the amount of non-revenue water (NRW), to calculate the opportunity cost, and to propose the "opportunity cost as a model" for calculating the NRW cost. As a result, we believe that the calculation of the opportunity cost of NRW will reduce the estimated cost of NRW and contribute to the loss management calculations.</p>
<b>Anahtar Kelimeler:</b> Sürdürülebilirlik, Su Denetimi, Fırsat Maliyeti, Gelir Getirmeyen Su, Standart Su Dengesi Tablosu.	<b>Keywords:</b> Sustainability, Water Auditing, Opportunity Cost, Non-Revenue Water, Standard Water Balance Chart.
<b>JEL Kodları:</b> M41, M42, Q25	<b>JEL Codes:</b> M41, M42, Q25

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Yazar 1’in makaleye katkısı % 50, Yazar 2’nin makaleye katkısı % 50’dir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Giriş

Dünyada 1918-1945 dönemi ekonomik, siyasi ve sosyal açıdan “büyük buhran” olarak nitelendirilmektedir. Milenyum çağı ise “su krizi” ile yeni buhranı doğuracağı tahmin edilmektedir. 21. yüzyılda su kaynaklarına yönelik senaryolar; nüfus artışı, göç, sürekli genişleyen sanayileşme, insan faaliyetleri, sıcaklık artışı ve yağış oranlarında dengesizlik gibi nedenlerle suyun nitelik, nicelik yönünden değişeceği ve bu değişimin su kaynaklarını azaltacağı yönünde olmaktadır (OECD, 2019). Yaşanan su kıtlığı sebebiyle su artık denetlenmesi gereken önemli değerli ve sürdürülebilirliği olması gereken bir *varlıktır*. Su denetimi, su akışının kaynağından arıtılmasına su kullanıcılarına iletilmesine kadar ki tüm süreçlerin ve verilerin güvenilir bir şekilde kayıt altına alınması açısından önemlidir.

*Sürdürülebilirlik*, mevcut ve gelecek nesiller için yeterli su kaynakların mevcut olmasını sağlamayı içerir. Küresel olarak içme suyu şebekelerinden kaynaklanan su kayıpları günde 346 milyar litreye ulaşmaktadır. Bir kişinin günlük 150 litre su kullandığı varsayımıyla bu kayıplar ile 2,3 milyar kişiye su sağlama olanağı yaratılabilir (Liemberger ve Wyatt, 2019). Su kayıpları, su idarelerinin işletme maliyetlerini artırmakta, geliri kısıtlamakta ve gelecekte artan su kullanıcı sayısına yetecek suyun sağlanması için genişleme potansiyelini azaltmaktadır (Arregui vd., 2018:1). Gelir getirmeyen su (GGS) kayıpları, idari ve fiziki su kayıplarının ilave olarak faturalandırılmamış izinli su kayıplarını da kapsamaktadır. GGS, enerji yoluyla sürdürülebilirliğin önünde bir engel oluşturmaktadır ve su sürdürülebilirliği ile şehirlerde GGS oranının düşürülmesi sağlanabilir. Bu çalışmada, İstanbul Büyükşehir Belediyesi (İBB)'nin 2008-2021 verilerinden elde edilen örneklem ile GGS'nin su denetimi yoluyla tespit edilmesi ve GGS'nin yarattığı zarara bağlı olarak tahmini fırsat maliyetinin hesaplanması amaçlanmaktadır.

## 2. Su Denetimi ve Kavramsal Çerçeve

*Su denetimi*; su kullanımında kayıpları azaltmaya yönelik olarak hangi adımların atılabileceğini belirlemekte ve aynı zamanda su kullanıcılarına dağıtım sistemleri ile ilgili bilgi vererek su kaynakların daha kolay ve etkili yönetilmesini sağlamaktadır. Su kullanımının tümünü kategorize ederek rasyonel ve bilimsel bir çerçeve sunan su denetimi suyu korumada temel bir gerekliliktir. Sturman ve diğerleri (2004), birçok ülkede insanların içme suyuna erişimde zorluk yaşaması nedeniyle, su kullanımını azaltmaya yönelik kolay veya karmaşık sistemler için su akışını ölçmek amacıyla su denetim yöntemini geliştirmiştir. Su denetimi, su kaybını azaltabilmek amacıyla basit veya karmaşık sistemlerde su akışlarını ve kalitesini ölçme yöntemidir. Su denetimi, gelecekte suya olan talep arttıkça önemi artacak olan bir su tasarrufu mekanizmasıdır (Sturman vd., 2004:375).

Su denetimi, boru sızıntısı ve taşmasından kaynaklanan fiziksel kayıpların üstesinden gelmek için kullanılmaktadır. Ayrıca, sermaye ve işletme maliyetini azaltmak için verimli kullanımı belirlemeye yardımcı olmaktadır. Su sorunlarının denetim yardımıyla üstesinden gelmek için IWA ve AWWA, geniş çaplı bir çalışma başlatmıştır. Bu kapsamda, su temin sistemine giren ve tüm suyu hesaba katan dünya çapında kabul görmüş standart bir yaklaşım sağlamaktadır. Standart su dengesi, birçok ülke için uygulamaya dayalı ortak uluslararası terminoloji kullanan, genellikle yıllık olarak su kayıplarını ve bileşenlerini belirlemek için standart bir yapı kullanılmaktadır (AWWA, 2009). Standart su dengesi Tablo 1’de verilmektedir.

Su kaybı durumunu değerlendiren su denetiminin hesaplanmasında standart su dengesi tablosu bir araç olarak kullanılmaktadır. Su dengesinin geri kazanılabilir kayıpların bulunmasına, kayıpların değerlendirilmesine ve fayda-maliyet analizinin hazırlanmasına

yardımcı olduğu ifade edilmektedir. Standart su dengesi tablosunda Sisteme Giren Su; “izinli tüketim” ve “su kayıpları” olmak üzere iki bölüme ayrılmaktadır. *İzinli tüketim*; faturalandırılmış izinli tüketim ve faturalandırılmamış izinli tüketimden meydana gelmektedir.

Tablo 1. Standart Su Dengesi Tablosu

Kendi (öz) Kaynakları	Sisteme Giren Su	İzinli Tüketim	Faturalandırılmış İzinli Su Tüketimi	Faturalandırılmış Ölçülmüş Kullanım	Gelir Getiren Su Miktarı
			Faturalandırılmamış İzinli Su Tüketimi	Faturalandırılmamış Ölçülmüş Kullanım	
Artıtılan Su		Su Kayıpları	İdari Kayıplar	İzinsiz Tüketim	Gelir Getirmeyen Su Miktarı
				Ölçüm Hataları ve Veri İşleme Hataları	
Taşınan (İthal) edilen su			Fiziki Kayıplar	İletim ve/veya Dağıtım Şebekesindeki Kaçak	
				Tesis Depolama Tanklarında Sızıntı ve Taşmalar	
				Müşteri Ölçüm Noktasına Kadar Servis Bağlantılarında Oluşan Kayıp-Kaçaklar	

Kaynak: IWA, 2018

*Faturalandırılmış ölçülmüş kullanım*, su ve kanalizasyon idarelerinde abone kaydı ile sayaç bağlantısı bulunan, düzenli ölçüm ile faturalandırması yapılan abonelerin kullandığı su miktarıdır. (Konutlar ve dükkân, restoran, otel gibi ticari mekânları vb.). *Faturalandırılmamış ölçülmemiş kullanım*, ölçümü hesaplanamamış ancak tahmini olarak ya da standartlara göre hesaplanarak faturalandırılmış tüketim miktarını ifade etmektedir. *Faturalandırılmamış izinli su tüketim*, idare tarafından izinli olarak ölçülmüş/ölçülmemiş ancak faturalandırılmamış bağlantılar sebebiyle oluşan toplam tüketimdir. *Faturalandırılmamış ölçülmüş kullanım* su idaresinde abone olarak kaydı ve sayaç bağlantısı bulunan ve su tüketim ölçümleri yapılan, ancak su ve kanalizasyon idarelerinin izinli olarak faturalandırma yapmadıkları cami, park, bahçe, yangın ekipmanları vb. alanlarda kullanılan su miktarını ifade etmektedir (Muhammetoğlu ve Muhammetoğlu, 2017: 113). Dağıtım sistemlerindeki su kayıpları, şebekeye verilen su miktarı ile su tüketicilerinin izinli olarak kullandıkları su miktarı arasındaki fark olarak açıklanmaktadır. Şebeke suyu hatlarındaki su kayıpları fiziki ve idari olarak iki gruba ayrılmakta; bu kayıpların toplamı ile toplam su kaybı bulunmaktadır (Dilcan, vd., 2018: 10). *Gelir getirmeyen su kayıpları*, şebekeye verilen su miktarı ile faturalandırılan su miktarı arasındaki fark olarak tanımlanmaktadır.

Su kıtlığı ile mücadele edebilmek için su kaynaklarını kullanma şeklini önemli ölçüde iyileştirmek gerekmektedir. Kentsel su yönetiminde sürdürülebilir kalkınmanın, su ve ekonomik verimliliğin sağlanması için fiziki sızıntıların belirlenmesi ve fiziki sızıntıların tespiti için en uygun yöntem ve ekipmanların tespit edilmesi gerekmektedir (Fırat, Yılmaz vd. 2021:407). SSDT, şebeke suyu sistemlerindeki su kaybı performansını değerlendirmek için üstün araçlar sağlayan ve katkıda bulunan faktörlerin potansiyel olarak düzeltici unsurları belirleyen temel performans göstergelerini sayısallaştırmasını ve standartlaştırılmasını amaçlamaktadır (Al-Qawasmı ve Al Sharif, 2021: 54). Eugene (2017) yaptığı çalışmada, şebeke suyu dağıtım sistemlerindeki su kayıplarının tespitinde ölçülebilir alt bölge, standart su dengesi ve gece akışı modellenmesi vb. yöntemlerini temel alan yeni bir model önermiştir. Bu

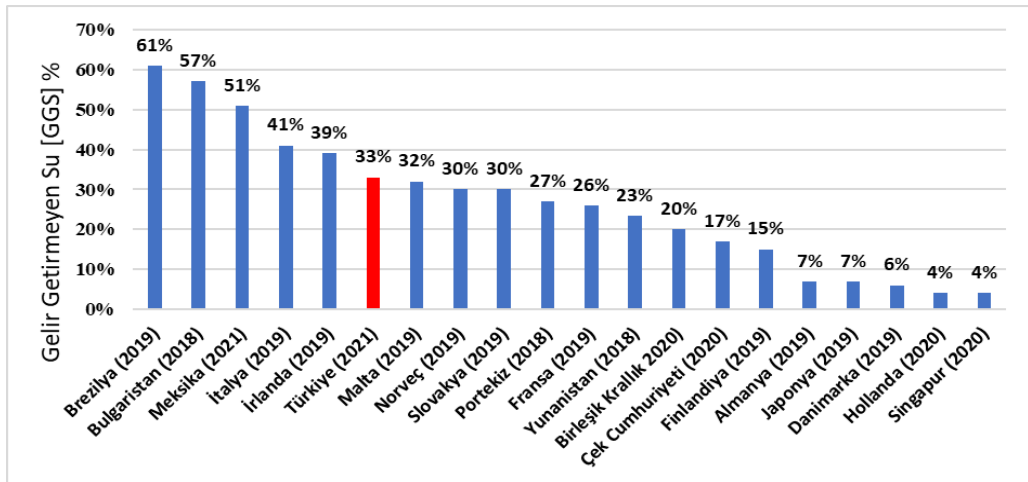
model, şebeke su iletim sistemlerinde kaçaklara yönelik olarak yapılan tahminlerin gerçek sonuç verdiğini belirtmiştir. Batchelor ve diğerleri (2017)'de yaptıkları çalışmada su denetimini su arzı, talebi, erişilebilirliği ve kullanımındaki eğilimleri daha geniş yönetim, kurumlar, kamu ve özel harcamalar, mevzuat ve belirli alanlarda suyun daha geniş politik ekonomisi bağlamına yerleştirerek su muhasebesinden bir adım daha ileri bir noktada olduğunu ifade etmişlerdir.

Su denetiminden elde edilebilecek kazanımlar dikkate alınarak, su kayıplarının kontrol edilebilmesi amacıyla Orman ve Su İşleri Bakanlığı 2014'te "İçme Suyu Temin ve Dağıtım Sistemlerindeki Su Kayıplarının Kontrolü Yönetmeliği", 2015 yılında "İçme Suyu Temin ve Dağıtım Sistemlerindeki Su Kayıplarının Kontrolü Yönetmeliği Teknik Usuller Tebliği" yayımlanmıştır. 2015 yılında yayımlanan Tebliğ'de; şebeke suyu temin ve dağıtım sistemlerinin yönetimi, iletim hatlarında meydana gelen su kayıplarını azaltması gereken önlemler, su kayıplarının belirlenmesi ve azaltılmasına yönelik standartlar getirilmiştir. 23 Eylül 2020 tarihinde "İçme Suyu Temin ve Dağıtım Sistemlerindeki Su Kayıplarının Kontrolü Yönetmeliği Teknik Usuller Tebliğinde Değişiklik Yapılmasına Dair Tebliğ" yürürlüğe girmiştir. Bu yönetmeliklerle; Türkiye'deki içme suyu şebekelerinde yaşanan kayıpları izlemek ve su kaynağı yöneticilerinin her yıl SSDT'nin düzenlenmesi sağlanmaktadır. Su kaynaklarını korumak ve su kaynaklarına yönelik talebi kontrol etmek, kayıpları azaltmak ve performansı artırmak için yeni stratejilerin oluşturulması gerekmektedir (FAO, 2020). Son yıllarda Türkiye'de de su kaynaklarının geliştirilmesine yönelik klasik yaklaşımların sürdürülebilirliğini yitirmesi nedeniyle *su kaynakları yönetimi* çalışmalarına önem verilmektedir (Kılıç, 2021:1).

### 2.1. Gelir Getirmeyen Su Kayıpları ve Maliyetleri

Özellikle gelişmekte olan ülkelerin şebeke suyu iletim hatlarındaki kaybı %50 civarındadır. Gelişmiş ülkelerde su bilincinin ve modern su temin sisteminin 19. yüzyılın ikinci yarısında başlamaktadır (Guillerm, 1988). Şekil 1'de su kaybını takip eden ve azaltmaya yönelik önlem alan bazı ülkelerin gelir getirmeyen su (GGS) kayıp oranları gösterilmektedir.

Şekil 1. Bazı Ülkelerde Gelir Getirmeyen Su Kaybı Oranları (2018-2021)

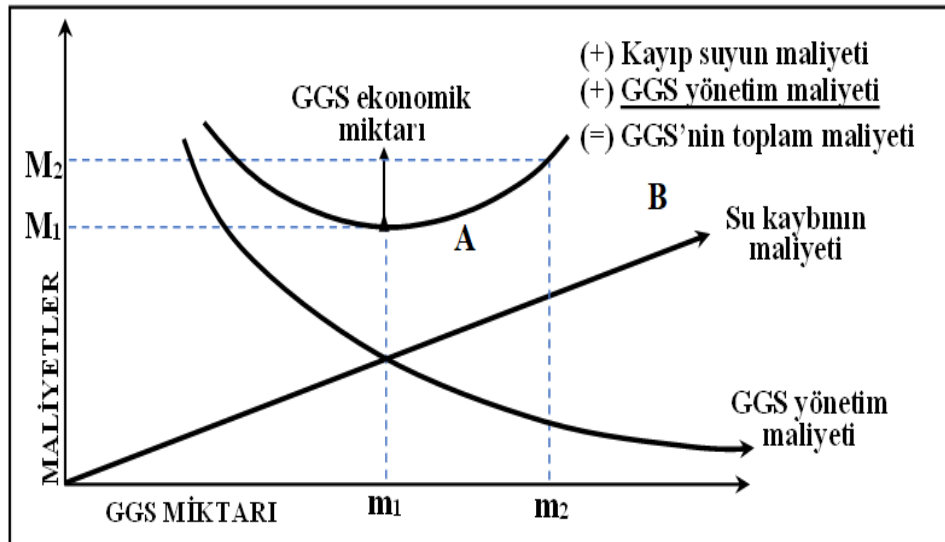


Şekil 1 incelendiğinde, her ülkede gelir getirmeyen su oranlarının birbirinden farklı olduğu görülmektedir. Şebeke sistemlerindeki su kayıpları, dünya çapında birçok ülke ve şehirde yaygın ve ortak bir sorundur. Gelir getirmeyen su kayıpları ülkelerin gelişmişlik düzeylerine

bağlı olarak değişmektedir. Gelişmiş ülkelerde şebeke suyu kayıp oranı çoğunlukla %10 ve altında gerçekleşmektedir. Gelir getirmeyen su oranı %10 ve altında olan şebekelerde şebeke suyu dağıtım sistemi “güçlü”, %40 ve üzerinde olanlarda ise şebeke suyu dağıtım sistemi “zayıf” olarak kabul edilmektedir (Öztürk, 2020). Gelir getirmeyen suyun nedenleri gelişmiş ve gelişmekte olan ülkeler arasında değişiklik göstermektedir. Gelişmekte olan ülkelerde fiziki kayıplar ve faturalandırılmamış izinli tüketim daha önemli olurken, gelişmiş ülkelerde kayıplarda su şebekesinin yaş ortalamasının yüksek olması önemli olmaktadır (OFWATT, 2022). Gelişmekte olan ülkelerde fiziki kayıplar ve faturalandırılmamış izinli tüketimin büyük bir kısmı, kurumsal ve idari sebeplere bağlı olmaktadır. Bu su kayıplarının büyük bir oranı yasa dışı kullanımdan kaynaklanmaktadır (Kingdom vd., 2006). Birçok gelişmiş ülkede, belirgin su kayıpları bulunmamakta veya sınırlı olmaktadır. Gelişmekte olan ülkeler için Dünya Bankası, ortalama olarak idari kayıpların –özellikle yasa dışı bağlantılardan kaynaklanan hırsızlıkların– GGS kayıplarının yaklaşık %40'a ulaştığını tahmin etmektedir. Bazı şehirlerde ise idari kayıplar fiziki kayıplardan daha yüksek olmaktadır. Yasadışı bağlantılardan kaynaklanan idari kayıpları azaltmak için, genellikle belediye sorumluluğun ötesinde, su ile ilgili tüm kurumların bilinçli ve hedefli desteğine gereksinim duyulmaktadır. Su denetimi, GGS kayıplarına yönelik analiz yapmak ve GGS kaybının azaltılmak için önemli bir araç olmaktadır (Alchetrone, 2022).

Gonzalez vd. (2011) yaptıkları çalışmada, gelişmekte olan ülkelerde gelir getirmeyen su miktarının yüksek olmasının ve kamu hizmetleri arasındaki su kayıplarındaki farklılıkların ana sebebinin teşvik eksikliği olduğu sonucuna varmıştır. Su idareleri gelir getirmeyen su miktarını azaltmaya yönelik maliyeti yüklenen teşviki bulamamaktadır. Ayrıca gelir getirmeyen su ile ilgili bilgi eksikliği olduğu açıklanmıştır. Farley vd. (2008), GGS ekonomik miktarını, kaybedilen suyun maliyeti ve GGS yönetiminin maliyeti bileşenlerinin kesişim noktası olduğu varsayımıyla, GGS ekonomik miktarını Şekil 2 üzerinde göstermektedir. Şekil 2, maliyet muhasebesinin “ekonomik sipariş miktarı” yaklaşımına dayandırılmaktadır.

Şekil 2. GGS Ekonomik Miktarının Belirlenmesi



Kaynak: Farley vd., 2008:20



- Kaybedilen suyun maliyeti hem fiziksel hem de idari kayıplar nedeniyle kaybedilen suyun değerini ifade etmektedir. Fiziksel kayıpların değeri; işçilik, malzeme (kimyasallar vb.) ve diğer üretim unsurları (elektrik, plansız bakım-onarım vb.) dâhil olmak üzere birim değişken işletme maliyeti ile çarpılarak hesaplanır. İdari kayıpların değeri ise, ortalama müşteri tarifesi ile çarpılmalıdır. GGS miktarı arttıkça, kaybedilen suyun maliyeti de orantılı olarak artması beklenir.
- GGS yönetiminin maliyeti ise, GGS'yi azaltmak için yapılan yönetim maliyetleridir. Personel maliyetleri, ekipman, ulaşım ve diğer yönetsel maliyet unsurları bu kapsamdadır. Bu maliyetler, genellikle sabit maliyet niteliğindedir ve GGS miktarı düştükçe, yönetim maliyetlerinin artması beklenmektedir.

İki maliyet bileşeninin toplanması toplam maliyeti verir. Şekil 2'de iki maliyet doğrusunun kesiştiği nokta (A noktası), GGS ekonomik miktarı olan minimum GGS toplam maliyetini vermektedir. GGS ekonomik miktarı noktasından sonra su kayıplarının maliyeti artarken, GGS yönetim maliyetleri azalmaktadır (B noktası). Benzer şekilde GGS ekonomik miktarının altına düşülmesi durumunda ise, GGS yönetim maliyeti artacağı için yapılan tasarruftan daha fazla maliyete neden olabilir. GGS ekonomik seviyesi; su tarifelerindeki değişim, su üretim maliyetindeki değişimlerden ve mevsimsel etkilerden dolayı yıl içinde değişkenlik gösterebilir. Yöneticiler, GGS ekonomik miktarını yıllık bazda değerlendirmeli ve kaynakların etkin kullanımını sağlamak için GGS hedefini buna göre belirlemelidir (Farley vd., 2008: 21). Eğer bir şehir su kıtlığı ve GGS maliyeti yüksekliği ikilemiyle karşı karşıya kalırsa, bu şehrin sürdürülebilirliğinden bahsedilemez (Elkharbotly vd., 2022: 2).

GGs'nin ekonomik miktarı yaklaşımı ile gerçekleşmiş bir faaliyetin maliyeti ortaya konulmaya çalışılmaktadır. Kıt bir kaynak olan suyun değerini maliyeti üzerinden hesaplamak yerine, hizmeti sunanların öngördüğü değer olan "tarife" üzerinden hesaplamak daha doğru bir yaklaşım olacaktır. Bu yaklaşım ile kaybedilen su, kaçırılan fırsatı temsil etmektedir. Bu nedenle bu çalışmada, yeni bir model öneri olarak *suyun fırsat maliyeti* ortaya konulmaktadır.

### 3. Yöntem

Bu çalışma bir araştırmadır. Tanımlayıcı araştırmalar, araştırma probleminin niteliklerini ve oluş sıklığını tespit etmek, problemde etkili olan değişkenleri ve bu değişkenlerin önem derecelerini belirlemek, problemin ortaya çıkış biçimini tahmin etmek ve değişkenler arasındaki ilişkiyi tespit ederek genellemelere ulaşmak için yapılmaktadır. Bu araştırmaların temel amacı, nedensel bir ilişki kurarak genellemelere varmak, sistemleştirip sınıflandırmak ve tahminlerde bulunmaktır (İslamoğlu, 2009). Uluslararası Su Birliği (IWA) ve Amerikan Su İşleri Derneği (AWWA) su denetimi metodolojisi olarak "standart su dengesi tablosu (SSDT)"nu geliştirmiştir. Türkiye, 2014 ve 2015 yıllarında çıkardığı tebliğ ile su kaynağı yöneticilerinin bu tabloyu hazırlamasını talep etmiştir. Ancak Türkiye'de su denetimini sağlamayı amaçlayan bu tablonun belediyelerce düzenli bir şekilde hazırlanmadığı ya da hazırlanıp kamuoyuna sunulmadığı belirlenmiştir. Bu çalışmada araştırma probleminin tespit edilmesinde bu başlangıç noktasından hareket edilmiştir. Araştırma problemi, standart su dengesi tablosu verilerini inceleyerek, geleceğe yönelik su denetiminin sağlanıp sağlanamayacağıdır. Araştırma problemine bağlı olarak bu farkın ortaya konulması, çalışmanın amacını oluşturmaktadır. Çalışmanın temel varsayımları; İBB, İSKİ (İstanbul Su ve Kanalizasyon İdaresi) ve Türkiye İstatistik Kurumu (TÜİK)'ndan elde edilen verilerin tümüyle gerçek ve doğru olduğu ve 2008-2021 dönemleri arasındaki verilerin eğiliminin 2022-2025 döneminde de devam ettiğidir.

### 3.1. Araştırmanın Evreni ve Veri Toplam Aracı

Türkiye'nin şebeke suyu belediyeler aracılığıyla sağlanmaktadır. Türkiye'nin 2020 verilerine göre kaynaktan çekilen toplam suyun %16,54'ü İBB tarafından sağlanmaktadır. İBB, Türkiye'deki abone sayısının %20,15'ine sahiptir. Aynı zamanda Türkiye'de dağıtılan içme suyunun %19,77'si İBB tarafından yapılmaktadır. İBB'nin abone sayısı büyüklüğü, su kaynaklarının kıtlığı, coğrafik yapısı, su denetiminin zorluğu gibi nedenlerden dolayı Türkiye'yi temsil edeceği varsayılmıştır. Araştırmada kaynak olan veriler; İSKİ'nin 2008-2021 yıllarına ait veriler; "standart su denge formu" raporlarından ve faaliyet raporlarıdır.

### 3.2. Verilerin Analizi

Çalışmanın temelini oluşturan verilerin kaynaklarda neler olduğunun tespitinden sonra verilerin ilgili kaynaklardan toplanması, verilerin birleştirilmesi ve analize uygun olacak şekilde dönüştürülmesi aşamaları veri hazırlamayı oluşturmaktadır. Bu yönde, İBB'nin faaliyet raporları, İBB açık veri portalı, İSKİ raporları ve TÜİK'in ilgili verilerinden yararlanılarak bir veri seti oluşturulmuştur. İBB ve İSKİ'nin kurullarında bu veri seti onandığı ve kamuoyu ile paylaştığı için verinin geçerlik ve güvenilirlik sağladığı varsayılmıştır. Bu veri seti için Excel kullanılarak "eğilim çizgisi" seçeneklerinden "polinom" üzerinden üretilen denklemden yararlanılarak 2022-2030 dönemi için tahminleme yapılmıştır. Tahminler İSKİ'nin 2020-2040 döneminde beşer yıllık yapmış olduğu tahmini değerlerle yakınlık göstermektedir. Veri seti ve tahmini değerler TÜİK verilerine göre Türkiye nüfusunun üzerinden analizler yapılmıştır.

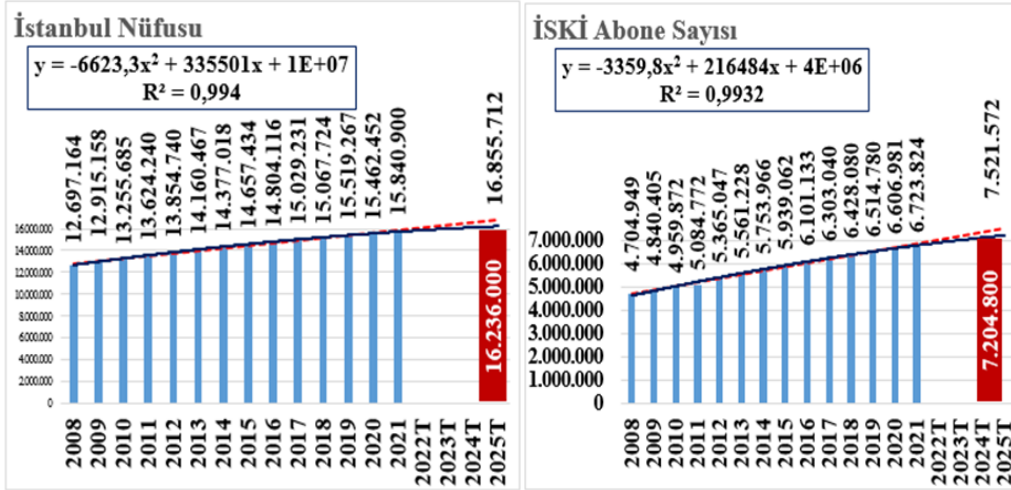
## 4. Bulgular ve Değerlendirme

Türkiye nüfusunun %18,72'si İstanbul'da yaşamaktadır (TÜİK, 2022). İstanbul 40 belediyesi ile Türkiye'nin en çok şebeke suyu hizmeti ve kanalizasyon şebekesi bulunan şehridir. Türkiye'nin abone sayısının %19,77'si İstanbul'dadır ve en çok aboneye sahip ilidir. 2021 yılında Türkiye'deki kaynaktan çekilen toplam suyun %16,54'ünü 6.723.824 abone kullanmıştır. İstanbul'un yüzölçümü, abone sayısı, şebeke dağıtım sistemi, suyun il sınırları dışından taşınması, su kaybının büyüklüğü, yatırım olanakları gibi birçok nedenden dolayı GGS kaybı açısından incelenmesi ve uygulamalarının diğer şehirlere de yansıtılması yerinde olacaktır. Araştırmaya kaynak olacak veriler; İSKİ'nin faaliyet raporlarından alınmıştır. Analizde kullanılan 2008-2021 yıllarına ait veriler; "standart su denge formu" raporlarından ve faaliyet raporlarının ilgili bölümlerinden sağlanmıştır.

### 4.1. İstanbul'un Standart Su Dengesi Tablosu

Su dengesinin hesabı için sisteme giren ve tüketilen su ölçülmektedir. Su dengesi tablosu aracılığıyla hem toplam su kaybı hem de su sızıntılarının miktarları tespit edilmektedir. Kullanılan su miktarları ile sisteme giren su miktarı karşılaştırılmaktadır. Bu karşılaştırma sonucunda ortaya çıkan fark, su kaybı olarak açıklanmaktadır. Kayıp su, gelir getiren ve gelir getirmeyen su miktarları ölçülerek hesaplanmaktadır. Standart su dengesinin bileşen miktarları ve su kaybına sebep olan etmenler şebeke sistemi ve şehirlerin özelliklerine göre farklılıklar göstermektedir. Burada önemli olan suyun denetimini yaparak kayıp sebeplerini bulmak ve çözüm sunabilmektir.

Şekil 3. İstanbul'un Yıllara Göre Nüfusu ve Abone Sayısı

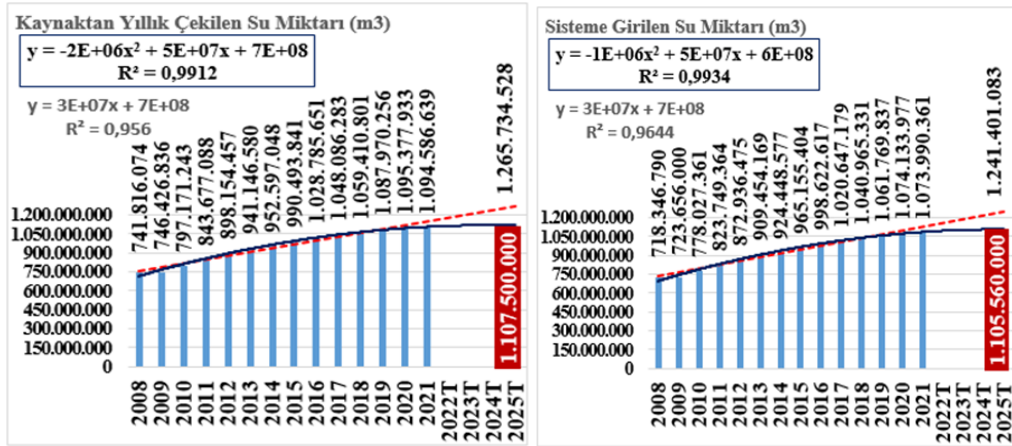


Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

Şekil 3'te İstanbul'un 2008-2021 yıllarındaki gerçek nüfus ve abone sayısı verileri ile bu verilerden yararlanılarak oluşturulan doğrusal (noktalı doğru) ve polinom denklemlerine göre 2025 yılı tahmini İstanbul nüfusu ve İSKİ abone sayısı öngörüsü verilmektedir. Doğrusal denkleme göre İstanbul nüfusu 2025 yılında 16.855.712 kişi ve 7.853.747 İSKİ abonesi olacağı tahmin edilirken, polinom denklemine göre nüfusu 16.236.000 kişi ve 7.204.800 aboneye ulaşacağını tahmin etmektedir. İSKİ Genel Müdürlüğü'nün 2020 yılında yapılan su sempozyumunda TÜİK verileri kullanılarak 1999 yılında yapılan "Orta Büyüme Senaryosu"na göre İstanbul'un 2025 yılı nüfusu tahmini 16.115.000 kişidir (İBB, 2020). Bu durum İstanbul'un gelecekte de içme suyu ihtiyacının artış göstereceğini ortaya koymaktadır. 2000 ile 2050 arasında küresel olarak su talebinin %55 artacağı tahmin edilmektedir. Talepteki artışın başlıca nedenleri; %+400 imalat, %+140 elektrik ve %+130 evsel kullanımdır (OECD, 2012). İstanbul yüzeysel su kaynaklarını kullanmaktadır. Kaynaktan çekilen su miktarı 2008 yılında 741.816.074 m<sup>3</sup> iken, 2021 yılında 1.094.586.639 m<sup>3</sup> olmuştur. 2021 yılı itibarıyla 15 milyon 840 bin nüfuslu İstanbul'a verilen günlük ortalama su miktarı 2.942.439 m<sup>3</sup>tür.

Şekil 4'te İstanbul'un kaynaktan çekilen ve sisteme girilen su miktarları 2008-2021 yılları için gerçek veriyi içerirken, 2025 yılı için Excel aracılığıyla doğrudan ve polinom denklemleri ile tahminleri grafikte verilmektedir.

Şekil 4. İstanbul'un Kaynaktan Çekilen ve Sisteme Giren Su Miktarı (2008-2021 ve 2025 tahmini)



Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

Tablo 2'de şebeke suyu sistemindeki 2008-2021 yılları arasında tüketilen bileşenlerinden faturalandırılmış ve faturalandırılmamış izinli su tüketimi gösterilmektedir. Standart su dengesi tablosu 2014 yılında yayımlanan Tebliğ ile resmi hale gelmiş, İSKİ'nin 1996 yılından itibaren; sisteme giren su miktarı (552 milyon m<sup>3</sup>), faturalanan su miktarı (327 milyon m<sup>3</sup>) ve gelir getirmeyen su miktarı (225 milyon m<sup>3</sup>) raporlandığı tespit edilmiştir. Buna göre 1996 yılında sisteme giren su miktarının %59,2'si faturalanabilirken, 2021 yılında bu oran %79,4'e ulaşmıştır (İBB, 2003). İstanbul nüfus artışına ve abone sayısı ile ilgili sisteme giren su miktarı ve izinli tüketim miktarı da doğru orantılı olarak artış göstermiştir.

Tablo 2. İstanbul Yıllık İzinli Su Tüketim Miktarı (2008-2021)

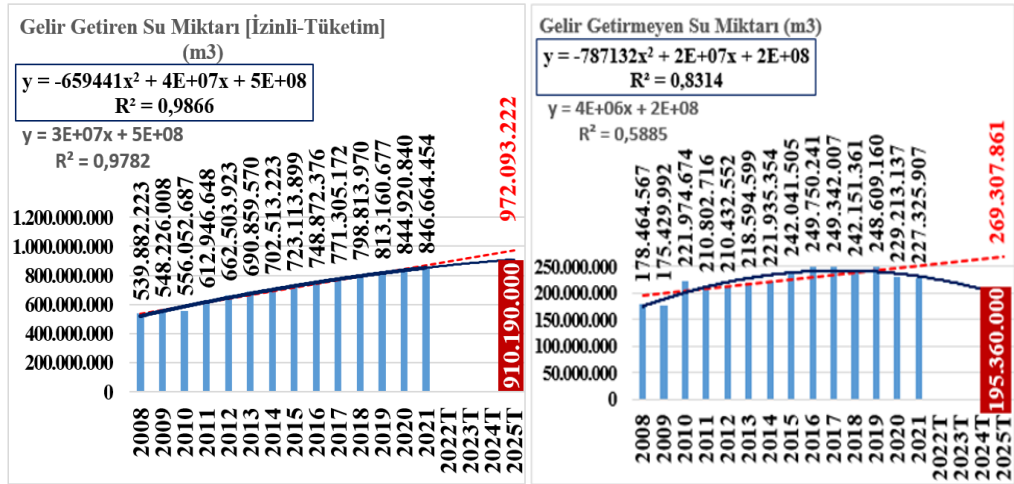
Yıllar	Sisteme Giren Su	Faturalandırılmış İzinli Su Tüketimi			Faturalandırılmamış İzinli Su Tüketimi			Toplam	
		Ölçülmüş	Ölçülmemiş	%	Ölçülmüş	Ölçülmemiş	%	%	
2008	718.346.790	539.882.223	0	%75,2	0	0	%0,0	%75,2	
2009	723.656.000	548.226.008	0	%75,8	0	0	%0,0	%75,8	
2010	778.027.361	549.952.100	0	%70,7	0	0	%0,0	%70,7	
2011	823.749.364	612.946.648	0	%74,4	0	0	%0,0	%74,4	
2012	872.936.475	662.503.923	0	%75,9	0	0	%0,0	%75,9	
2013	909.454.169	690.859.570	0	%76,0	0	0	%0,0	%76,0	
2014	924.448.577	702.513.223	0	%76,0	0	0	%0,0	%76,0	
2015	965.155.404	723.113.899	0	%74,9	9.521.975	0	%1,0	%75,9	
2016	998.622.617	748.872.376	0	%75,0	9.406.653	0	%0,9	%75,9	
2017	1.020.647.179	771.305.172	0	%75,6	8.363.550	0	%0,8	%76,4	
2018	1.040.965.331	798.813.970	0	%76,7	9.612.572	0	%0,9	%77,6	
2019	1.061.769.837	813.160.677	0	%76,6	11.717.587	0	%1,1	%77,7	
2020	1.074.133.977	844.920.840	0	%78,7	7.111.725	0	%0,7	%79,4	
2021	1.073.990.361	846.664.454	0	%78,8	6.919.586	0	%0,6	%79,4	

Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

#### 4.2. İstanbul'un Gelir Getirmeyen Su Kayıpları ve Maliyeti

Standart su dengesi tablosu kullanılarak İstanbul şebeke su dağıtım sisteminin gelir getiren ve gelir getirmeyen miktarları hesaplanmıştır. Gelir getirmeyen su, sisteme giren fakat ücretlendirmeyen bileşenleri kapsamaktadır. Gelir getiren su ise, sistemde ücretlendirilen yasal olarak faturalandırılmış su tüketimlerini içermektedir. Çalışmada su kayıp oranı, GGS kayıp oranına eşit olduğu varsayılmaktadır.

Şekil 5. İstanbul'da Gelir Getiren ve Gelir Getirmeyen Su Miktarı (2008-2021)



Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

Şekil 5'te gelir getiren ve gelir getirmeyen su miktarı grafikleri verilmektedir. Şebeke suyu dağıtım şebekesi sistemini yönetmek geniş bir ağ, karmaşık, gizli bir boru sistemini kapsayarak değişikliklerin, hasarların veya yasa dışı bağlantıların tespit edilmesini zorlaştırmaktadır. Açık bir sistemde su kayıplarını veya gelir getirmeyen suyu yönetmek, aynı zamanda, faaliyetlerin yalnızca bir kayıp görünür hale geldiğinde veya rapor edildiğinde başlatıldığı reaktif, pasif bir şekilde çalışmak anlamına gelmektedir (Borsting, 2023).

Türkiye nüfusunun %18,71'inin yaşadığı İstanbul'da gelir getirmeyen suyu azaltabilmek için büyük bir çaba gösterilmesi gerekmektedir (TÜİK, 2020). İstanbul'un yıllar itibariyle nüfus ve abone artışı göz önünde bulundurulduğunda gelir getiren su miktarının 910.190.000 m<sup>3</sup> ile 972.093.222 m<sup>3</sup> arasına ulaşacağı tahmin edilmektedir. Gelir getirmeyen su yönetimi, belediye hizmetlerinin sürdürülebilirliğinde, genişlemesinde ve iyileştirmesindeki önemli gösterge olmaktadır. Gelir getirmeyen su, kaybedilen suyun yanında mali maliyetlerden ve satılabilecek olan sudan elde edilen gelir kaybına sebep olmaktadır. Gelir getirmeyen su kayıplarının ise alınan önlemler ve yatırımlarla 195.360.000 m<sup>3</sup> ulaşma olasılığı yüksektir. İstanbul'un gelir getiren ve izinli tüketilen su miktarının detayları Tablo 3'te verilmektedir.

Tablo 3. İstanbul'da Gelir Getiren (İzinli Tüketim) Su Miktarının Bileşenleri (2008-2021)

Yıllar	Faturalanan Su	Kartlı Sayaç	Tespit Edilen Kaçak Su	Tanker (Hamidiye)	Depo, İsale, Arıza ve Tahliye	Bedelsiz Su	GELİR GETİREN SU ( $\Sigma m^3$ )
2008	497.649.998	34.579.308	264.547	890.478	0	6.497.892	539.882.223
2009	474.709.062	66.221.741	316.741	890.542	0	6.087.922	548.226.008
2010	469.106.635	78.354.563	131.399	644.613	0	7.815.477	556.052.687
2011	512.673.360	78.156.363	322.960	711.438	11.993.810	9.088.717	612.946.648
2012	559.057.474	81.506.507	524.415	597.348	12.565.151	8.253.028	662.503.923
2013	573.508.345	82.859.894	400.128	213.549	25.675.296	8.202.358	690.859.570
2014	581.942.716	89.537.885	968.545	152.936	20.917.288	8.993.853	702.513.223
2015	612.233.873	90.337.479	405.066	117.861	20.019.620	9.521.975	732.635.874
2016	649.387.364	75.626.258	441.465	122.414	23.294.875	9.406.653	758.279.029
2017	674.083.626	77.295.936	244.782	84.402	19.629.482	8.363.550	779.701.778
2018	719.546.186	55.703.060	137.671	74.754	23.352.299	9.612.572	808.426.542
2019	771.690.525	7.600.521	168.618	26.065	33.674.948	11.717.587	824.878.264
2020	843.564.311	1.141.624	170.797	44.108	0	7.111.725	852.032.565
2021	839.693.523	112.494	280.173	22.141	6.556.123	6.919.586	853.584.040

Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

İSKİ raporlarında 2014 yılında Tebliğ'in yürürlüğe girmesi ile SSDT'nin gerekliliğinden dolayı "faturalandırılmamış izinli su tüketimi" verilerine de yer verilmeye başlanmıştır. Bu başlığa yer verilmeye başlanmasıyla birlikte faturalandırılmayan izinli su tüketimi oran ve miktarının hızla düştüğü görülmektedir. Sisteme giren su miktarı (üretime giren) ile aboneye sevk edilen izinli su tüketimi arasındaki %20'lik fark su kaybı olarak nitelendirilmektedir. Roma döneminden itibaren kentin su ihtiyacını karşılamak için çevreden su taşınması için kemerler yapılmıştır. Günümüzde de İstanbul'un kaynaktan çektiği su; İstanbul haricinde Düzce, Kırklareli, Tekirdağ, Kocaeli, Sakarya gibi farklı şehirdeki havzalardan elde edilmektedir. Bu durum göz önünde bulundurulduğunda su kaybının ne kadar değerli olduğu ortadadır. Bu nedenle su yetkililerinin; su kayıplarına, su kaçaklarına ve kullanıcı bilinçlendirmesine ilişkin yönetici becerilerini üst düzeye çıkarması gerekmektedir. Tablo 4'te İstanbul su kaybı bileşenleri gösterilmektedir. Tablo 4'te İstanbul'un 2008-2021 yıllarına ait SSDT'den elde edilen veriler ile su kaybının kaynaklandığı yerler gösterilmektedir. Toplam su kayıpları, sisteme giren su miktarının izinli su tüketiminden çıkarılmasıyla bulunmaktadır. Su kaybı idari ve fiziki kayıpların toplamıdır.

Tablo 4. İstanbul'un Gelir Getirmeyen Su [Su Kayıpları] (2008-2021)

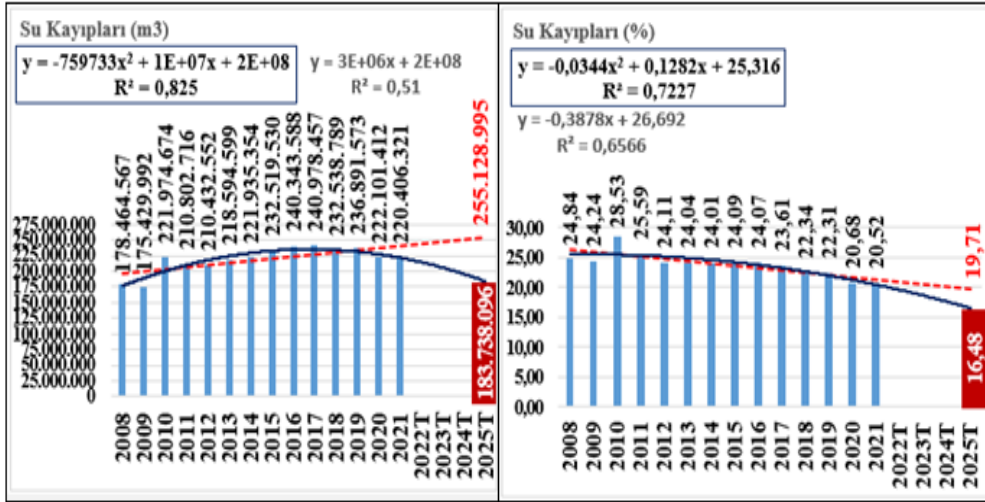
Yıllar	İdari Kayıplar				Fiziki Kayıplar				Gelir Getirmeyen Su (Su Kayıpları)	
	İzinsiz Su	Tüketilen %	Sayaçlardaki Ölçüm Hataları	%	Temin ve Dağıtım Hatları, Servis Bağlantılarında Oluşan Kayıp	%	Meydana Gelen Kaçak ve Taşmalar	%	( $\Sigma M^3$ )	%
2008	0	0,0	0	0,0	0	0,0	0	0,0	178.464.567	24,8
2009	0	0,0	0	0,0	0	0,0	0	0,0	175.429.992	24,2
2010	0	0,0	0	0,0	0	0,0	0	0,0	221.974.674	28,5
2011	0	0,0	0	0,0	0	0,0	0	0,0	210.802.716	25,5
2012	0	0,0	0	0,0	0	0,0	0	0,0	210.432.552	24,1
2013	0	0,0	0	0,0	0	0,0	0	0,0	218.594.599	24,0
2014	19.158.774	2,1	0	0,0	202.776.580	21,9	0	0,0	221.935.354	24,0
2015	405.066	0,0	19.303.108	2,0	205.107.692	21,3	7.703.664	0,8	232.519.530	24,0
2016	441.465	0,0	19.969.343	2,0	210.029.204	21,0	9.903.576	1,0	240.343.588	24,0
2017	0	0,0	22.802.169	2,2	206.258.454	20,2	11.917.834	1,2	240.978.457	23,6
2018	0	0,0	20.819.307	2,0	204.357.921	19,6	7.361.561	0,7	232.538.789	22,3
2019	0	0,0	24.394.820	2,3	211.094.753	19,9	312.800	0,1	236.891.573	22,3
2020	0	0,0	21.482.680	2,0	200.387.747	18,7	230.985	0,0	222.101.412	20,7
2021	0	0,0	21.479.807	0,0	198.926.514	18,5	0	0,0	220.406.32	20,5

**Kaynak:** İSKİ Faaliyet Raporları, (2008-2021)

[2008-2013 yılları arasında Gelir Getirmeyen Su, İdari Kayıplar ve Fiziki Kayıpları ayırımına tabi tutulmamıştır.]

İstanbul'da 2000 yılında su kaybı %36,76 iken, 2014-2019 döneminde su kayıpları %24-22 düzeyinde gerçekleşmiştir. İSKİ, 2020 yılından sonra ise su kaybı bilincinin ön plana çıkarmış ve 2022 sonu itibarıyla su kaybı oranını %19,45 olarak tespit etmiştir (İBB, 2023). Şekil 6'da İstanbul'un yıllara göre su kayıpları gösterilmektedir. 2008-2021 dönemlerinde gerçekleşen su kayıpları göz önünde bulundurularak ve Excel programından yararlanılarak oluşturulan polinom ve doğrudan denklemlerle 2025 yılının su kayıpları tahmini yapılmıştır. 2022 yılı su kaybının %19,45 oranında gerçekleşmesi ile polinom denklemi ile hesaplanan %16,48 oranına ulaşma olasılığı yükselmektedir. İSKİ'nin su kayıp hedefini %15 olarak belirlemiş olması da tahmin edilen %16,48'i desteklemektedir.

Şekil 6. İstanbul'da Yıllara Göre Su Kaybı Miktarları ve Oranları (2008-2021)



Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

Gelir getirmeyen su ile iki boyut birlikte değerlendirilmelidir. Bunlardan ilki kıt olan bir kaynağın elde edilmesi için verilen çabanın gerekli teknik önlemlerin alınmaması nedeniyle yok edilmesidir. Gelir getirmeyen su dünyanın birçok yerinde gerekenden çok daha fazla su çıkarılmasını gerektirmekte ve sonuç olarak su rezervleri aşırı kullanılmaktadır (Ress ve Roberson, 2016: 86). İkinci boyut ise kaynağın elde edilme sürecinde katlanılan maliyetler ile su kaybı sonucunda vazgeçilen gelirdir. İki boyutta insanların geleceği açısından önemlidir. Kaynaklar sınırlıdır ve birini diğerine tercih ettiğinizde diğer seçenekten vazgeçilmiş olur. Arzu edilen bir kaynağı elde etmek için bir kaynaktan vazgeçmeyi gösteren süreç ve dolayısıyla vazgeçilen şeyin feda edilmiş olan net kazancı elde edilen şeyin *fırsat (alternatif) maliyeti* olarak adlandırılır (Büyükmirza, 2019). Maliyetler ve kazançlar karar vermenin kilit unsurlarıdır. Bir anlamda fırsat maliyeti, farklı bir hareket tarzının seçilmesi nedeniyle potansiyel olarak kaybedilen avantajdır. Alternatif olarak, tercih değişikliği nedeniyle potansiyel bir avantajdan vazgeçtiği söylenebilir. Bir şeyin gerçek maliyeti, onu elde etmek için vazgeçilmesi gereken şey/şeylerdir (Khatabook, 2023).

Gelir getirmeyen su miktarı İSKİ açısından fire niteliğindedir ve fire maliyeti, su kaybının tespit maliyeti, bakım ve onarım maliyeti, su kaybını önlemeye yönelik yapılan koruma ve yönetim maliyetleri *abonenin maliyeti* olarak kabul edilmektedir. Fırsat maliyeti bakış açısıyla "su kaybı nedeniyle satılamayan sudan elde edilecek gelir kaç TL'dir?" sorusuna yönelik bir hesaplama yapıldığında, GGS kaybı maliyetinin önemi daha net bir şekilde ortaya konulabilmektedir. GGS fırsat maliyetini hesaplayabilmek için gerekli olan veriler Tablo 5'te verilmektedir.

İSKİ'nin 2008-2021 dönemlerine ilişkin Faaliyet Raporları'nda yer alan Temel Mali Tablolara İlişkin Açıklamalar bölümünde yer alan "Su Hizmetlerine İlişkin Kurumlar Hasılatı" başlığındaki "Su (Şebeke) Satışları" abonelerden sağlanan su geliri olarak kabul edilmiştir. Su (Şebeke) Satışları, Tablo 5'teki (b) sütununda verilmektedir.



Tablo 5. İSKİ Gelir Getirmeyen Suyun Fırsat Maliyeti Verileri (2008-2021)

	a	b	c	d	e	f
Yıllar	Abone Sayısı	Yıllık Su (Şebeke) Satış Geliri (TL)	Sisteme Girilen Su Miktarı (m <sup>3</sup> )	Yıllık su tüketim miktarı (izinli tüketim) (m <sup>3</sup> )	Gelir Getirmeyen Su Miktarı (m <sup>3</sup> )	Gelir Getiren Su Miktarı (m <sup>3</sup> )
2008	4.704.949	1.678.889.676,42	718.346.790	539.882.223	178.464.567	539.882.223
2009	4.840.405	1.377.160.558,34	723.656.000	548.226.008	175.429.992	548.226.008
2010	4.959.872	1.611.412.956,22	778.027.361	556.052.687	221.974.674	556.052.687
2011	5.084.772	2.017.879.992,34	823.749.364	612.946.648	210.802.716	612.946.648
2012	5.365.047	2.332.611.697,22	872.936.475	662.503.923	210.432.552	662.503.923
2013	5.561.228	2.740.988.265,59	909.454.169	690.859.570	218.594.599	690.859.570
2014	5.753.966	3.053.421.507,15	924.448.577	702.513.223	221.935.354	702.513.223
2015	5.939.062	3.475.560.460,10	965.155.404	732.635.874	232.519.530	732.635.874
2016	6.101.133	3.803.825.018,97	998.622.617	758.279.029	240.343.588	758.279.029
2017	6.303.040	4.308.932.830,14	1.020.647.179	779.668.722	240.978.457	779.701.778
2018	6.428.080	4.877.097.018,03	1.040.965.331	808.426.542	232.538.789	808.426.542
2019	6.514.780	4.143.911.117,81	1.061.769.837	824.878.264	236.891.573	824.878.264
2020	6.606.981	4.241.936.762,78	1.074.133.977	852.032.565	222.101.412	852.032.565
2021	6.723.824	5.063.809.267,18	1.073.990.361	853.584.040	220.406.321	853.584.040

Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

İSKİ'nin 2008-2021 dönemine ilişkin fırsat maliyeti hesaplanmaları Tablo 6'da verilmektedir.

Tablo 6. İSKİ Gelir Getirmeyen Suyun Fırsat Maliyeti Hesaplaması 2008-2021

	g	h	i	k	
Yıllar	Abone başına ortalama GGS miktarı (yıllık)	m <sup>3</sup> başına ortalama şebeke su satış geliri (₺/m <sup>3</sup> )	Abone başına ortalama tahmini GGS Geliri (₺/m <sup>3</sup> )	Tahmini toplam fırsat maliyeti (GGS geliri)	Fırsat maliyeti (%)
	$e \div a$	$b \div f$	$g \times h$	$i \times a$	$k \div b$
2008	37,93 m <sup>3</sup> /a	3,11 ₺/m <sup>3</sup>	117,96 ₺/a	554.977.190,17 ₺	%33,1
2009	36,24 m <sup>3</sup> /a	2,51 ₺/m <sup>3</sup>	91,04 ₺/a	440.685.524,23 ₺	%32,0
2010	44,75 m <sup>3</sup> /a	2,90 ₺/m <sup>3</sup>	129,70 ₺/a	643.271.535,23 ₺	%39,9
2011	41,46 m <sup>3</sup> /a	3,29 ₺/m <sup>3</sup>	136,48 ₺/a	693.983.049,79 ₺	%34,4
2012	39,22 m <sup>3</sup> /a	3,52 ₺/m <sup>3</sup>	138,10 ₺/a	740.912.491,58 ₺	%31,8
2013	39,31 m <sup>3</sup> /a	3,97 ₺/m <sup>3</sup>	155,95 ₺/a	867.274.995,96 ₺	%31,6
2014	38,57 m <sup>3</sup> /a	4,35 ₺/m <sup>3</sup>	167,65 ₺/a	964.625.520,08 ₺	%31,6
2015	39,15 m <sup>3</sup> /a	4,74 ₺/m <sup>3</sup>	185,73 ₺/a	1.103.052.298,35 ₺	%31,7
2016	39,39 m <sup>3</sup> /a	5,02 ₺/m <sup>3</sup>	197,61 ₺/a	1.205.657.704,12 ₺	%31,7
2017	38,23 m <sup>3</sup> /a	5,53 ₺/m <sup>3</sup>	211,29 ₺/a	1.331.739.921,62 ₺	%30,9
2018	36,18 m <sup>3</sup> /a	6,03 ₺/m <sup>3</sup>	218,24 ₺/a	1.402.866.154,79 ₺	%28,8
2019	36,36 m <sup>3</sup> /a	5,02 ₺/m <sup>3</sup>	182,67 ₺/a	1.190.063.632,31 ₺	%28,7
2020	33,62 m <sup>3</sup> /a	4,98 ₺/m <sup>3</sup>	167,36 ₺/a	1.105.756.027,80 ₺	%26,1
2021	32,78 m <sup>3</sup> /a	5,93 ₺/m <sup>3</sup>	194,46 ₺/a	1.307.540.345,79 ₺	%25,8

Kaynak: İSKİ Faaliyet Raporları, (2008-2021)

Tablo 6'nın (g) sütunu için yapılan 2021 yılına ilişkin örnek hesaplamada, abone başına ortalama gelir getirmeyen su miktarı aşağıdaki formül yardımıyla 32,78 m<sup>3</sup>/abone olarak hesaplanmaktadır.

$$\begin{aligned}
 [g]: \quad & \text{Abone Başına Ortalama GGS Miktarı} = \text{Yıllık GGS Miktarı} \div \text{Abone Sayısı} \\
 & \text{Abone başına ortalama GGS Miktarı(2021)} = 220.406.321 \text{ m}^3 \div 6.723.827 \text{ abone} \\
 & = 32,78 \text{ m}^3/\text{a}
 \end{aligned}$$

İSKİ'nin gelir getiren şebeke satış geliri üzerinden abone başına ortalama satış geliri hesaplaması, yıllık su satış gelirlerinin gelir getiren su miktarına bölünmesi ile belirlemektedir. Tablo 6'nın (h) sütunu için yapılan 2021 yılına ilişkin örnek hesaplamada, abone başına ortalama gelir getiren su satış geliri aşağıdaki formül yardımıyla 5,93 ₺/m<sup>3</sup> olarak hesaplanmaktadır.

$$\begin{aligned}
 [h]: \quad & \text{m}^3 \text{ Başına Ortalama Şebeke Su Satış Geliri} = \frac{\text{Yıllık Su Satış Gelirleri}}{\text{Gelir Getiren Su Miktarı}} \\
 & \text{m}^3 \text{ Başına ortalama şebeke su satış geliri (2021)} = \frac{5.063.809.267,18 \text{ ₺}}{853.584.040 \text{ m}^3} \\
 & = 5,93 \text{ ₺/m}^3
 \end{aligned}$$

Şebeke suyu konut, işyeri, tarım gibi farklı kesimlere farklı tarifelerle sunulan bir hizmettir. Bu nedenle her bir abone grubunun toplam gelire katkısı farklıdır. Ancak İSKİ abone bazında veri paylaşımında bulunmaması nedeniyle, elde edilen gelirin dağılımı yapılamadığı için abone başına gelir *ortalama* olarak hesaplanmaktadır. Dolayısıyla abone başına tahmini GGS kaybı geliri ortalama olarak tespit edilmektedir. Tablo 7'nin (i) sütunu için yapılan 2021 yılı için, abone başına ortalama gelir getirmeyen su geliri 194,46 ₺/abone olarak örnek hesaplama yapılmaktadır.

$$\begin{aligned}
 [i]: \quad & \text{Abone Başına Ortalama Tahmini GGS Geliri} = \text{Abone Başına Ortalama GGS Miktarı} \times \text{m}^3 \text{ Başına Ortalama Şebeke Su Satış Geliri} \\
 & \text{Abone Başına Ortalama Tahmini GGS Geliri} = 32,78 \text{ m}^3/\text{a} \times 5,93 \text{ ₺/m}^3 \\
 & = 194,46 \text{ ₺/a}
 \end{aligned}$$

GGS kaybı geliri (i), İSKİ'nin ilgili yıldaki gelir getiren su satışları tarifesi temel alınarak hesaplanan bir değerdir. Gelir getirmeyen su kayıplarının ortadan kaldırılması veya optimal seviyeye indirilmesi ile iki durum ortaya çıkacaktır. Bunlardan ilki talep kadar kaynaktan su çekileceği için kaynak yaratma çabası ve maliyeti ortadan kalkacaktır. İkinci durum ise kayıpları önleme ve bakım-onarım gibi maliyetler en aza ineceği için maliyet tasarrufu sağlanacaktır. Her iki durum içinde fırsat maliyetinin tespiti önem arz etmektedir.

$$\begin{aligned}
 [k]: \quad & \text{Fırsat Maliyeti (GGS Geliri)} = \text{Abone Başına Ortalama GGS Geliri} \times \text{Abone Sayısı} \\
 & \text{Fırsat Maliyeti (GGS Geliri)}_{(2021)} = 194,46 \text{ ₺/a} \times 6.723.824 \text{ a} \\
 & = 1.307.540.345,79 \text{ ₺}
 \end{aligned}$$

İSKİ GGS kayıpları nedeniyle vazgeçmek zorunda kaldığı fırsat maliyeti Tablo 6'nın (k) sütununda hesaplanmaktadır. Buna göre fırsat maliyeti, abone başına ortalama GGS kaybı gelirleri ile abone sayısı çarpılarak belirlenmektedir. İSKİ'nin 2021 yılı verilerine dayanarak yapılan hesaplamada toplam fırsat maliyeti 1.307.540.345,79 ₺'dir.

## 5. Sonuç

Su kayıplarını azaltmaya yönelik yapılan tüm strateji ve planlara standart su dengesi tablosunda yer alan tüm bileşenler dâhil edilmelidir. SSDT'nin her bir hücresi ve GGS kayıp seviyesi, verimliliğin temel bir performans göstergesi niteliğindedir. GGS kayıplarını azaltmaya yönelik olarak yapılan GGS ekonomik miktar tespiti ile hedeflenen orana ulaşmada önemli bir göstergedir. Su dengesi bileşenlerin analiz edilmesi ve sonuçların yorumlanması açısından farkındalık oluşturabileceği düşünülmektedir. Türkiye'de su kaybına yönelik çalışmalar 2014 yılından itibaren mevzuat çerçevesinde devam etmekle birlikte GGS kayıpları istenilen düzeye ulaşamamıştır. Su idareleri finansal sürdürülebilirliği, satış kayıpları ve artan işletme maliyetleri nedeniyle ciddi şekilde zarar görmektedir (Elkharbotly vd., 2022: 13). Tarım ve Orman Bakanlığı'nın 2022 yılındaki açıklamasına göre 2021 yılında Türkiye genelinde su kayıp oranı %33,54 iken, GGS kayıp oranı %38,67'dir. Türkiye'de 2028 yılına kadar büyükşehirlerde ve 2033 yılına kadar da diğer şehirlerde su kayıp oranının %25'e indirilmesi hedeflenmektedir. Su kaybı oranı ortalamasının %25 seviyesine düşürülmesi halinde bugün elde edilebilecek su kazanımı Ankara'nın bir yıllık su ihtiyacını karşılaması beklenmektedir (Tarım ve Orman Bakanlığı, 2022). Ayrıca bu kazanım yaklaşık yıllık 4 milyar TL milli gelir kaybını engelleyeceği tahmin edilmektedir (Özkan ve Bağcı, 2019). Gelir getirmeyen suda en önemli boyut, su kaynağı elde etmede katlanılan maliyetler ile su kaybı sonucunda vazgeçilen gelirdir. Bu kapsamda su idarelerinin geleceğe yönelik yapacakları performans tahminlerini belirlemede Excel programını bir araç kullanılması da önerilmektedir.

Teknik anlamda su kaybının sıfır olamayacağı iddia edilmektedir. Ancak Singapur ve Hollanda gibi ülkelerde su kayıp oranının %4'e kadar indirildiği görülmektedir. İstanbul'un 2021 yılının su kayıp oranı %20,52'dir. İki oran arasındaki fark olan %16,52'lik pay yönetilemeyen maliyet veya vazgeçilen kazanç (su) olarak nitelendirilebilir. %20,52 su kayıp oranının %4'e düşürülmesi ile aradaki fark, fırsat maliyet kavramını yaratacaktır. Çalışmada su kayıp oranı, GGS kayıp oranına eşit olduğu varsayılmaktadır. İstanbul'un 2021 yılı GGS kayıp oranının %0 olması durumunda GGS kayıp miktarı 220.406.321 m<sup>3</sup> iken ve %4 olması durumunda ise orana bağlı olarak hesaplanırsa 42.964.195 m<sup>3</sup> olacağı tahmin edilmektedir. Böyle bir durumda GGS kaybının %0 olması durumunda 220.406.321 m<sup>3</sup> ve %4 olması durumunda da 177.442.126 m<sup>3</sup> fırsat maliyetine konu olan miktar olacaktır. İstanbul için GGS kaybının %0 olması durumundaki ki fırsat maliyeti 1.307.540.345,79 ₺ olarak hesaplanmaktadır. GGS kayıp oranının %4'e indirilmesi durumunda ise fırsat maliyeti 1.052.659.186,77 ₺ olacaktır. Liemberger ve Wyatt (2018) GGS kayıp maliyetini suyun üretimi ve yönetimi için katlanılan maliyetler üzerinden hesaplamaktadır. Oluşturulan bu modele göre iyimser bir yaklaşımla suyun metreküp başına maliyeti 0,31 \$ olacağı öngörülmektedir. Bu birim maliyet üzerinden İstanbul için yapılacak GGS kayıp maliyeti hesaplamasında; GGS kayıp oranının %0 olması durumunda 1.264.030.251 ₺ (220.406.321 m<sup>3</sup> × 0,31\$ × 18,50 ₺) ve %4 olması durumunda 1.017.630.593 ₺ (177.442.126 m<sup>3</sup> × 0,31\$ × 18,50 ₺) olacaktır (1\$ = 18,50 ₺ olarak kabul edilmektedir). Hesaplanan GGS kayıp değerlerinin birbirine oldukça yakın olması, modeller arasında tutarlılık olduğunu göstermektedir. GGS kayıp fırsat maliyetine sadece finansal bir boyuttan bakılmamalıdır. Aynı zamanda GGS kayıpları azaltılması; artan kıtlık ve iklim değişikliği döneminde suya ulaşmada yaşanan sıkıntıyla birlikte ortaya çıkacak güvenlik, su kalitesi, toplum sağlığı sorunları ve ayrıca temiz içme suyunun lüks mal özelliği

kazanarak suya ulaşmada yaşanacak sıkıntı gibi birçok olumsuzluğun aşılmasında önemli bir etken rol oynayacaktır. GGS kaybı nedeniyle vazgeçilen gelir (fırsat maliyeti); işletmenin ziyan ettiği GGS üretim maliyeti, denetim, bakım, GGS yönetim maliyeti, müşteri memnuniyetsizliği, hizmet adaletsizliği, hizmet yetersizliği, su kalitesi sorunu, yeni sisteme su girişi sağlama yatırımları vb. gibi birçok somut ve soyut maliyeti ifade etmektedir.

İstanbul örnekleme temelinde kurulan modelin, diğer illerin GGS kayıp miktarları üzerinde yapılacak çalışmalarda da benzer sonuçlar sağlayacağı düşünülmektedir. Bununla birlikte, daha fazla veri ve daha doğru veri hesaplamaların iyileştirilmesine yardımcı olacaktır.

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### Extended Summary

#### Prediction of Non-Revenue Water Cost Via Opportunity Cost Modeling Approach for Sustainable Water

In Istanbul, water losses occur in transmission and distribution systems while water is brought to the user from its source. Water losses cause economic, environmental, and social negativities. The already limited water resources need to be used efficiently. The problem of the research is whether future water control can be achieved by examining the standard water balance table data. The component amounts of the standard water balance and the factors causing water loss vary according to the characteristics of the network system and cities. The important thing in this regard is to control the water, find the causes of loss, and offer solutions. In this study, water losses in 2025 are estimated with polynomial and direct equations formed by using the Excel program according to the amount of water lost in the 2008-2021 periods. Accordingly, if the water loss in 2022 occurs at the rate of 19.45%, the probability of reaching the rate of 16.48% calculated by the polynomial equation increases. The fact that İSKİ has determined the water loss target as 15% also supports the estimated 16.48%. In this study, it is assumed that the water loss rate is equal to the non-income lost water rate. While Istanbul's 2021 RNW loss rate is 0%, the amount of non-revenue lost water is 220,406.321 m<sup>3</sup>. If this value is 4%, non-revenue lost water is estimated to be 42,964,195 m<sup>3</sup>.

Accordingly, if the water loss of 2022 is 19.45 %, the possibility of reaching 16.48%, calculated by the polynomial equation, increases. In addition, the opportunity cost is calculated as 1,307,540,345.79 ₺ at the RNW loss of 0%. It is claimed that water loss cannot be zero technically. In developed countries such as Singapore and the Netherlands, the water loss rate is reduced to 4 %. In the case of reducing the non-revenue lost water rate in Istanbul to 4%, the opportunity cost will be 1,052,659,186.77 ₺. The lost water rate in Istanbul in 2021 was 20.52%. The difference between the two ratios, 16.52%, can be described as an unintended cost or abandoned earnings (water). With the reduction of the 20.52% water loss rate to 4%, the difference is the opportunity cost. The difference of 16.52%, which is the difference between the two ratios, can be characterized as unmanageable cost or forgone gain (water). The difference between reducing the 20.52% water loss rate to 4% is the opportunity cost concept. Reducing non-revenue water enables water services to expand and improve, improve financial performance, make cities more attractive, increase climate resilience and reduce energy consumption. It offers superior cost-effectiveness compared to increasing the non-revenue water supply in a water-scarce environment. Revenues from saved water will improve a service provider's bottom line, while lower water withdrawals will protect Istanbul's future water and ensure water control. According to the findings, all components in the standard water balance table should be included in the strategies and plans to reduce losses. Each of its components in the table and the loss level of non-revenue water is a key performance indicator of efficiency. The RNW, done to reduce non-income water losses, is an important indicator in reaching the targeted rate with economic quantification. It is thought that it can create awareness in terms of analyzing the water balance components and interpreting the results. In this context, it is recommended to use the Excel program as a tool to determine the future performance estimates of water administrations.

The table content of standard water balance, proposed by the American Water Work Association (AWWA) and International Water Association (IWA) in 2003, includes non-revenue water components that enter the system but are not charged. It has been determined that the standard water balance table, made compulsory to be prepared by the administrators with the communiqué published by Turkey in 2014 and 2015, was not prepared regularly by the municipalities or was not prepared and presented to the public. This situation has been the starting point in determining the research problem in the study. The problem of this research is whether future water control can be achieved by examining the standard water balance table data. The research aims to reveal that this differs depending on the research problem. In this study, a data set was formed using the İBB activity reports, the İBB open data portal, and the relevant data of TUIK, and it was assumed that the obtained data were valid and reliable. The prediction was made for the 2022-2030 period with the equation provided over the "polynomial" from the Excel "trendline" options. These predicted data obtained by polynomial equation were close to the estimated values made by İSKİ for five years in the 2020-2040 period. The lost opportunity cost of RNW should not be viewed only from a financial perspective. At the same time reducing GGS losses, it will enable to overcome many negativities such as security, water quality, and public health problems that will arise with the difficulty in accessing water during the increasing famine and climate change period, as well as the troubles of be experienced in reaching water by gaining the quality of clean drinking water as a luxury good. The results of this investigation will contribute to the understanding of the RNW loss amounts of other provinces.

## A Critical View About the Historical Change Line of the Development Path of the Turkish Economy: From Statist Development to State Capitalist Development

Betül Sarı Aksakal<sup>1</sup> 

<b>Türkiye Ekonomisinin Kalkınma Patikasının Tarihsel Değişim Çizgisine Eleştirel Bir Bakış: Devletçi Kalkınmadan Devlet Kapitalizmi Kalkınmaya</b>	<b>A Critical View about the Historical Change Line of the Development Path of the Turkish Economy: From Statist Development to State Capitalist Development</b>
<b>Öz</b> Çalışmada Türkiye Cumhuriyeti'nin kuruluş yıllarına uzanan süreçten günümüze kalkınma ideolojisi ve siyaseti bağlamında ortaya çıkan dönüşüm unsurları ele alınmıştır. Türkiye'deki kalkınma söylemlerinin ve politikalarının hangi özgün tarihsel-toplumsal-ekonomik-siyasal-kültürel-kurumsal-ideolojik olgular sonucunda ortaya çıktığı konusunda birtakım teorik araçlar sunulması hedeflenmiştir. Türkiye'nin kalkınma hikâyesinin yarattığı farklı dönemler ve onların inşa ettiği farklı kalkınma söylemleri ve dinamiklerinin portreleri konunun bir bütünlük içinde anlaşılmasına katkıda bulunmuştur. Tüm bu bağlamlarda, Türkiye ekonomisinin kuruluşundan bu yana izlediği kalkınma politikalarındaki dönüşümün, devletçi kalkınmadan devlet kapitalizmi kalkınmaya doğru evrilen bir anlayışı yansıttığı düşünülmektedir.	<b>Abstract</b> In the study, the transformation elements are disputed that emerged in the context of the development of ideology and politics from the period of the establishment of the Republic of Turkey to the present. It is aimed to present some theoretical devices on which development discourses and policies in Turkey came into view as a result of the original historical-social-economic-political-cultural-institutional-ideological features. The different periods of Turkey's development story, the development discourses they built, and the portraits of their dynamics contributed to grasping the subject matter. In all these contexts, it is thought that the transformation in the Turkish economy's development policies has followed since its foundation divulges a condition that has evolved from statist development to state capitalist development.
<b>Anahtar Kelimeler:</b> Devletçi Kalkınma, İthal İkameci Sanayileşme, Planlı Ekonomi, Serbest Piyasa Ekonomisi, Devlet Kapitalizmi Kalkınma	<b>Keywords:</b> Statist Development, Import Substitute Industrialization, Planned Economy, Free Market Economy, State Capitalist Development
<b>JEL Kodları:</b> F63, O1, B2.	<b>JEL Codes:</b> F63, O1, B2.

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Tamamı yazar tarafından hazırlanmıştır.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

The 1920s embody the reflections of a period in which a new state regime was attempted to be founded among the ruins of the economic, social, political, and cultural heritage inherited from the Ottoman Empire for the Turkish economy. In this period, there was a development understanding based on industrialization to a large extent. As a result, the Turkish economy focused on building a new economic system, especially between 1923 and 1929.

By the Great Depression that broke out in 1929 and engulfed all world economies, a development approach based on a planned economy was chosen to take up in the 1930s, and dramatic breakthroughs were put into practice regarding industrialization. The ideological atmosphere comprised by Kadro Magazine around the Kemalist Ideology and the idea of planning has witnessed some radical alterations in the idea of development. The first steps of industrial infrastructure were taken in modern Turkey through Industrialization Plans.

The outbreak of the Second World War in 1939 marked the beginning of the end of the development project. The industrialization process regressed with the onset of the Second World War, and the war economy was introduced. Immediately after the transition to the multi-party system in 1946, a process occurred in which the military-civilian bureaucracy liquidated the first-period state structure of the Republic within the framework of the anti-communism paradigm. In the world order formed after the Second World War, an international division of labor was generated under American leadership. In this division of labor, the Turkish economy's task is to prioritize agriculture in the context of sectoral development, elimination of statism, and promotion of foreign capital.

After the Democrat Party came to power, led by Adnan Menderes, a development approach focused on agricultural development, a liberal trade regime based on foreign aid emerged in Turkey. In this period, the tendencies to ignorance of state interventionism and fiscal discipline have brought dramatic results. The First Stabilization Agreement that Turkey signed with the International Monetary Fund (IMF) in 1958 amid a financial crisis and May 27, 1960, Military Coup can be considered extraordinary progress that prepared Turkey's transition to the planned economy. The State Planning Organization was established in 1960, and an industrialization strategy based on import substitution and development plans was followed.

Following the 1973 oil crisis, it was understood that import substitution development policies could no longer be sustained. The effects of the transformation process of the capitalist world economy on Turkey became evident in the late 1970s. Import-substitution industrialization and planning-based development strategy, which left their mark on the Turkish economy in the 1960-80 period, started to be abandoned with the decision of January 24, 1980, after reaching its natural limits.

After January 24, 1980, decisions, liberal economic policies based on the contraction of the public sector, the strengthening of the market mechanism, and the privatization of state-owned enterprises became valid. The model, also described as the neoliberal model, paved the way for Turkey's development strategy to shift from the industrialization perspective gradually. As a result, the concept of development has almost been shelved, and the concept has begun to be subrogated by phenomena such as structural adjustment, macroeconomic stability, globalization, and deregulation.

After 1989, the Turkish economy became compatible with financial globalization with the liberalization of financial markets and financial capital movements. Therefore, the 1990s can be contemplated as a lost decade in terms of economic development for the Turkish economy. It can be argued that uncontrolled financial liberalization has an essential role in the background of this situation. The 1990s covers a period in which development discussions in the Turkish economy continued around financial issues such as foreign exchange, interest, inflation, and the stock market. The neglect of policy priorities such as socioeconomic development, structural transformation, employment, sustainable development, and fairness in income distribution brought the structural imbalances of the Turkish economy to the agenda again and again in that term.

In the 2000s, the concept of development stayed in the background of the Turkish economy. The high inflation, high-interest rates, budget deficits, high domestic and foreign debt ratios, external deficits, fluctuating unstable, and low growth rates continued to constitute the general problems of the economy. Meanwhile, the 2001 crisis set off. This crisis was regarded as a reverberation of the collapse in politics and one of the biggest crises in the history of the Republic. For the development debates in Turkey after the crisis, a period came into view in which the debates take part about the structure of the state and its role in the economy.

In light of all the facts mentioned above, the backbone of the development strategies implemented by the Republic of Turkey since its foundation and the evolution of the strategies in the historical process will be investigated in this study. In other words, the historical manifestations of the development concept and its semantic shifts will be incorporated.

In the first part of the study, the process extending to the Republic's foundation years-covering the years 1923 and 1929-is discussed. The transformation and continuity dynamics that occurred in the development thought were scrutinized in this process.

Then, after the Great Depression in 1929, the implementation of the statism strategy was comprehensively discussed with its theoretical and practical reflections on development. Finally, the conditions were touched on under which the bases of industrial infrastructure were laid in Turkey through industrialization plans.

Afterward, Turkey's liberalization process after the Second World War was discussed in detail. The Democrat Party Period, which relied on the comprehension of liberal development, has been discussed in essential respects. Subsequently, the repercussions of the development approach hinged on the import substitution industrialization strategy are encompassed, which continued to be effective between 1960 and 1980.

The January 24 Decisions have been evaluated with an analytical perspective at different stages, which ended national developmentalism in the Turkish economy and symbolized the transition to a liberal market and state-capitalist economy. Following the removal of the restrictions on international capital movements in the 1990s, a period was initiated in which financialization was carried to a more advanced level. As a natural consequence, the development concept has been ultimately shelved. In addition, the reverberations of the conjuncture, in which the structural problems of the Turkish economy were disclosed.

Then, the vision of development and macroeconomic management is fundamentally assessed, which has been embraced by the Turkish economy in the last two decades.

Eventually, this engaging structural transformation experience was interrogated and mirrored a development approach that relied on the Post-Washington Consensus's policy recommendations.

The study proceeded from the problem of how the development discourses and policies in the Turkish economy were distilled by different internal-external dynamics, institutions, and social actors under what conditions. Also, the study was based on the semantic shifts the concept of development has undergone. As a result, it has been deduced that the transformation in the understanding of the development of the Turkish economy in the historical process has switched from statist development to state capitalist development.

## **2. Reconstruction of the New Economic Regime Through the Statism**

The new republican regime, founded in 1923 on the ruins of the Ottoman Empire, witnessed radical social, economic, political, and cultural changes in Turkey. The economic status of the newly established country was as substantial as its political status. The primary development policy of this period was carved out by the idea that political independence could not be accomplished without economic independence. This issue was vigorously defended in the Lausanne Conference (1922-1923). This message was given to the whole world in an obvious way at the Izmir Economy Congress held between February 17 and March 4, 1923, and the door was opened for commercial cooperation (Atağenç, 2017; Koç, 2000). Mustafa Kemal Atatürk contended that the capitalist order is predicated on some unrealistic ideas, such as the individual isolated from society, and the socialist order, such as the state isolated from the individuals. He claimed that both orders contradicted human nature (Gencer, 2015: 276). Mahmut Esat Bozkurt, one of the economics deputies of the period, also made intelligible the economic development philosophy of the founding staff of the Republic in his speech at the Izmir Economics Congress:

"The new Turkish economy cannot be the same as any existing economic systems and policies. Pursuing a unique economic policy is necessary for our country's economic needs and the spirit of our economic history. We are not affiliated with any of the schools in economic history. We are neither from the laissez-faire nor socialist, communist, statist, and patronage schools. The new Turkey has a new school of economics, which was specified according to the new understanding of the economy. I call it the New Turkish School of Economics. Although we are not connected to any of the above-mentioned economic systems, we will not neglect to benefit from them in the direction of the needs of our country" (Cited in Bülbül, 2020: 18-19).

The determination to strengthen domestic industrialists and entrepreneurs via advantageous loans and financing opportunities from public resources, various infrastructure services, and technical support was brought forward. Turkey Industry and Mines Bank was established in 1925. Thus, economic development objectives and industrial and commercial life were used as the base. Law on the repeal of "aşar" was abolished in 1925 to relieve agricultural producers (Eroğlu, 2007: 66). İşbank was constituted in 1924 to provide investment capital to private entrepreneurs. Thus, necessary steps were taken regarding the rapid growth of the banking sector in the economy and the entry of new banks into the sector (Altıparmak, 1998: 69). The Encouragement of the Industry Law (Teşvik-i Sanayi) was enacted in 1927, which paved the way for the domestic entrepreneurial class (Erdoğan, 2022: 36). The Law granted essential privileges to entrepreneurs working in the field of industry and mining and more importantly, it offered tax exemption.

There is a widespread belief that between 1923 and 1929, the Turkish economy primarily pursued liberal development policies (See Saricoban, 2020; Şener, 2005). However, giving specific opportunities to private enterprises and not being hostile to foreign capital is not enough to qualify this period as liberal. When the policies traced in this period are checked out, it is discerned that the duties undertaken by the state are not only restricted to the production of public goods and services and to intervention in areas where the private sector is deficient but also point to the construction of an economy. Ha-Joon Chang, one of the world's leading development economists, has a similar opinion on the subject in question. In his splendid study titled *Kicking Away the Ladder: Development Strategy in Historical Perspective*, the author stated that "I learned that Mustafa Kemal Atatürk was the first world leader in implementing the state-directed development strategy" (2003: 7-8) and disclosed that a development strategy relied on statism was traced in the founding years of the Turkish economy.

In short, for the Turkish economy, the period between 1923 and 1929 can be considered the period in which a development strategy was pursued that rested upon statism. However, the Great Depression, which broke out in 1929 and gripped almost all world economies, formed the basis of the transition of Turkey's development strategy from statism to strong statism.

### **3. Alteration of the Level of Statism in Development: From Moderate Statism to the Strong Statism**

The Turkish economy was still in its infancy when it faced the Great Depression, one of the biggest crises of capitalism. However, as a result of the end of the capitulations given to the Westerners by the Lausanne Treaty in 1929 and the ascendancy of Keynesian economics-which was looking for ways out for the maintenance of the capitalist operation worldwide after the economic Depression that broke out-statist policies began to be interiorized almost all over the world. In this way, the state took a more negotious part in economic and social life.

In this respect, Turkey passed the foreign exchange control by implementing the Law Regarding the Protection of the Value of Turkish Currency in 1930. Furthermore, the Central Bank, established to regulate the money market, operated in 1931. Thus, the Republic of Turkey has reached a position to turn the wheels of the economy without foreign borrowing. The period covering 1930 and 1938 is considered one of the most dynamic processes of the Turkish economy, with an annual growth rate of 7.9% without external resources (Boratav, 2004: 42). Meanwhile, the industrialization move in the economy became acceleratingly apparent. Sümerbank (1933), Halkbank (1933), and Etibank (1935) set up as industrial facilities which have a term of references (for example, Sümerbank in the textile sector and Etibank in the mining and metallurgy field) by combining the capital provided by the state with the deposit resources collected from the public. In Atatürk's words emphasizing the importance given to industrialization in the economy:

"Industrializing is among our greatest national causes. We will establish and operate all kinds of large and small industries so they can work and go on. This is necessary to evaluate our products, especially for homeland defense, and to reach the most advanced and prosperous Turkey by the shortest route" (Cited in Kalaycı, 2009: 171).

The Kadro Movement in Turkey engendered an intellectual ambiance in the 1930s by synthesizing the planning approach bearing traces of socialism on the axis of a Kemalist founding ideology. Thanks to the influence of this ambiance, Turkey prepared industrial plans in this period and started to put them into effect. As a result, the First Five-Year Industrial Plan (1934-1938) was made applicable in 1934. In the letter of presentation of the plan to the Prime Minister, it was highlighted that the domestic industry and the domestic sector dependent on the state would play an extremely crucial role in the generation of industrial entrepreneurship:

"Such a state industry would offer private industrialists and entrepreneurs the opportunity to establish and develop a profitable industry. An iron products industry established under the state's leadership would provide semi-finished products to private industrialists and entrepreneurs. In their factories, they could transform this into nuts, screws, cast iron, needles, and machine tools. Our new weaving industry would provide an opportunity for the development of our still-running private enterprises. On the other hand, it would offer new opportunities for developing cotton and yarn industries. A certain amount of capital would be accumulated through the implementation of our industrial program and, consequently, the expansion in the volume of business that would participate in the economic life of our country. This capital accumulation would necessarily search for new investment areas in the industry. Undoubtedly, this derivative industry, which we have tried to describe above, would advance very rapidly" (Cited in Günçe, 1981: 119).

The plan has been prepared to improve Turkey's position in the global economic division of labor, which appears to be a peripheral country dependent on exporting raw materials and agricultural products. In this framework, the plan fastened on establishing strategically important and high-cost institutions by the state and, in this way, the advancement and acceleration of industrial production. Within this framework, industrial facilities were founded in five sectors (weaving, mineral processing, paper, chemical, and soil industries) (Özyurt, 1981). In addition, the state constituted around twenty industrial facilities until the 1940s (Yücel, 2015).

Under the influence of the success reaped from implementing the First Five-Year Industrial Plan, preparations for the Second Five-Year Industrial Plan (1938-1942) were started to get ready. A share of the state budget was allocated to fund the plan. In addition, loans were obtained from Sümerbank, İş Bankası, and Ziraat Bankası, and technical and financial assistance was received from the Soviet Union (Özder, 2017: 143). The plan's primary objective is first to enlarge the production of products such as sugar, flour, and textile; and afterward to promote the iron-steel and paper industries. However, implementing this plan promulgated just before the Second World War outbreak was not possible due to the extraordinary conditions of the period.

Although Turkey did not enter the war, it experienced almost all the negativities of the war. Moreover, owing to the size of the young male population enlisted in arms, the adverse effects such as loss of production in agriculture, heavy taxes, high cost of living, and food shortages put the people in very rough conditions. In order to overcome these difficulties, Turkey had to enact and implement two laws that are still debated today: the Wealth Tax Law and the National Protection Law (Öztürk, 2013). These can be contemplated as two critical legal initiatives that shook the basic parameters of state-private sector relations in the

wartime political economy and left lasting marks in the collective memories of Turkish entrepreneurs (Boratav, 1974: 326-330, 1982: 247; Coşar, 2003: 7).

Regarding the issues discussed, it is necessary to incorporate the Law for Providing Land to Farmers. The Law enacted in 1945 covered a radical attempt to expropriate large-scale private land holdings and distribute them to landless farmers. The Law encountered strong opposition from large landowners, industrialists, and economically empowered Anatolian merchants in the Grand National Assembly of Turkey. This draft law, which undermines the security of private property, could not be implemented after the rising reactions and dropped from the political agenda. However, the mentioned affair constituted one of the fundamental milestones to the foundation of the Democrat Party (Kayıran and Metintaş, 2018: 647; Tezel, 2000: 264). The one-party regime led by the Republican People's Party and the development strategy based on intense state intervention entered an existential crisis of legitimacy. In pursuit of the end of the Second World War, in 1946, Turkey got inside the multi-party system.

In the bipolar world order of the U.S. and the Soviet Union after the Second World War, Turkey chose the side of the U.S., in other words, the Western bloc (Erol, 2009: 345-358). These years are characterized by when Turkey's integration into liberal economic policies and the capitalist system under the guidance of American capital took place. Following the Truman Doctrine accepted in 1947, Marshall Aid to Turkey was initiated. Through the Marshall Aid, Turkey's foreign trade policy underwent a change that embraced free trade and open economy conditions (Göktepe and Seydi, 2015: 203-206). As a result, the Turkish economy gradually abandoned the economic system founded upon the basis of statist development and switched to policies based on agricultural mechanization rested against foreign resources in national development (Boratav, 2004: 94). The number of foreign loans and aid received in the period between 1947-50, amounting to approximately 391 million dollars, surpassed the total foreign aid and loans received in the first quarter century of the Republic (Tezel, 1982: 205). This dramatic increase also indicates a radical departure from goals such as policy autonomy and economic sovereignty, which were given significance in the development understanding of the early Republican period (1923-1929).

The Democrat Party was founded in 1946 when Turkey became a multi-party system. The party landslide in the 1950 General Elections. The transition to a multi-party system and the Democrat Party's coming to power for ten years (1950 to 1960) also marked a breaking point for the dominant development discourse in Turkey.

#### **4. From Interwar Statism to Integration within the World Economy Through the Agriculture**

After the Democrat Party came to power in the 1950 elections, the single-party period that had been going on since the proclamation of the Republic concluded. The authoritarian Kemalist prescriptions, which were rated as obsolete for the Democrat Party administration, are no longer regarded as legitimate in the free world that has stepped into the orbit of development. The proposed development model is leaned on a perceptive that is shaped within the framework of the ideology of the American and comprador bourgeoisie but takes its quality from the Modernization Theory (Boran, 2021: 114-115).

In this period, anti-communist ideology was around and began constructing its internal and external apparatuses through the ideology of the Cold War. After the IMF and World

Bank, Turkey was affiliated with the North Atlantic Treaty Organization (NATO) in 1952 and clarified its position in the Western bloc. The Turkish economy benefited from technological developments in agriculture with the aid and grants of the U.S. It has been an endeavor to integrate within the new international division of labor organized around the hegemonic power of the U.S. through the agricultural sector (Keyder, 2008: 12). There has been a switch from a state-led development discourse relied on industrialization to a new development discourse that underscores liberalism and incorporation into world markets through the export of agricultural products.

The impressive advancement in this strategy's presentation is the 1951 report of James Barker sent to Turkey by the World Bank. The Barker Report pointed out that Turkey's comparative advantage in the global economic system lies in the modernization of agricultural production and the development of agriculture-related industrial sectors (Emiroğlu et al., 2012: 81-82). Notably, the largest share of the investments proposed in the report is allocated to transportation, public works, and agriculture, and the lowest share is allocated to education and health (Yılmaz, 2014: 131-132). In the light of the neoclassical school of economics, the belief that developing countries should focus on modernization and productivity increases in agriculture and criticisms of Turkey's weakness in this area reverberates in the following statements of the Barker Report:

"This report has consistently emphasized the importance of agriculture in development initiatives and that Turkish authorities have traditionally ruled out this. However, since modernization in agriculture constitutes one of the main prerequisites for industrial development and the main channel through which productivity increases can be achieved, most of the public investment resources in Turkey should be allocated to agriculture in the coming period" (IBRD, 1951: 2).

However, the downfalls in the prices of raw materials and agricultural products in global markets after 1954 extenuated Turkey's agricultural export revenues. This situation triggered high inflation and a period of instability. Rapid growth was tried to be sustained, accompanied by short-term policy interventions and public finance, which broke off from fiscal discipline (Takim, 2012: 175-176). The period's primary macroeconomic indicators also exhibit this diagnosis's accuracy. At the end of the agricultural economic recovery period in 1954, the annual growth rate decreased from 13 percent to 4 percent, while the foreign trade deficit increased to eight times the 1950 level. At the end of 1960, Turkey's foreign debt rose to 1.5 billion dollars, corresponding to one-quarter of the national income (Zürcher, 2000: 332).

While all these negativities paved the way for the end of the Democratic Party's power through a military coup in 1960, a white page was opened towards a statist development strategy based on protectionism and the domestic market, including the institutionalization process of the post-1960 planning regime.

##### **5. Institutionalization Process of the Planning Regime: Transition to the Statist Development Strategy**

The new development framework emphasized a planned economy, which was put forward after the military coup that ended the Democrat Party's rule. While this new perspective makes the state the most important representative of economic and social transformation, the Keynesian Revolution was also highlighted, profoundly affecting the U.S. and Western Europe in the 1950s and 1960s. In this context, the State Planning Organization

was established to assist and advise the government in determining economic, social, and cultural policies and targets in coordinating activities related to economic policies. Furthermore, by attaching the statute "Preparing development plans is the fundamental duty of the state" to the 1961 Constitution, a constitutional basis was added to the planning phenomenon (Cited in Öztürk, 1966: 3148).

The State Planning Organization has fulfilled the conditions for the formulation phase of the reform initiative, which has a reputation as a school of elite bureaucrats firmly committed to developmental ideals (Boratav, 2008: 128). In this direction, four successive development plans were designed between 1963 and 1983, which left a radical intellectual impact on Turkish development planning. Therefore, the first five-year development plan, covering the period between 1963 and 1967, can be interpreted primarily as a representation of a break with this chaotic, unplanned, and unscheduled development approach of the 1950s:

"Today, Turkish society has a great desire for development. The painful consequences of unexpected behaviors have led to adopting planning as an indispensable way of development. There have been great developments in economic and social planning techniques worldwide. Important steps have been taken in the experience of planned development within the democratic order. In Turkey's new move, great importance is attached to evaluating the experience gained in the world" (DPT, 1963: 1).

The plan prioritized education and health services, basic infrastructure, and raising social living standards within the framework of the social state principle. Keeping with the spirit of the 1961 Constitution, a Keynesian emphasis on social justice (DPT, 1963: 3, 33, 38) has become prominent in all plans since the First Five-Year Plan. The Second Development Plan (1967-1972) took over the objectives set by the first plan and underlined the import substitution policies. In the plan, the industrial sector is characterized as the engine of economic growth:

"An average annual growth rate of 7 percent is considered an obligatory and attainable target for the Turkish economy. This level of speed is a minimum target for the Turkish nation to close the gap with the Western community of which it is a member, even in the long term. On the other hand, developments in the Turkish economy, especially in the planned period, have revealed that an average speed of 7 percent is attainable. In the plan period, it will be ensured that the industry is the driving sector of the economy. Therefore, industrialization is essential to prompt the rapid development in this period and maintain this speed by increasing it" (DPT, 1967: 628, 636).

In the first decade of import substitution industrialization, very high growth figures and significant increases in industrial production were realized. For example, industrial production increased at an average rate of 9 percent per year between 1963 and 1971 (DPT, 1973) is the most evident proof that the priority of rapid industrialization by the state was finally put into practice. However, towards the end of the decade, it became clear that import substitution industrialization was not sustainable for a long time in practice.

The 1970s encompassed a critical time when political, economic, social, and technological ruptures emerged, which prepared radical transformations for Turkey and the world. The expansion of capitalism ended with a decrease in profit rates in developed countries, the increase in investments due to industrialization in underdeveloped countries, the expansion in borrowing to finance these investments, and the oil crisis included in these negative affairs



(Gürsoy, 1989: 241). Accordingly, opinions have emerged highlighting that new economic policies and targets should be implemented to ensure the system's continuity. In addition to the oil crisis, the U.S. economy's loss of competitive advantage over emerging economic actors such as Germany and Japan, the military expenses triggered by the Vietnam War, and the weakening of the U.S. dollar, which is the reserve currency, are the essential causal factors triggering this systemic transformation (Altıok, 2005). The oil crisis and the internal problems of Turkey's industrialization policy leaned on import substitution. At the same time, external debts increased on the one hand, and inflation started to rise on the other. A conjuncture has emerged in which the idea that the escape from the mentioned crisis in world economies can only be found through a comprehensive transformation of state-society and state-market relations (Şenses, 2004: 2-8). In this sense, an understanding of economic policy has been carried into effect, figured as neoliberal. Subsequently, the late 1970s corresponded to the period when neoliberalism was rising incredibly as the ruling development discourse.

Turkey's Third Five-Year Development Plan (1973-1977) signaled the unsustainability of the import substitution industrialization strategy in economic development and the transition to neoliberal economic policies. Two basic suggestions came to the fore in the plan to realize the process: Orientation to intermediate and investment goods in production and increasing foreign exchange activities in the economy (Eralp, 1981: 628). The Fourth Five-Year Development Plan (1979-1983) was prepared during the most severe period of the crisis of the import substitution model. The question marks about the future of the country and the efforts to search for a new development model in the plan:

"Turkey entered the Fourth Five-Year Development Plan Period under the pressure of major internal and external problems, as well as a real effort to achieve and sustain the development breakthroughs carried out since the Republic's first years. As a result, society is faced with the necessity of tidying up and solving problems that reach undelayable proportions" (DPT, 1979: 3).

Supporters of neoliberalism advocate that the economic system would not cause any trouble through the Washington Consensus-which is the embodiment of the policies that represent the ideology of pure free market capitalism-in the case that policies such as economic and financial liberalization, privatization, deregulation, free trade, reducing public expenditures, reduction of the weight of the public sector in the economy are implemented in economies (Naim, 2000). Neoliberalism took a more technocratic form in the distinctive Washington Consensus of the 1990s. Neoliberalism provided a kind of operation framework or ideological software support for the state restructuring and rescaling in international and local contexts (Peck and Tickell, 2002: 380). The coming to power of Margaret Thatcher in England in 1979 and Ronald Reagan in the U.S. in 1980 was accepted as a milestone for neoliberalism to strike root worldwide (Best, 2020: 594-595). Neoliberalism, which does not have social concerns while constructing its policies, has declared itself without alternatives by operating with the understanding of a social structure consisting of individuals, not society (Boratav, 2003: 156). This situation is concretized in Thatcher's discourses, such as "There is no Alternative" and "There is No Such Thing As Society." The full acquaintance of the Turkish economy with the development project with a neoliberal axis was realized with the announcement of the economic liberalization package under Turgut Özal on January 24, 1980

(Mumyalmaz, 2019: 1899). This development is the first step of Turkey's switch from the statist development strategy to the state capitalist development strategy.

#### **6. First Steps of Paradigmatic Transition From Statist to State Capitalist Development: January 24 Decisions**

January 24 Decisions started a new era in the Turkish economy. The decisions took the first steps of the transition from the import-substituting state-centered industrialization approach to the export-oriented development approach as the basis. In addition, decisions were built on the targets of solving the problem of price stability and balance of payments in the short term and assuring Turkey's integration within the world through trade and financial liberalization in the long term.

The state has withdrawn from social domains such as education and health to minimize its intervention in the functioning of the free market, consistent with the understanding of the capitalist state. It significantly reduced the support given to agriculture and developed privatization policies. In the summary of Türel (2021), "The development model of the Turkish economy adopted after 1980, perceiving globalization as the main driving force, adopting competition as the application environment of this power, neutralizing the self-organization of labor, pulling the state out of the market, turning education and health into commercial commodities, commercializing social security".

Stand-By Agreements with the IMF and the World Bank covering the years 1980-84 formed the critical stages of the integration of the Turkish economy with world capitalism (Ercan, 2004: 21). There is a general belief that the state was minimized in Özal's administration however this is not the case. The period embodies an understanding of development in which state capitalism is prioritized alongside free market capitalism. The state is assumed to be an effective mechanism in constructing neoliberalism as an economic and political power (Munck, 2014: 111). In the words of Ayşe Buğra:

"The state did not shrink under the power of the Motherland Party led by Turgut Özal. On the contrary, infrastructure investments, which gained momentum, significantly increased government expenditures. As a result, the budget deficit ratio to Gross National Product rose from 1.8 percent in 1981 to 5 percent in 1989. At the end of the 1980s, 90 percent of the trading volume in the Istanbul Stock Exchange consisted of government papers. The share of public banks in total deposits also increased". (Buğra, 2013: 208).

It is difficult to make a comprehensive definition of state capitalism. When state capitalism is analyzed in the historical process in the context of its meanings, it is seen that the concept is used by both Marxist and leftist theorists and liberal theorists to emphasize the state's interventions in economic life. The conceptual ambiguity of state capitalism was mainly because state intervention changed depending on the needs of the capital accumulation process in that period. State capitalism practices have changed depending on the bottlenecks and crises experienced by capitalist production relations in the historical process. They have been applied differently in different countries according to the development status of capitalism. State capitalism implemented in Turkey has made itself felt intensely through neoliberal policies after the 1980s as a response to the crisis in the world economy in the mid-1970s. State capitalism refers to a system in which the state operates as the leading economic actor and uses markets for political gain (Bremmer, 2009: 41). In the understanding of state capitalism, the idea of pursuing the political, economic, and social goals determined by the

political power, and affecting the economy by the state in order to achieve these goals, is dominant. However, the primary purpose here is that this intervention is not for the public interest but for political benefit and gain. In Özal's period, it was frequently observed that a significant part of public officials did not act to realize the "public interest" principle, which constitutes the purpose of public service. They acted in corruption, bribery, embezzlement, and nepotism by prioritizing their interests (Koçak and Yüksel, 2010: 73- 74). From this point of view, it can be argued that state capitalism emphasizes a political economy in which the state controls or directs fundamental productive forces. However, market forces also work at full speed (McNally, 2013: 3). Markets are vital for achieving this goal. From this, it can be interpreted that state capitalism is the portrait of capitalism under state coordination. It is clear that state capitalism, which came to the fore in Turkey after 1980, does not have a free market mechanism or practices contrary to neoliberal economic thought. In Turkey, the decisions taken during the Özal governments after 1980 were taken by bureaucrats or economic units supported by governments, and the political needs of the bureaucratic state were prioritized. January 24, 1980, Decisions were taken with the support of bureaucrats and governments, keeping the political needs of the state in the foreground.

Turkey's integration into the world economy has evolved to a different point, with the financial liberalization process set in motion through the Decree No. 32 On Protection of The Value of Turkish Lira and Bans on Using Foreign Currencies In Contracts in Turkey issued in 1989 (Ercan, 2004: 12). This advancement enabled the Turkish Lira to gain the convertibility feature and free capital movements. In addition, it made it possible to conduct domestic transactions in foreign currency. The first step was integrating the Turkish economy into the financial globalization process.

The events in question are also felt from the discourses in the development plans prepared in the period. In both Fifth (1985-1989) and Sixth Year Development Plan (1990-1994), there are very enlightening examples of the dynamics of the period. Both plans are blessed principles such as free market, financialization, unlimited competition, growth, entrepreneurship, and the minimal state as absolute and universally shared requirements and realities (DPT, 1985: 188-200; DPT, 1989: 343-344).

The logic of the market and neoliberal rationality have penetrated all the pores of society, and the state has begun to function as a market actor that builds it, far from withdrawing from the economic sphere (Dardot and Laval, 2012). All of these incidents can be construed as an indication that a development strategy that adopts state capitalism has begun to flourish in the Turkish economy. This position is reflected in Özal's "I like the rich" discourse (Cited in Yıldız, 2018: 46), which has transformed the economy into a monopolistic structure in which the interests of those with financial capital are prioritized.

## **7. Manifestations of the State Capitalist Development Predicated on Financial Speculation**

The 1990s represented a period in which the Turkish economy was broadly and radically integrated into global financial capital. In line with the interests of state capitalism, the state budget seems to have turned into a mechanism for rearranging income distribution in financial markets, not economic development. Early deindustrialization was one of the dramatic results of this condition (Taymaz and Voyvoda, 2012). Financial liberalization and high-interest rate policies prevented investments from directing to the manufacturing industry (Uygur, 1993). According to a study on the manufacturing industry, fixed capital

investments decreased by nearly 15 percent between 1980 and 1989 (Şenesen and Erol, 1995: 254). Macroeconomic instability and weakness of financial supervision caused the economy to remain open to speculation and short-term capital flows, inviting the 1994 Financial Crisis (Öniş and Riedel, 1993).

The 1994 crisis is Turkey's first financial crisis experience. At the end of the crisis, significant increases materialized in real interest rates and foreign exchange prices. In addition, irrepressible expansions in debt burden and public sector borrowing began. The government replied to the economic crisis by starting an IMF-backed economic stabilization program on April 5, 1994. The objectives of the intervention can be summarized as reducing inflation, lowering foreign trade deficits by increasing exports, dropping budget deficits, and maintaining balance in the real and financial sectors. However, the economic stabilization measures implemented have often been unsuccessful. In this case, the political instability in the country had a significant share (Karagöl, 2010: 26).

The Asian Crisis that started in 1997, and the crises experienced by Brazil and Russia later on, significantly impacted Turkey's development performance. By the end of 1997, the structural problems of the Turkish economy began to come into sight again. Economic growth declined as confidence in emerging economies was shaken by the crises, and as a result, capital flows slowed globally (Marois, 2012: 118). Following the crisis, capital flows to Turkey dropped sharply, and the share of capital flows in national income decreased from 5.8% in 1997 to 1.8% in 1998 (Akyüz and Boratav, 2003: 1552). In addition, although inflation rates recovered from triple digits following the 1994 crisis, they could not be brought under control and hovered around 85%.

These severe financial crises in the world economy in the second half of the 1990s have prompted economists to act. While the crises carried with questioning neoliberal development policies, whether there would be a new paradigm change in development thinking has been at the center of the discussions. With the intensification of the results and criticisms that arose in practice, a trend emerged from authoritarian neoliberalism towards a new synthesis, the Post-Washington Consensus. Discourses such as state capacity, state power, state-society synergy, governance, and coordinated market economies have come forward in the development discussions.

The World Development Report of the World Bank, *The State in a Changing World* (1997), can be evaluated as one of the expressions of the intellectual stage reached in this sense (World Bank, 1997). Emphasis was placed on changing the internal architecture of states in world economies. Contrary to the radical opposition of the previous period, it was explained that the establishment of economic institutions of capitalism is a prerequisite for economic development, and a new definition of the effective state is required for this (Stiglitz, 1998; Naim, 2000). However, the discourses are based on capitalism and neoliberalism. The basic ideology of the capitalist system and the understanding of development is determined in this direction. Therefore, it can be asserted that an understanding of development that prioritizes state capitalism is tried to be imposed on the world.

While these discussions were going on, the Turkish economy was again faced with a crisis. A severe economic crisis was experienced in November 2000 and then in February 2001. In particular, the 2001 crisis is also specified as the first capitalist crisis in Turkey's history. This is because the crisis occurred in an economy thoroughly integrated into the world economy through the liberalization of foreign trade and capital movements after 1989.

## **8. A New Institutional Thinking Plane in Development Debates: The Post-Washington Consensus**

The crises of December 2000 and February 2001 reflect the neoliberal policies that Turkey has begun to implement since the early 1980s. In this sense, the contradictory nature of capitalist production relations expresses the peak point of political, economic, social, and financial instability (Savran, 2013: 264-271). In 2001, when record capital outflows were experienced from the markets, real national income decreased by 9.4 percent, national income per capita fell by around 25 percent, thousands of small and medium-sized enterprises and more than 20 commercial banks of all sizes went bankrupt (Öniş, 2003: 9). There has also been a social trauma that has spawned millions of skilled unemployed.

The development path that the Turkish economy will follow after the crisis and the macroeconomic governance and control framework are presented through the Transition Program to a Strong Economy, promulgated on April 14, 2001, whose technical parameters were drawn by Kemal Derviş. Thus, while the required steps were taken for the neoliberal state to gain functionality, institutionalism, good governance, and practical state discourses came to the fore via enacted laws. It is aimed at restructuring the state device following neoliberal principles. The program acted with the intent of reconstructing the entire financial sector, in particular banking. It can be asserted that the program was not taken a turn independently of the principles of the Post-Washington Consensus. Policy titles such as good governance, the importance given to institutions, effective state, and transparency against corruption evoked the principles of reconciliation. However, on the other hand, implementing macroeconomic policies compatible with the primary content of structural adjustment and stabilization policies keeps going rapidly. The understanding of development in the years after 2001 is based on institutional neoliberalism (Öniş and Şenses, 2007). Derviş's statements on the topic are noteworthy:

"The state should control, but not fall on the playing field of the economy. The state should not cause a crisis; it should maintain order. But of course, you will score the goals. With your strength and your efforts, Turkey will achieve success. The state should not cause a crisis; it should maintain order. You have to score the goals" (Cited in Ercan, 2017: 643).

Therefore, it would not be wrong to claim that the understanding of development in Turkey in this period was also designated in a state-capitalist direction. As a result of institutional reforms (Özekicioğlu, 2020: 97), which strengthened autonomous institutions such as the Banking Regulation and Supervision Agency, the Capital Markets Board, and the Competition Board, the financial sector gained a robust audit and surveillance infrastructure.

The period's development strategy is also reflected in the development plans. The Eighth Development Plan (2001-2005) focused primarily on the restructuring of the state, short- and long-term growth and stability in the macro economy, and integration into the world economy through the European Union. In addition, intensifying science and technology skills, introducing new technologies, and augmentation of efficiency in infrastructure services have been proposed as preferred policy principles. As directly remarked in the plan:

"The Eighth Plan period will be a period in which the quality of life of the society will increase, the process of uninterrupted and stable growth will be entered, the fundamental transformations in the process of European Union membership will be realized, integration

with the world will be ensured, and our country will gain a stronger, more effective and respected place in the world and the region" (DPT, 2001: 33).

The primary focus of the 9th Development Plan (2007-2013) was developed similarly to the previous plan. The vision is determined as a Turkey that grows in stability, shares its income more equitably, has competitive power on a global scale, transforms into an information society, and has completed the harmonization process for membership to the European Union (E.U.). The state's role has been designated as withdrawing from producing commercial goods and services and strengthening its policy-making, regulatory and supervisory functions (DPT, 2007).

Based on a doctrinal market ideology, the implemented development policies continue to be advocated through concepts such as strong state control, good governance, reregulation, and poverty reduction, that economic growth and development will be triggered through some measures that shrink the state in the social context, the privatization, and deregulation. It is possible to point out that through these policies, the role of the state has been redefined in favor of capital (Cammack, 2003; Craig and Porter, 2006), and an attempt has been made to create a development approach that defends the existence of the capitalist state in various fields. Meanwhile, the financial crisis that emerged in the U.S. in 2008 and felt its effects almost all over the world paved the way for the different development discourses for Turkey.

#### **9. Global Financial Crisis & Crystallization of State Capitalism in Development Debates**

The 2008 financial crisis severely affected the world economy compared to the Great Depression of 1929. The giant real estate and credit bubble in history lie at the root of the global crisis that first burst in the U.S. in September 2008 and then spread to the entire world in waves (Crotty, 2009: 566). Moreover, the crisis's consequences did not remain narrow because of extensively integrated financial markets and production processes. As a result, it has had an impact on the Turkish economy as well as on the economy of many countries.

During the global crisis, many discussions were opened, and many new views and suggestions about the system came to the fore. Many economists claimed that the current economic theory could not explain the crisis and could not show the way out. The crisis process has also brought a theoretical formation to the agenda that justifies the re-regulatory movements in the functioning of the free market (Yeldan, 2009: 15). However, the critical attitudes of Krugman (1995, 2011, 2018) and Stiglitz (2012, 2017) about the economic and social problems created by market fundamentalism could not lead to a fundamental break with the neoliberal belief that admires the beneficial properties of free markets.

After the crisis, governments developed fiscal stimulus programs, monetary policy measures, and policies to solve the financial sector's bottleneck. Priority is given to policies aimed at consolidating the financial system and reducing high public budget deficits in the medium term (IMF, 2011: 19). Accordingly, in the Medium Term Plan of Turkey in 2011, it was stated that the financial structure of banks would be strengthened, and structural reforms in the goods and labor markets and financial sector would continue. Nevertheless, the policy prescriptions developed along a neoliberal line include the reduction of public expenditures and wages, increasing indirect taxes, and liberalization of the markets. The main idea that stands out differently in policies is to crystallize the state and restructure capitalism by focusing on the state's enormous power in shaping markets (Mazzucato, 2021). What is in

question is the strategy of marketization to the crisis of capitalism and a development approach that prioritizes state capitalism.

The new understanding of development, which can be classified as the new developmentalism or state capitalism in the Turkish economy, came to the fore, especially after 2011 (Öniş, 2019). Turkey's tendency towards state capitalism in its understanding of development has also been reflected on the economic and political fronts. Through the rise of non-Western actors, Turkish policymakers have also become more willing to take advantage of changing economic centers of gravity, and existing mega-scale construction and infrastructure projects have taken place as significant investment areas for Russian and Chinese companies (Kutlay, 2020). Since 2011, the Turkish economy has focused on short-term credit expansion policies. After 2014, short-term populist policies came into play. In the context of the historical development of the Turkish economy, it is observed that state intervention in the economy is used continuously as a purely political instrument, and populist spending spirals that disregard fiscal discipline are constantly on the agenda, especially during election periods (Öniş and Riedel, 1993).

Following the materialization of the Turkey Wealth Funds in 2016, the institutional foundations of state capitalism were laid again (Konukman and Şimşek, 2017: 1934-1944). Accordingly, the development discourses that aim to increase the state's weight in specific sectors and expand the state's control and coordination following the requirements of neoliberal policies have been heard frequently. However, although public funds will be utilized, the Turkish Wealth Funds have been excluded from the audit of the Court of Accounts (Şahin, 2017: 364). The management level of the Turkey Wealth Funds is not entirely composed of independent private sector managers. A part of the management level comprises representatives of political and bureaucratic origin groups that can be considered capitalist pressure and interest groups. This situation proves that the Turkish Wealth Funds is one of the typical examples of state capitalism.

The 2014-2018 Tenth Five-Year Development Plan (2014-2018) includes policies designed to deliver development to different segments of society under the title "Qualified Individuals, Strong Society." Under the title of "Innovative Production, Stable High Economic Growth," targets and policies are disputed for structural transformation in production and increase in welfare (Kalkınma Bakanlığı, 2014). While the main objectives of the Eleventh Development Plan (2019-2023) are characterized as revealing the development vision of the Turkish economy, its vision is "Producing more value, sharing more equitably, strong and prosperous Turkey" (Kalkınma Bakanlığı, 2019). In the plan, under the title of "Stable and Strong Economy," the basic framework and principles have taken part regarding the economy's monetary, fiscal, income, and foreign trade policies and the macroeconomic targets that will consolidate these policies in the plans, growth phenomenon rather than development at the forefront. It is also open to debate to what extent the strategic infrastructures of targets are prepared, such as being one of the world leaders in new technologies, which is also frequently mentioned in political speeches regarding the Republic of Turkey's centennial will be celebrated in 2023.

Development is a historically, contextually, and discursively constructed concept open to a new meaning. Therefore, consultation with history is fundamental to comprehending how the development policies of the Turkish economy have changed since its foundation. In essence, the development practice implemented nearly a century since the establishment of the

Turkish economy has been subjected to radical changes in terms of its roadmap. The main driving forces of these changes and the periods covering these changes in the context of development discourses and policies are classified in Table 1. In the methodological context, the main actors, institutions, and economic theories have been attempted to specify that they are thought to play a vital role in producing different development discourses in different periods. Further, the internal and external dynamics that shape the actors, institutions, and economic theories in the development discourses they generate have been set down.

Table 1. Understanding the Transition from Statist Development to State-Capitalist Development in the Context of the Main Turning Points in the Development of Turkey's Development Discourse

Stages	Global context and critical external factors	The dominant development discourse	Domestic policy coalitions that directly influence the development discourse	Objective	Systemic Breaking Point	Statist Development? OR State Capitalist Development?
First Stage: Early republican period development (1923-1929)	Determination of the direction of the world economies in the interwar period.	Nation-state building, moderate statism, economic development, and independence.	The segments of traders, farmers, industrialists, and workers determine the economy's direction at the Izmir Economics Congress.	Economic independence for national and political independence.	1929-Great Depression	Moderate Statist Development.
Second Stage: The development of strong statism (1929-1939)	The Great Depression, the global Depression it brought, and the rise of Keynesian economics.	Development within the strong statism principle framework established within the framework of Keynesianism.	The Kadro Movement brought the planning approach to the agenda inspired by socialism and Keynesianism on the axis of Kemalist ideology.	Rural development, planned industrialization, increasing domestic production, and capital accumulation.	The Second World War broke out in 1939.	Strong Statist Development.
Third Stage: The adoption of the principles of western-style development conception began during the Second World War (1939-1945).	The Second World War turned upside down the world's economic and political conjuncture.	Development within the framework of the eroding statism principle.	The state, the Republican People's Party Base Nationalism, and the groups that adopted the ideological rapprochement they accepted with the support of Germany, which dominated Europe in the first years of the war.	Fight to survive economically and politically with practices such as the National Protection Law and Wealth Tax in the years of great poverty.	The end of the Second World War in 1945.	Signals of a break with statist development.



Fourth Stage: Development within the framework of integration with the Western bloc in the transition to the multi-party system (1946-1950).	The rise of U.S. hegemony, the establishment of the IMF and the World Bank, the Cold War, and the burgeoning of development economics.	Adoption of the new regime's social, political, and cultural values oriented towards the Western Bloc in the understanding of development.	Large agricultural landowners, industrialists, and economically empowered Anatolian merchants who formed the base of the Democratic Party and pioneered its establishment.	The development strategy realized through the integration of agriculture with the world within the framework of the Marshall Plan.	The coming to power of the Democratic Party.	Break with statist development.
Fifth Stage: Transition to Integration with the World Economy on the Axis of Agricultural Populism in the Democrat Party Period (1950-1960).	The rapid rise of development economics and modernization theory.	Rapid agricultural development and industrialization on the axis of modernization.	A coalition of big landowners and farmers in favor of an agrarian strategy, the nascent industrial bourgeoisie, and the political party at work representing this new coalition of interests.	The rapid increase of national income through agricultural development.	The military coup of 1960.	State-led liberal development.
Sixth Stage: Planned Development Period (1960-1980).	The socioeconomic backwardness of Third World countries, the rise of dependency theories.	Inward accumulation strategy through import substitution industrialization.	Emerging industrialists, large bureaucratic institutions such as the State Planning Organization responsible for implementing the national development model, and an organized workforce.	Development by industrialization in line with the Five-Year Development Plans and primary objectives.	Decisions of January 24, 1980.	Statist development.

Seventh Stage: 1980-2001 Transition from import substitution policies to free market development policies accompanied by the global rise of neoliberalism.	Global acceptance of policies created in the neoliberal and monetarist context following the structural crisis of capitalism.	A pro-capitalist development based on the Washington Consensus and its fundamental principles.	Export-oriented industrialists, financial interests, and elements of the new neoliberal bureaucracy, including small and medium-sized enterprises, also called Anatolian tigers.	Deregulation, integration within the world capitalist economy and foreign markets, structural adjustment.	2000 and 2001 Crises.	State capitalist development.
Eighth Stage: From the Twin Crises (2000-2001) to the present. Development discourse based on neoliberalism with a regulatory state component and institutional reforms.	The financial crises that took place one after another at the global level in the 1990s and the need for a makeover of neoliberalism.	Within the framework of the Post-Washington Consensus, a development understanding based on the discourses of regulatory state and state market cooperation.	New regulatory bodies, such as the Competition Authority, the Central Bank, and the Banking Regulation and Supervision Agency, occupying prestigious positions in the bureaucratic arm of the state apparatus.	Post-Washington Consensus, State-Private Sector Cooperation.	-	Strong state-capitalist development.

Source: Kutlay, 2020; Öniş, 2003; Senses, 2004; Öniş and Riedel, 1993; Öniş and Şenses, 2007; compiled and created by the author.

In the determination of the development discourse of the Turkish economy, the global context, in other words, the economic, political, and social events experienced in the world in the dates mentioned above, and the economic theories that shaped the world economic thought that sprouted depending on these events have been influential. The development discourse of the Turkish economy has inevitably been affected by the conjuncture in the world and the economic theories shaped by the conjuncture, as well as the country's internal dynamics. Domestic policy coalitions that were effective in Turkey in the relevant period also have a share in the specification of the development discourse. When the table is carefully analyzed, it can be noticed that Turkey's development strategy has gradually switched from a statist understanding of development to a state-capitalist understanding of development. The dynamics determining this transformation can be categorized as global context, external factors, and domestic policy coalitions.

## 10. Conclusion

In the study, the evolution of the development discourse since the establishment of the Republic of Turkey has been tried to be placed in a general context. In the 1920s, the Turkish economy was an economy where shortages and inadequacies were experienced even in producing the most basic goods. Within this framework, after the revolution in 1923 and the proclamation of the Republic, Turkey started to create a brand new economy with a new industrialization move from the agricultural-oriented economic structure of the Ottoman Empire. The investment financing needs of the private sector, which has not developed

sufficiently yet, were met under favorable conditions, and the foundations of the appropriate infrastructure for domestic capital accumulation were laid. While the economic conditions were rebuilt between 1923 and 1929, the state provided infrastructure services, eliminated the deficiencies in education and health, and did not ignore social justice while forming the national bourgeoisie.

The 1929 crisis made it necessary to take a series of steps that paved the way for implementing strong statism as a new stage in the early Republican political economy and an autonomous development strategy. In the first half of the 1940s, policies aimed at eliminating the negativities created by the extraordinary conditions carried with the Second World War. In pursuit of the outbreak of the war, it can be put forward that a paradigmatic change occurred in understanding the development, and the principle of statism began to collapse in the war environment. In the years following the war's end, it is convenient to propound that the state-society relationship underwent a severe transformation following the transition to the multi-party system.

The state-led liberalism experience carried out in the 1950s following the objectives of rapid development relied on agriculture and expansion of the domestic market, terminated amid a severe socio-political and macroeconomic crisis, causing the Turkish economy to face the IMF for the first time in 1958. The political and socioeconomic crisis that broke out in the late 1950s not only interrupted the democratic system by laying the groundwork for military intervention but also initiated a new era of interventionism based on import substitution industrialization and development planning in the direction of the prominent global development approaches of the period-Keynesianism.

The import substitution industrialization strategy was systematically implemented under the planning regime coordinated by the State Planning Organization. As a result, despite the severe institutionalization problems in the constitution stage of the planning regime, Turkey achieved a rapid and sustainable growth momentum until the first years of the 1970s.

The structural crisis that manifested itself in the global economic, political, and social context in the mid-1970s was attempted to overcome by implementing neoliberal policies. The neoliberal transformation project was initiated in the political economy of Turkey in the early 1980s under Turgut Özal. January 24, 1980, Decisions inspired by the policies of Reaganomics in the U.S. and Thatcherism in the U.K. Özal started implementing the national transformation programs aiming at the structural transition towards the free market economy.

Özal's period emerged as a period in which state capitalism was at the forefront as much as free market capitalism. The state is articulated with capitalism and international capital due to the integration of the Turkish economy with the world. When necessary, the state entered the market like a capitalist has followed policies to protect the capitalist when appropriate. In the historical process, the permanent and primary duty of the state has been to make and implement the regulations that would assure the functionality of the capitalist system. Private property rights were guaranteed for the functionality of capitalism, and the structural and functional regulations of the state, such as defense, security, and Law, were rearranged to meet these conditions. The understanding of the state that works to neutralize and implement the norms, practices, and social relations of the political economy of capital has emerged as a critical mechanism in determining the development discourses of Turkey after 1980. It is a known fact that states, while structuring the behavior of their citizens and

social classes, also contribute to creating institutions designed to reproduce state power and guarantee the process of capitalist capital accumulation. Let us recall Marx and Engels' theory of the state. Marx and Engels argued that historically, the most crucial reason for the existence of the capitalist state is to protect the capitalist property regime. To summarize his famous sentences in the Communist Manifesto: "The state is nothing but the executive apparatus of the bourgeoisie." When the policies that lacked the development framework implemented in Turkey after 1980 are analyzed in this context, it can be observed that the policies of the state apparatus in this period resulted in the detriment of people who had nothing but their labor to live.

The developmental logic of previous periods has given way to the budget discipline of structural adjustment programs and export fetishism. (Cerny, 1997). Thus, the neoliberal perspective has qualified development in growth, unemployment, the debt amount, foreign trade, and inflation indicators. As a result, development transpires as one of the forgotten fields in the 1980s. As Hoff and Stiglitz (2001: 390-391) point out, "Neoclassical economics, which is the theoretical foundation of neoliberalism, leaves out the heart of development economics by excluding institutions, history, and distributional considerations."

On the other hand, it is observed that the state designs policies in favor of those who own the means of production, especially those with financial capital. Due to the financial liberalization and expansion policies implemented since the end of the 1980s, the reproduction conditions of the state, companies, and households in Turkey have become heavily dependent on financial markets. Consequently, the economy became more sensitive to the developments in foreign markets, particularly hot money inflows and outflows that dragged the economy to significant instability from time to time.

The financial and macroeconomic crises experienced one after the other in 1994, 2000, and 2001 became unavoidable. The development context was removed again, and an economic understanding completely preoccupied with macroeconomic parameters such as inflation, unemployment, hot money, and interest shone out. Post-Washington neoliberalism has focused on institutional reforms that comprise a financial system resistant to external shocks and an intensive supervision and surveillance architecture following the 2001 crisis. The post-Washington Consensus principles and, in this context, the change experienced in the World Bank as an international institution that directly affects the development discourses in the world also rebounded in Turkey's development strategies. Under the state's regulatory role and cooperation between the state and non-governmental organizations, development is reduced to project management. However, it is possible to talk about Turkey's positive macroeconomic governance performance in the post-2002 period, accompanied by rapid economic growth, low inflation, and record export increases. By placing the finance and banking sectors on solid institutional and managerial foundations, the degree of immunity has been augmented against the financial crises that have plagued Turkey in the previous periods. However, an economic understanding that has withdrawn from the development context continues. The neoliberal understanding of development, which primarily pays attention to macroeconomic parameters, did not focus on human realities and the social reflections of economic relations.

After the 2008 crisis, there was a period in which the state took a more dominant role than expected in development discussions. This period can be characterized as the period of the occurrence of state capitalism again. The term was developed to describe the

transformation of the state from welfare and industrial states to post-industrial competitive financial capitalist states in terms of policy priorities. However, an influential economic transformation framework could not be put forward against the chronic crises, and serious problems have been experienced since the 2008 crisis.

The main problems of Turkey's economy in the last ten years are unemployment, high inflation, and the current account deficit. A complex and indirect tax-based financial system, low education level, and human capital deficiency are the other significant problems. Development continues to be identified through macroeconomic parameters. This case can be observed in recent years' last few development plans.

It can be argued that the Turkish economy has not generated a miracle of development despite the absolute progress achieved in its nearly 100-year history. Despite periodic increases in the economic growth rate, it was not possible to establish a systematic welfare state and to reflect the opportunities provided by these increases in relatively too-large social segments. Since an understanding that prioritizes the capitalist state instead of the welfare state in development continues to dominate.

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## Relationship between Institutional Quality and Corruption: The Case of Turkey

Yıldırım Beyazıt Çiçen<sup>1</sup> 

<b>Kurum Kalitesi ve Yolsuzluk İlişkisi: Türkiye Örneği</b>	<b>Relationship between Institutional Quality and Corruption: The Case of Turkey</b>
<b>Öz</b> Bu çalışmada Türkiye’de yolsuzluk düzeyi ve kurumsal yapının kalitesi ilişkisi ele alınmıştır. Kurumsal yapının kalitesi yolsuzluk açısından önemlidir. Türkiye’de bu ilişkinin olup olmadığının ortaya koyulması amacıyla 1984-2015 yılları arası çeyreklik verilerden faydalanılarak RALS-ADF birim kök testi ve RALS-EG eşbütünleşme testi uygulanmıştır. Kullanılan değişkenler; bağımlı değişken olarak yolsuzluk düzeyi, bağımsız değişken olarak kurumsal kaliteyi temsilen politik risk derecesi ve kontrol değişkeni olarak toplam üretim endeksidir. Öncelikle koalisyon ve tek parti dönemi birlikte analiz edilmiştir. İkinci olarak sadece koalisyon dönemini içeren 1984-2002 dönemine ilişkin analiz gerçekleştirilmiştir. Her iki analizde de Türkiye’de yolsuzluk düzeyi ve kurumsal yapının kalitesi arasında bir eşbütünleşme ilişkisi bulunmamıştır.	<b>Abstract</b> The relationship between the level of corruption and the quality of Turkey’s institutional structure was investigated in this study. Using quarterly data between 1984-2015, RALS-ADF unit root and RALS-EG cointegration tests were used to determine if there is a relationship between these variables in Turkey. Corruption level is the dependent variable, institutional quality is the independent variable, and the total production index is the control variable. The first analysis included both the coalition and single-party periods. Also, a separate analysis was carried out for the coalition period 1984-2002. There was no correlation between corruption and institutional quality in either analysis.
<b>Anahtar Kelimeler:</b> Kurumsal kalite, Yolsuzluk, Türkiye, RALS	<b>Keywords:</b> Institutional Quality, Corruption, Türkiye, RALS
<b>JEL Kodları:</b> D02, D73, C32	<b>JEL Codes:</b> D02, D73, C32

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Çalışma tamamı yazar tarafından hazırlanmıştır.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

Corruption is the misuse of public power for personal gain. According to Transparency International, corruption is defined as the abuse of entrusted power for personal gain. According to this definition, corruption can occur in a variety of ways. The first is that public officials are paid in exchange for their work, service, or other interests. The second is that politicians misappropriate public works and contracts and give them to close groups. Third, businesses bribe officials in order to secure lucrative deals. Corruption is closely related to a country's institutional structure and is a governance failure. In a country with no inclusive institutions, there are many negative economic consequences because the institutional structure is not transparent and accountable, the rent-seeking activities develop, the quality of bureaucracy is low, and the service is based on particular interest groups instead of the general public. Corruption has negative consequences for investment (especially foreign direct investment). Due to this situation, economic growth slows down (Mauro, 1995: 683). In the case of corruption, the second significant adverse effect is the deterioration of the market's allocation efficiency. The main causes are a decrease in human capital accumulation (talent) and a misallocation of physical capital. The emergence of rent-seeking in countries moves talents away from entrepreneurship. In such an environment, companies lose their innovation desire. These factors hinder growth (Murphy et al., 1991: 2-4; Bardhan, 1997: 1322). However, some studies show that corruption does not affect or increase growth in countries with exclusionary institutions or low governance quality (Méon and Sekkat, 2005; Méon and Weill, 2010). On the other hand, in democracies with inclusive institutions, national anti-corruption strategies can be developed and implemented by strengthening institutions and ensuring the rule of law. With the reduction of corruption, higher growth rates, lower poverty rates, more investment, and higher public policy efficiency can be achieved (Hope Sr., 2017: 1-2).

The relationship between corruption and economic growth has been studied from two different perspectives. A first view holds that corruption promotes economic growth, known as the grease the wheels hypothesis. According to this viewpoint, corruption reduces regulations' effects on the private sector, facilitating commercial transactions and stimulating economic growth. In turn, this increases efficiency. As a second view, the sand and wheel hypothesis suggests corruption slows economic growth. Firm sizes and investments shrink as a result of corruption, according to this hypothesis. Additionally, corruption reduces transparency, hinders political performance, wastes taxpayer funds, and worsens income distribution. Economic growth is slowed due to these and other factors (Campos et al., 2015: 1-2).

In order to prevent corruption, it is necessary to strengthen the judiciary, develop anti-corruption regulatory regimes, and implement appropriate institutional reforms. The presence of strong checks and balances in the context of a competitive market system will reduce the incentives for rent-seeking and corruption in these circumstances (Broadman and Recanati, 2001: 361; Uberti, 2016: 317). It is necessary that the democratic institutions to be established are effective, that long-term corruption networks are hard to maintain, and that a structure with various levels of accountability and transparency be constructed (Bardhan, 1997: 1330). Anti-corruption legislation, however, must be evaluated within the historical, cultural, institutional, and ultimately existential context of its enactment. Therefore, a

country's institutional structure, which includes formal and informal institutions, can aid in understanding corruption (LaPalombara, 1994: 334).

In this study, the relationship between the level of corruption and the quality of the institutional structure in Turkey is investigated. Thus, it is aimed at providing insights on how Turkey's existing institutional structure affects corruption. Following the introduction, the literature on corruption is reviewed. The third chapter describes the econometrics methodology used in the analysis. The RALS procedure, developed recently and intended for non-normally distributed series, was applied to the analysis. Other subheadings in this section include the RALS-ADF unit root test, the RALS-EG cointegration test, and the data and analysis section. As a first step, this section discusses the data used in the study, followed by the analysis and results. Finally, a conclusion is provided based on these results.

## **2. Literature Review**

Several studies examined the relationship between institutions and corruption from a variety of perspectives, including institutional structure, institutional quality, institutional factors, governance, and the impact of institutions on economic growth, development, and economic performance. The literature section lists important studies in this field chronologically based on the institutional factors used.

A study conducted by Broadman and Recanatì (2001) examined transition economies. The causes and origins of corruption are unknown, according to this study. Research indicates that low entry barriers and high budgetary constraints are important factors in preventing corruption. It is hard to pin down the intricate relationships between corruption's determinants. In this empirical study, corruption was used as a dependent variable, while government quality, political institution quality, and openness to foreign trade were used as independent variables. According to the study, policymakers should design and implement economic reforms that encourage the development of crucial market institutions to reduce corruption incentives in order to combat the corruption problem. Additionally, new research is suggested to better understand the impact of banking-financial sector reforms on corruption.

In their book, Abed and Gupta (2002) explain corruption's causes and consequences. There is also discussion of the relationship between corruption and a variety of economic issues. These include corruption and government spending, corruption and taxes, and corruption and income distribution. When examining these issues, institutions are taken into account. The research suggests that in weak and poorly managed economies, entrenched profiteering groups can control the state to maintain monopolies and gain rent, as well as stifle competition and economic reform. Additionally, corruption reduces the effectiveness of the government and undermines public trust in its policies.

New studies have recently been published on the causes and effects of corruption, despite studies focusing on the effects of political institutions on economic growth, social equality, and political stability. Yet, little is known about how various political institutional arrangements prevent corruption. Gerring and Thacker (2004) examine how regional sovereignty (unitary or federal) and executive power (parliamentary or presidential) play a role in the level of corruption. The first finding of the study is that unitary and parliamentary governments reduce corruption. It has also been found that centralized constitutions reduce political corruption.

Collier (2002) examines corruption from the perspective of institutions. According to this study, complex institutions such as corruption consist of an ever-changing mix of three different social rules that perform different functions. As a first step, instruction rules define the principles, beliefs, or norms that inform agents of the organization's goals. Secondly, directive rules provide specificity to the instructions' principles, beliefs, and norms. A directive rule tells agents what to do in support of an instruction rule. When an agent fails to comply with a directive, sanctions are necessary to make the guidelines effective. As a third factor, commitment rules define the roles of agents. These rules explain agents' rights or duties. The purpose of commitment rules is to provide well-defined powers for some agents while reassuring others that they will not be abused. Depending on their formality and power, the three rules fulfill their assigned functions. A rule's formality depends on how well it is supported by other rules. The strength of a rule depends on how often it is followed. It is now imperative that states implement anti-corruption programs in order to reduce corruption reliably.

Democratic governance arrangements should provide the best environment to control corruption and secure property rights. However, the dynamics of corruption in developing democracies are quite unclear. When comparing autocracies, transitional economies, and democracies, we can conclude that corruption is more prevalent in autocracies, moderate in transitional economies, and rare in established democracies. Accordingly, democratic governance and an independent judiciary provide the best opportunities to combat corruption. Weaker democracies need to improve their legal structure to increase their capacity to minimize corruption. Therefore, new research is needed to protect property rights and design mechanisms to facilitate the democratic transition in these countries (MacIntyre, 2003: 18-20). On the other hand, according to Fritzen (2005), most anti-corruption initiatives face an internal dilemma. According to this dilemma, while actors should adopt and implement policies to prevent corruption, they may not be willing to do so, especially in authoritarian regimes. Because when these actors engage in such a struggle, they are afraid of gradually losing their legitimacy.

Based on a cross-country panel, Lederman et al. (2005) investigated the determinants of corruption, paying particular attention to political institutions that increase accountability. Since political institutions play a significant role in determining corruption in the theoretical literature, empirical literature is relatively sparse. According to the findings, political institutions play an important role in determining corruption prevalence. Corrupt practices can be reduced by democracy, parliamentary systems, political stability, and freedom of the press. Aside from that, the common conclusions of previous empirical literature on openness and the legal tradition do not hold when political variables are taken into consideration. The study also found that a decentralized government structure reduces corruption.

In the article published in 2008, Aidt et al. explored how political accountability influences corruption and economic growth. This study identified two types of governance regimes based on the quality of political institutions, and concluded there is a specific relationship between corruption and growth within each regime. A regime with high-quality political institutions is less likely to suffer from corruption. When low-quality institutions are in place, corruption does not affect growth.

Emek and Acar (2008) discussed institutional options to combat corruption. For this problem, there are two options: Only one authorized institution or the institutional structure

in which several institutions are authorized. Based on the analysis made using data from 25 countries, including Turkey, it has been found that increasing the independence and accountability of existing institutions will help fight corruption. There's less corruption in countries with multiple institutional structures than in countries with one. Institutional design plays a big role in preventing corruption. Increasing the independence, transparency, and accountability of existing institutions will make a difference.

Dreher et al. (2009) discussed the relationship between institutional quality, corruption, and the informal economy. The study examined different empirical models between 78-135 countries. According to the findings, institutional quality increases corruption and the informal economy. Reduced corruption requires the government to be as effective as possible in terms of institutional quality.

The relationship between economic freedom and corruption in the context of institutional quality was examined by Heckelman and Powell (2010). The economic freedom index was divided into five sub-components: Government size, international trade freedom, credit, labour, and market regulations. As institutions improve, corruption's benefits diminish. The growth benefit of corruption is reduced significantly and eventually turns negative as economic freedom develops in government size and regulation domains. According to these findings, policies aimed at reducing corruption generally will not always lead to higher economic growth rates.

De Vaal and Ebben (2011) claim that the majority of empirical and theoretical literature on corruption and economic growth ignores the fact that corruption affects growth differently depending on the institutional environment. This causes the institutional structure to be viewed as a black box, which prevents the analysis of corruption's interactions with other institutions. Nevertheless, corruption can facilitate the functioning of formal and informal institutional systems, and its elimination can lead to economic decline. Using the model established in this study, it is shown that corruption reduces the productivity of both productive public goods and labour in an institutional vacuum, thereby suppressing growth. Institutional factors, however, complicate this relationship. The negative impact of corruption on institutions and reduced economic growth occurs when political stability or property rights protection is above a certain level. The relationship between corruption and growth is therefore largely determined by the initial institutional environment.

According to Oral (2011), both domestic and international corruption should be dealt with. Public support is also necessary to achieve success in dealing with corruption. Therefore, the level of corruption and quality of governance determine the priority in the fight against corruption. Shah and Schachter (2004: 42) report that governments in countries with high levels of corruption have poor governance. Therefore, it is imperative to ensure public dominance in the fight against corruption, strengthen institutional participation and accountability, limit state intervention, and implement economic reforms.

The role of corruption and institutional quality in market regulation was examined by Breen and Gillanders (2012). The results indicate that corruption negatively affects regulation quality. When corruption is controlled, institutional quality does not matter in terms of regulation. Based on the results, policymakers can reduce corruption by improving regulation rather than implementing broader institutional reforms. Empirical country analyses show that corruption determines regulation quality except in politically unstable environments.

Venard (2013) studied the impact of corruption on economic growth through institutional structures. Despite some studies claiming that corruption adversely affects economic performance, others mention a positive impact. A lack of consideration for the institutional structure quality is cited as the reason for the discrepancies. According to the study, corruption benefits economic development only when institutions are of low quality. As a consequence of the structural equation models applied in the study, institutions affect development both directly and indirectly through their effects on corruption.

Fjelde and Hegre (2014) examined jointly the relationship between formal political institutions and political corruption. Accordingly, political corruption is an informal institution that prolongs non-democratic regimes by generating political support from non-democratic leaders and liberalizing concessions in official institutions. In the empirical analysis, 133 countries and the period 1985-2008 were considered, and the dynamic regression model was used. According to the model, high-corruption autocracies and hybrid regimes are more stable than low-corruption ones, while low-corruption democracies are more stable than high-corruption ones. Furthermore, coherent democracies tend to be more stable as a result of reduced corruption.

Brol (2016) argues that corruption is a phenomenon that affects every society regardless of their geographical location or historical context. Despite different sizes and intensities of corruption, corruption exists in every country regardless of its economic system and legal system, according to the study. In spite of the current regulations, corruption has become widespread in some countries, replacing other forms of exchange. In countries with weak institutions, this determination is exceptionally accurate. These weaknesses can be caused by changes in political or cultural factors. This article highlights institutional factors that influence corruption. Despite minor institutional weaknesses, countries may be prone to corruption, according to the study. As well as improving the bureaucratic system, it would be ideal for a legal country to establish clear, common, and, most importantly, respected legal norms. It is, however, necessary to have political will and consistency in order to achieve their implementation. The higher the democracy rate in a country, the less opportunity there is for the corruption mechanism, and the highest rate of corruption is seen in totalitarian countries. Reasons for this are the lack of transparency and private interests preference over public welfare.

Institutional audits are increasingly recognized as an important tool in the fight against corruption. Heller et al. (2016) argue that political systems are poorly designed for institutional audits. The study, however, has the limitation of looking only at legislative audits. The study did not include constitutional courts, certain referendums, or anti-corruption institutions. Several rival parties and open political competition are the best ways to prevent corruption and improve governance, according to the study.

On the other hand, corporations seek corruption through lobbying. According to Campos and Giovannoni (2017), lobbying is a way of gaining political influence and allowing corruption to flourish. Government policies can be influenced significantly by lobbying firms. The importance of institutional audit is once again highlighted by this situation. Institutional audits can also reduce the corrupt behavior of public officials. By achieving these positive developments, public institutions will be more reliable and effective (Ceva and Ferretti, 2017).

Through cultural determinants, Taşar and Çevik (2017) examined informal institutions of corruption. Covering 60 countries was used as the basis for the study, and according to the

results, corruption levels have a positive relationship with obedience to authority, individualism, emphasis on masculinity in national culture, religiosity, and trust in political institutions. On the other hand, nations that prioritize women's rights in terms of family structure and child education have lower levels of corruption.

Acaravci et al. (2018) examined the relationship between institutional quality and foreign direct investment. The study concludes that institutional factors (government stability, law and order, democracy, accountability, bureaucratic quality) positively affect foreign direct investments. The corruption factor, which represents institutional factors, is excluded since corruption shows an exclusionary institution effect and indicates a weak institutional structure.

Obydenkova and Arpino (2018) examined the relationship between corruption and the 2008 global economic crisis in European countries. The study's first finding was that corruption reduced trust in the national parliament during the crisis compared to before 2008. Additionally, it has been found that corruption and trust in the European Union (EU) correlated positively before the crisis. Consequently, states with higher levels of national corruption are more likely to rely on international institutions. However, this relationship disappeared after 2008.

In another study, Barnes and Beaulieu (2019) investigated the relationship between female politicians and corruption. Generally, people have more faith in female politicians in regards to corruption. According to the study, voters perceive women in political institutions as more risk-averse and more constrained by institutional oversight, leading to the perception that women are less likely to commit corruption. The study used the questionnaire method to research gender heterogeneity. The identification of informal institutional mechanisms is crucial to understanding women's role in politics and increasing trust in government.

Liu et al. (2019) examined corruption and entrepreneurship from an institutional perspective. The first finding is that corruption is a legitimate but informal institutional channel that facilitates entrepreneurship in subnational regions with underdeveloped institutional arrangements. It was found, however, that high levels of corruption had a negative impact on entrepreneurship and that corruption had a limited positive relationship with entrepreneurship. According to a nationwide survey on entrepreneurship in China, there is an inverted U-relationship between corruption and entrepreneurship. Therefore, low levels of corruption encourage entrepreneurship in the regions, while high levels discourage it.

A study by Şen (2020) focused on the economic and political factors that influence corruption. Economic determinants include economic growth, market competition, export and import levels, openness and globalization, wage levels, and inflation. Political determinants include the size of the government, the structure of the government, the government system, and e-government. In the study, the economic and political consequences of corruption were examined. In the first economic impact, corruption has both negative and positive effects on growth. Corruption's political consequences include misallocation of public resources, reduction in public revenues, ineffective use of public resources, and thus an increase in public expenditures.

It was also searched for empirical studies on the relationship between institutional quality and corruption in Turkey during the writing of this section, but none were found. Because, as stated in the Data and Analysis section, there is no sufficient publicly available data to



conduct time series analysis for Turkey. In this respect, this study is expected to contribute to the literature in this field.

### 3. Econometric Methodology

When the variables are not normally distributed, traditional estimations are biased. Therefore, whether the variables are normally distributed should be checked before the analysis. If the variables are not normally distributed, the RALS-ADF unit root test and RALS-EG cointegration test, which were used in this study, would be more accurate.

#### 3.1. RALS-ADF Unit Root Test

The traditional ADF unit root test equation is:

$$\Delta Y_t = \alpha + \gamma Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-1} + u_t \quad (1)$$

Applying the RALS procedure to equation 1 yields the RALS-ADF unit root test:

$$\Delta Y_t = \alpha + \gamma Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-1} + \widehat{w}_t' \varphi + v_t \quad (2)$$

In equation 2, The RALS term ( $\widehat{w}_t$ ) is the information term obtained from the residuals that occur when the errors are not normally distributed. In the RALS-ADF unit root analysis, the determination of the stationarity is made over the  $\gamma$  parameter. The null hypothesis of the ADF and RALS-ADF tests is that the series has a unit root (Im et al., 2014).

#### 3.2. RALS-EG Cointegration Test

The regression equation for the EG cointegration test is as follows:

$$\Delta \widehat{u}_t = d_{1t} + \delta_1 \widehat{u}_{t-1} + \sum_{i=1}^k \varphi_i \Delta \widehat{u}_{t-1} + e_t \quad (3)$$

The RALS-EG cointegration test is obtained by applying the RALS procedure to equation 4:

$$\Delta \widehat{u}_t = d_{1t} + \delta_1 \widehat{u}_{t-1} + \sum_{i=1}^k \varphi_i \Delta \widehat{u}_{t-1} + \widehat{w}_t' \gamma + e_t \quad (4)$$

In equation 4, the information that the errors are not normally distributed is added to the cointegration model with the  $\widehat{w}_t$  term. The  $\delta_1$  parameter in this equation is used to determine whether or not there is cointegration. The null hypothesis for the RALS-EG cointegration test is that there is no cointegration relationship ( $\delta_1 = 0$ ) when the errors are not normally distributed. This new cointegration test uses t statistics over the following assumption limit (Lee et al., 2015).

$$t_{REG} \rightarrow \rho \cdot t_{EG} + \sqrt{1 - \rho^2} \cdot Z$$

In the equation,  $t_{EG}$  is the t statistics for the EG test, and  $t_{REG}$  is the t statistics for the RALS-EG cointegration test. The Z term in the equation is the random variable for the standard normal distribution.

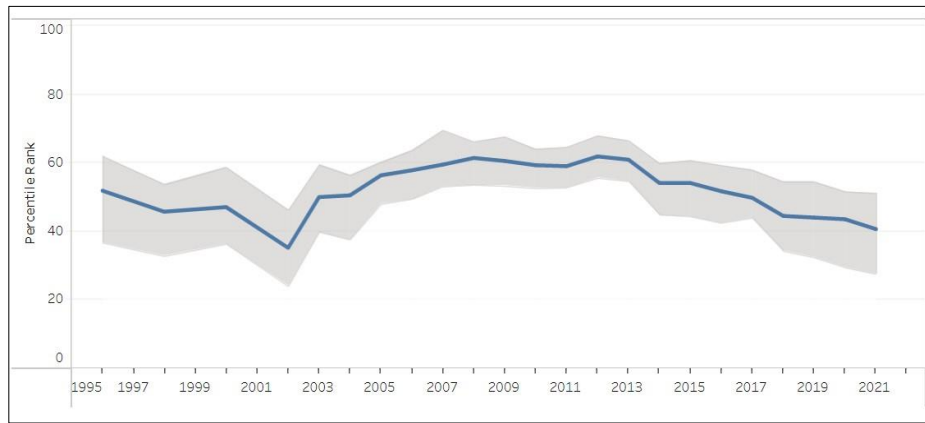
### 4. Data and Analysis

This study examined different periods, and the results are summarized below. It is explained in the literature section that there are varying findings regarding the relationship between institutional quality and corruption. A difference in these results may be due to a difference in the period, the data set, and the method used.

#### 4.1. Data

The first studies on corruption analysis were conducted in the 1980s. Corruption data for Turkey were annually prepared and dates back to the mid-1990s. For example, Figure 1 shows control of corruption data obtained from the Worldwide Governance Indicators database of the World Bank. This index measures perceptions of corruption and capture of the state by private interests and elites. The index is rated as percentile rank (ranges from 0 (lowest) to 100 (highest) rank). According to the graph, the corruption index rose in the early 2000s but fell to after 2014. This index dates back to 1996 and was measured every two years until 2002. Since 2002, it has been calculated annually. Similarly, the Transparency International database starts from 1995 and is calculated annually. However, these data could not be used. Because the period covers 25 years, time series analysis will not give robust results.

Figure 1: Control of Corruption

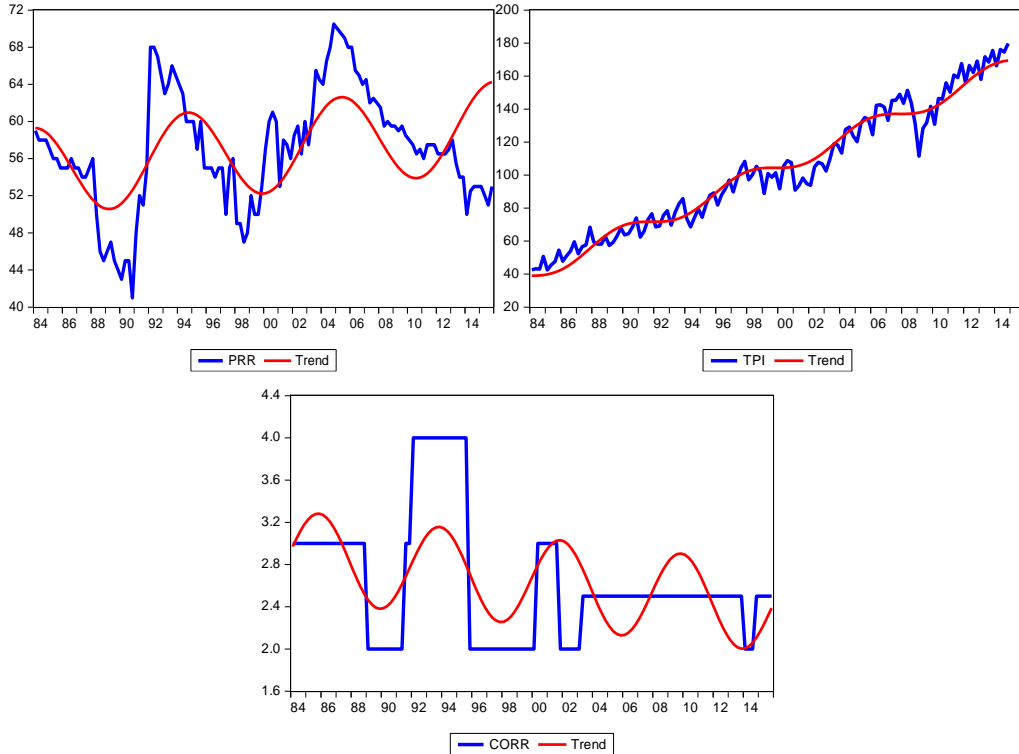


Source: Worldwide Governance Indicators

Quarterly data of Turkey between 1984 and 2015 were used in the analysis. The variables used are the political risk rating, corruption, and the total production index. The political risk rating and corruption variables were obtained from the International Country Risk Guide (ICRG) database, and the total production index data was obtained from the Central Bank of the Republic of Turkey. Quarterly use of the data set was preferred to increase the power of the tests. In addition, the data set is important in considering both the coalition periods and the single-party period of Turkey after 1980. The post-2015 period was not included in the analysis because it included a coup attempt and a change in the management system. The total production index<sup>2</sup>, which is used as a control variable in the cointegration test, was chosen to represent the national income and the size of the public. The variables related to national income and the size of the public sector could not be used directly in the analysis since they started to be prepared quarterly towards the end of the 1990s. Variables used in the model are presented in Figure 2.

<sup>2</sup> The total production index starts from 1985.

Figure 2: Variables in the Model



Source: It was prepared using the mentioned databases by the author.

In Figure 2, the corruption variable is defined as CORR, political risk rating as PRR, and total production index as TPI. The PRR<sup>3</sup> measures the political risks of countries and is used as an independent variable in our model to represent institutional quality. When glancing at the PRR's components, it is clear that many different factors are evaluated within this variable, and as a result, PRR represents the institutional structure's quality. If a country's PRR score is below 50, it is considered to have very high risk, between 50 and 60 high risk, 60-70 moderate risk, 70-80 low risk, and 80-100 very low risk. When looking at the path of the PRR in Turkey, a fluctuating graph emerges. Throughout the 1990s, risks tended to rise, but the risks started to decrease as of the early 2000s. Political risks have increased following the global financial crisis. Despite the general trend appearing to be a fixed line, looking at the Fourier trend reveals gradual upward and downward breaks. These breaks indicate that the political risk is not a static factor, and it is subject to change. This means that it is important to monitor the political risk environment and adjust strategies accordingly.

<sup>3</sup> According to the ICRG methodology, the components of PRR are: government stability, socio-economic conditions, investment profile, internal and external conflicts, corruption, military dominance in politics, religious and ethnic tensions, law and order, democratic accountability, and the bureaucracy quality. <https://www.prsgroup.com/wp-content/uploads/2012/11/icrgmethodology.pdf> (Accessed: 20.12.2021)

Another independent variable in our model, the TPI index, showed a rising trend. The upward trend is also characterized by seasonality. Growth rates in the 1990s were relatively slow compared with the 2000s. Production is affected by both the Turkish economic crisis and the crises of foreign countries. Following the global financial crisis, the TPI increased significantly. The TPI index has been steadily increasing since the beginning of the 2010s, with a few minor fluctuations. This trend is expected to continue in the future, as the Turkish economy continues to expand and foreign trade increases. This suggests that the TPI index is highly sensitive to external and internal economic events, demonstrating its potential as a leading indicator for production in the Turkish economy.

CORR, which is used as a dependent variable, measures corruption in the system. The ICRG methodology states that corruption poses a threat mainly to foreign investors, distorts the economic and financial environment, reduces efficiencies, and ultimately creates internal instability. The corruption index is scored between 0-6. Especially in the 1990-1996 period, the corruption score increased to 4, and the risks in this area increased considerably. In the 2000s, the average corruption index is progressing at 2.5 points. The current score of 2.5 is still considered high, and highlights the fact that corruption continues to be an issue in Turkey. Accordingly, CORR follows a Fourier trend with more frequent and severe breaks and a slight downtrend. CORR remained constant for some periods. Based on this, it has a gradual changing structure than other variables. Due to its lack of sharp peaks and troughs, CORR is not as volatile as other variables, which makes its changing structure comparatively more complex. Therefore it requires careful analysis and monitoring to identify any significant changes. It is important that governments and businesses take proactive steps to address this issue to ensure a safe and fair investment environment.

#### 4.2. Analysis and Findings

The correlation between the CORR and PRR variables is 0.451 for 1984Q1-2015Q4 but 0.725 for 1984Q1-2002Q3, including coalition periods. The two periods will be analyzed separately due to the significant difference in correlation coefficients. In our analysis, it is expected that there will be a relationship between institutional quality and corruption, especially in the coalition period. Because the political instability caused by the ever-changing coalition governments in the 1990s prevented the effective functioning of the audit mechanism, and corruption increased (Colella, 2020: 38-41).

#### 4.3. Findings Regarding the Entire Period

In this section, the period 1984Q1-2015Q4 has been analyzed. First, normality tests for the variables were carried out with the Jarque-Bera normality test. This test determines whether the regression residuals of the sample data have a normal distribution. The null hypothesis of this test is that the variables are normally distributed. The results are given in Table 1.

Table 1: Jarque-Bera Test Results

Variable	Level JB statistics	p-value
PRR	0.358	0.835
CORR	22.098	0.000
TPI	6.647	0.032

It can be seen from Table 1 that the PRR variable follows a normal distribution. CORR and TPI are not normally distributed since the null hypothesis is rejected. Therefore, the RALS-ADF unit root test should be preferred.

RALS-ADF unit root test results are shown in Table 2. The model with constant was chosen for this analysis<sup>4</sup>.

Table 2: RALS-ADF Unit Root Test Results

Variables	Level t-statistics	Rho	First Difference t-statistics	Rho
PRR	-2.531	0.747	-13.698	0.755
CORR	-0.725	0.302	-20.402	0.298
TPI	-0.470	0.744	-17.905	0.158

Note: The critical values at the significance levels of 1%, 5% and 10%, respectively: -2.957, -2.289, -1.933 for the 0.2 rho value; -3.061, -2.402, -2.060 for the 0.3 rho; -3.344, -2.732, -2.419 for the 0.7 rho value; -3.391, -2.781, -2.465 for the 0.8 rho value.

A comparison is made between the results in Table 2 and the critical values. Due to the non-rejection of the null hypothesis for all variables, the series have a unit root and are non-stationary. As soon as the first differences of the variables are compared with the critical values, it is determined that all the variables become stationary. Therefore, all variables in the model are I(1). Since the variables are stationary at the same level, the existence of a long-term relationship can be determined using the RALS-EG cointegration test. Table 3 presents the results of this test.

Table 3: RALS-EG Cointegration Test Results

	Test Statistics	Rho
RALS-EG (Constant)	-0.648	0.477
RALS-EG (Constant and Trend)	-1.161	0.58

Note: Critical values of RALS-EG test at 1%, 5%, and 10% significance levels for 0.5 rho for the model with constant: -3.887, -3.246, -2.909. Critical values of RALS-EG test at 1%, 5%, and 10% significance levels for 0.6 rho for the model with constant and trend: -4.302, -3.689, and -3.357.

When the results of Table 3 are examined, the null hypothesis cannot be rejected in the model with constant and in the model with constant and trend. According to both RALS-EG tests, there is no long-term cointegration relationship between the variables.

#### 4.4. Findings Regarding the Coalition Period

This section covers the years 1984Q1 to 2002Q3. In the continuation of the study, this period is called the "coalition period." Corruption has been prominent in coalition governments formed by various parties in Turkey during the 1990s (Çakır, 2020). This is why the coalition period was studied separately. A higher correlation exists between PRR and CORR variables in the coalition period than in the entire period. Findings are expected to reveal a cointegration between corruption and institutional structure. The method used in

<sup>4</sup> When the graphs of the series are examined, it seems more appropriate to use the model with constant. In addition, the reason for choosing the model with constant is that the variables become stationary at the first level in both the RALS-ADF unit root test and the ADF unit root test. According to the RALS-ADF unit root test results in the model with constant and trend, the variables do not become stationary even at the second level.

this section is the same as in the previous section. First, the normality test of the variables was performed, and the results are presented in Table 4.

Table 4: Jarque-Bera Test Results in the Coalition Period

Variables	Level JB statistics	p-value
PRR	0.504	0.777
CORR	6.298	0.042
TPI	1.641	0.440

When Table 4 is examined, the PRR variable is normally distributed, similar to the results of the entire period. However, CORR and TPI variables are not normally distributed. Likewise, the RALS-ADF unit root test was preferred for the analysis.

The RALS-ADF with constant unit root test results are shown in Table 5.

Table 5: RALS-ADF Unit Root Test Results in the Coalition Period

Variables	Level t-statistics	Rho	First Difference t-statistics	Rho
PRR	-2.451	0.762	-9.926	0.755
CORR	0.030	0.286	-15.857	0.298
TPI	-1.058	0.892	-21.155	0.158

Note: The critical values at the significance levels of 1%, 5% and 10%, respectively: -2.957, -2.289, -1.933 for the 0.2 rho value; -3.061, -2.402, -2.060 for the 0.3 rho; -3.344, -2.732, -2.419 for the 0.7 rho value; -3.444, -2.845, -2.529 for the 0.9 rho value.

According to the results obtained in Table 5, all variables have unit roots in the coalition period. When the first difference of the variables is taken, it is determined that they become stationary. The variables are stationary at the same level in the coalition period, and the RALS-EG cointegration test was used in the analysis. The results are given in Table 6.

Table 6: RALS-EG Cointegration Test Results in the Coalition Period

	Test Statistics	Rho
RALS-EG (Constant)	-3.147	0.959
RALS-EG (Constant and Trend)	-2.788	0.915

Note: Critical values of RALS-EG test at 1%, 5%, and 10% significance levels for 1 rho for the model with constant: -4.428, -3.808, -3.492. Critical values of RALS-EG test at 1%, 5%, and 10% significance levels for 0.9 rho for the model with constant and trend: -4.687, -4.092 and -3.764.

According to the results of Table 6, the null hypothesis cannot be rejected in both RALS-EG models. As a result, there is no long-term cointegration relationship between the variables in the coalition period.

## 5. Conclusions and Discussion

This study examines the relationship between corruption and the quality of Turkey's institutional structure. The importance of institutional structure and the rule-based and accountable functioning of political processes in combating corruption is stressed, as better institutional quality leads to a reduction of corruption and a boost in economic growth.

An econometric analysis was conducted using quarterly data from 1984 to 2015 to reveal the relationship between institutional quality and corruption in Turkey. The RALS-ADF unit root test and the RALS-EG cointegration test were used, both newly developed techniques. Among the variables used, CORR was the dependent variable, PRR was the independent variable, and TPI was the control variable.

Analyses are divided into two parts. As part of the first analysis, the entire period 1984-2015 was taken into account. During this time period, both coalitions and single-party governments were in power. The second analysis used only the data between 1984 and 2002, including the coalition period. There was no cointegration relationship between corruption level and institutional quality in both analyses. The findings are similar to those from Aidt et al. (2008), Meon and Sekkat (2005), and Meon and Weill (2010). Turkey has a medium or high political risk level, based on the PRR variable's overall trend. There is a need to enhance the quality of Turkish institutions based on these statistics. Consequently, institutional structure and corruption do not have a long-term relationship. Moreover, production level is neither positively nor negatively connected with corruption in the long run.

As a result of the findings, it is necessary to improve the quality of our country's institutional structure first. In the long run, higher economic performance can be achieved by developing corruption control, property rights, and fundamental rights and freedoms in Turkey. A key component of Turkey's improved economic performance is the development of its institutional structure, particularly between 2002 and 2007. Due to the post-crisis slowdown in the EU process, institutional reforms and property rights could not be continued. This led to fluctuations in economic indicators (Çiçen, 2019).

In addition, limited progress has been made in the fight against corruption in Turkey in recent years (Hayaloğlu and Artan, 2014: 361-362). Future empirical studies should examine the determinants and significant factors that influence corruption levels in Turkey. In light of the findings, it will be possible to identify institutional factors that can help reduce corruption. This will result in the development of new policies and corruption prevention strategies.

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## Aircraft Selection Decision Support Model for Fleet Planning of the Low Cost Airlines

Cem Güntüt<sup>1</sup>

Meriç H. Gökdalay<sup>2</sup>

<b>Düşük Maliyetli Havayollarının Filo Planlaması için Uçak Seçimi Karar Destek Modeli</b>	<b>Aircraft Selection Decision Support Model for Fleet Planning of the Low Cost Airlines</b>
<b>Öz</b> Bu çalışmada, düşük maliyetli havayolunun filo planlama kararında uçak tipi seçimi için bir karar destek modeli oluşturulmuş ve model için teknik, ekonomik, çevresel, politik ve diğer kriterler olmak üzere 5 ana grup kriteri içinde 21 alt kriter belirlenmiştir. Bu karar destek modelinde Bulanık TOPSIS ve Bulanık MOORA çok kriterli karar verme yöntemleri kullanılmış ve Airbus, Boeing, Embraer ve Airbus/Bombardier uçak üreticilerine ait 17 farklı dar gövde uçak tipleri değerlendirilmeye alınmıştır. Değerlendirmede uçak tipleri içinde düşük maliyetli havayolu iş modeli için en uygun ve tercih edilen uçağın Airbus A321 NEO olduğu belirlenmiştir.	<b>Abstract</b> In this study, a decision support model was created for the aircraft type selection in the fleet planning decision of a low-cost airline and 21 sub criteria were determined for the model in five main groups as technical, economic, environmental, political and other criteria. In this decision support model, the Fuzzy TOPSIS and Fuzzy MOORA Multi Criteria Decision methods were applied, and 17 different narrow body aircraft types produced by Airbus, Boeing, Embraer, and Airbus/Bombardier aircraft manufacturers were evaluated. In the evaluation, it was found that Airbus A321NEO was the most preferable aircraft for the low-cost airline business model among the aircraft types.
<b>Anahtar Kelimeler:</b> Düşük Maliyetli Havayolları, Uçak Seçimi, Bulanık ÇÖKV, TOPSIS, MOORA	<b>Keywords:</b> Low-Cost Airlines, Aircraft Selection, Fuzzy MCDM, TOPSIS, MOORA
<b>JEL Kodları:</b> M00, C00	<b>JEL Codes:</b> M00, C00

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Çalışmanın tamamı iki yazar ile birlikte oluşturulmuştur.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

Since the 1980s, with the effect of deregulation, liberalization, and privatization trends in air transportation, airline companies have tried to take advantage of the opportunities offered by these trends and have introduced new business models (Kiracı and Akan, 2020:1).

One of these new business models has been the low-cost airline model. Airline companies that adopt the low-cost airline business model prefer point-to-point flight network structure, use secondary airports at flight points, have similar aircraft types in terms of operational costs in their fleets, provide limited services within the aircraft and the terminal building, and provide transportation to passengers who care about price by reducing costs. These airlines aim to provide the highest level of service to their demand at a low cost and maximize their profitability within the framework of the business model they have adopted.

One of the most essential strategic decisions of low-cost airlines in line with their visions and missions is the decision made on fleet planning to hold on to the market, maintain their existence in the long term and be successful in competition against traditional airlines. While making the company's future strategic decisions, airline companies first set their goals within the framework of the business model they have adopted.

In achieving these goals, it is of vital importance which criteria will be taken into consideration for the aircraft acquisition, which requires very large capital, and which aircraft will be included in the fleet as a result. In fleet planning, aircraft selection plays a very important role both in terms of the financial income and in terms of operating within the frame of the business model adopted by airline companies (Belobaba, 2009:154). Because aircraft fleets are capital-intensive, long-lasting investment assets for an airline, they can affect the company's performance and future for decades (Brüggen, 2010: 299).

In the literature, many studies have been performed for different fields of the air transport sector on aircraft selection. In these studies, mainly Multi-criteria Decision Making (MCDM) applications were used, decision support models were studied on the selection of fighter aircraft, trainer aircraft, aircraft for the general aviation sector, and passenger aircraft and cargo aircraft for commercial airline companies.

In this research, the problem of aircraft selection among the alternatives composed of new generation and classical aircraft models for the fleet planning of low-cost airlines has been studied. Since different technical and economic advantages and disadvantages of the alternatives, requirements of the environments in which they operate, the preferences and perceptions of the passengers served, and the considerations of the airlines for their own strategies, require many criteria to be considered aircraft selection decision creates an uncertain environment with many alternatives and criteria. For this reason, MCDM methods were thought to be appropriate for the decision support model, and since the experiences and perceptions of decision makers are very effective in their evaluations within the framework of the dynamics of the sector, the Fuzzy Logic application was used for selected MCDM methods which are TOPSIS and MOORA. The following parts of the study are formed as follows. Part 2 covers research on aircraft selection models, Part 3 covers methods and materials, Part 4 covers model setup and findings and results, and Part 5 provides the conclusion.

## 2. Literature Background

There are many studies in the literature on aircraft selection decision support models for fleet planning of airline companies. When the models in these studies are examined from the methodological point of view, it is seen that MCDM methods are mainly used, and the alternative aircraft selected is determined according to the business models of the airlines.

Some of the studies on aircraft selection are on aircraft used for activities other than passenger transport, such as business jet selection in civil aviation within the scope of general aviation (Gürün, 2015), selection of training aircraft (Wang and Chang, 2007; Ardil, 2020a; Küçükyılmaz et al., 2020), selection of fighter aircraft (Ardil et al. 2019; Hoan and Ha, 2021).

Among these studies, the Analytical Hierarchy Process (AHP) method was used by Gürün (2015) for the selection of business jets. In the studies on the selection of fighter aircraft, the full consistency method (FUCOM)- the additive ratio assessment (ARAS) approach (Hoan and Ha, 2021), the combination of entropy index and additive multiple criteria decision making analysis (Ardil, et al. 2019), AHP based TOPSIS combined with Fuzzy Logic (M.Sánchez-Lozano et al. 2015), and in studies on the selection of trainer aircraft, the AHP integrated TOPSIS method for a flight school (Küçükyılmaz, et al. 2020) and integrated objective weighting procedures (the mean weight, entropy weight) and PARIS, and TOPSIS methods (Ardil, 2020a) were used. On the other hand, Wang and Chang (2007) studied the application of Fuzzy TOPSIS model for the selection of initial trainer aircraft for Taiwan Air Force.

In the literature, the studies are mainly on aircraft selection models for airline fleets operating on passenger transportation. The types and evaluation criteria of the aircraft considered for the fleets of airlines operating on passenger transport are quite different from business jets, trainer aircraft and fighter aircraft. In the studies on passenger transportation, for regional scheduled and non-scheduled airlines, aircraft with low seat capacity such as Cessna Fairchild Metro, Beechcraft, De Havilland, Dornier, Bombardier, ATR, Embraer, and Mitsubishi models have been evaluated and they have been compared with the criteria related to the technical features, financial, quality, interior design (Gomes et al. 2014: 231; Doziç and Kalic, 2015: 912; Bruno et al. 2015: 5584; Doziç et al. 2018: 170; Sk et al. 2020: 72; Kocakaya et al. 2021: 45; Ardil, 2020b: 381; Bakır et al., 2021: 435).

There are also many studies on aircraft selection models for the fleet structures of airlines operating with different network structures such as full-service carriers and low-cost carriers for passenger transportation. In these studies, A319Neo, A320Neo, A321Neo, A319, A320, A321, B737-Max7, B737-Max8, B737-Max9, B737-800, B737-900, aircraft which operate in short and medium ranges were evaluated. The studies on the selection of aircraft for passenger transportation in the literature are tabulated in the Table 1.

In this study, 17 different narrow body aircraft types produced by Airbus, Boeing, Embraer, and Airbus/ Bombardier aircraft manufacturers, which are most frequently used by low-cost airlines to operate in short and medium range were determined with 7 experts responsible for airline fleet planning working at airlines operating in Turkey and the aircraft selection model was constructed with a total of 21 criteria, including 5 main criteria.

**3. Methodology: Fuzzy TOPSIS and Fuzzy MOORA**

**3.1. Fuzzy Set Theory**

The situations that people encounter in the environments they live in are quite complex. This complexity stems from the inability to make decisions due to uncertainty. In the face of many situations, people verbally express their opinions, appreciations, and value judgments during the decision-making process. These imprecise value expressions which cannot be expressed numerically are called as fuzziness (Gökdalay and Evren,2008: 158). L.A Zadeh (Zadeh, 1965) who first introduced the concept of fuzziness in solving such problems, developed Fuzzy Set Theory.

Table 1: Summary of the Studies made on the selection of Passenger Aircraft in the Literature

Author	Methods Used	Criteria	Aircraft Type	Aim
Ardil (2022),	Entropy weighted DUD (decision uncertainty distance) hybrid/ TOPSIS	Aircraft baggage capacity, maximum take-off weight (MTOW), seat capacity, price, speed, environmental cost, cost per available seat mile (CASM)	N/A	Aircraft selection problem for a civil aviation company.
Deveci et al. (2021)	Entropy-based WASPAS/ interval type-2 hesitant fuzzy sets (IT2HFS)	Revenue (expected load factor, passenger revenue, cargo revenue), Capacity (Economy cabin seat capacity, business cabin capacity), customer expectation (Economy cabin product, business cabin product), Cost (Fixed cost of operation, variable cost of operation), Competition (competitor's aircraft type)	B738, B78C, B79L, A321 A32C, A320, A319	Aircraft selection problem for a full-service carrier on a given route
Ilgin (2019)	Linear Physical Programming	fuel consumption, luggage volume, number of seats, price, range,	A319 NEO, A320NEO, A321 NEO, B798MAX 7, B737 MAX8, B737 MAX9.	Short and medium range aircraft selection for an hypothetical airline
Kiraci et al. (2018a)	TOPSIS	range, cost, speed, seat capacity, and fuel consumption	A320, A321, B737-800 and B737-900ER	Aircraft selection problem for an airline with different flight network structure and different flight destinations
Kiraci et al. (2018b)	AHP, COPRAS, MOORA	Price, Range, Speed, Seating Capacity, Fuel Consumption, Maximum Payload	A320, A321, B737-800 and B737-900ER	Determination of the best aircraft according to the criteria selected.
Kiraci and Akan, 2020)	AHP and TOPSIS in interval type-2 fuzzy Sets	Technical (expected service life of the aircraft, fuel consumption per seat mile, maximum take-off weight, aircraft seat capacity) , Economical (price of aircraft operating cost, ), Environmental (noise pollution,)	A319Neo, A320Neo, A321Neo, B737Max7, B737Max8, B737Max9	Aircraft selection problem for a commercial airline

Özdemir et al. (2011)	Analytical Network Process (ANP)	cost (maintenance cost, purchasing cost, operation and spare cost, salvage cost) , time (useful life , delivery time), physical attributes and others (Dimensions, Reliability, and Suitability for Service, Quality Security)	A319, A320, B737	medium-range aircraft selection problem for Turkish Airlines
Özdemir et al. (2011)	Analytical Network Process (ANP)	cost (maintenance cost, purchasing cost, operation and spare cost, salvage cost) , time (useful life , delivery time), physical attributes and others (Dimensions, Reliability, and Suitability for Service, Quality Security)	A319, A320, B737	medium-range aircraft selection problem for Turkish Airlines
Semercioğlu and Özkoç (2019)	AHP Supported Social Selection Process	A/C Characteristics (Seating capacity, range, MTOW), Cost (purchasing cost, maintenance cost, available seat-km cost) , other factors contributing additive values (delivery time, payment conditions, variety of in fleet structure, passenger expectation, comfort)	A319, A320, B737	the selection of three different aircraft types flying at short and medium ranges in airlines
Sun et al. 2011	ELECTRE, SAW and TOPSIS	cabin volume per passenger cruise speed, fuel consumption per seat mile,	B 747-400, B777-200 and A340-300 (wide bodied aircraft)	Aircraft selection problem,for an airline company
Yılmaz (2006)	AHP and Fuzzy AHP	general system features, technology level used in the aircraft, structural system features, engine features, maintenance features, component capability gaining features, technical support, operation and spare part costs, flight control systems, similarity to the existing fleet	A321-200, A320-200 B737-800/ 900	medium-range aircraft selection problem for Turkish Airlines

Fuzzy Set Theory has been applied to many methods and has been used in many application areas. In this study, fuzzy triangular numbers have been used because it is easy to use and calculate for the Decision Makers in the Aviation Industry.

In a fuzzy set( $\tilde{A}$ ), the membership function values are between 0 and 1, and the membership function is as shown in equation (1) (Gökdalay and Evren, 2009: 161).

$$\mu_{\tilde{A}}(x) = \begin{cases} 0, & x \leq a \\ \frac{x-a}{b-a}, & a \leq x \leq b \\ \frac{c-x}{c-b}, & b \leq x \leq c \\ 0, & x \geq c \end{cases} \quad (1)$$

**3.2. Fuzzy TOPSIS**

In the studies on aircraft selection models in the literature, MCDM methods have been mainly applied and it has been seen that TOPSIS is highly preferred among these methods. TOPSIS, which is one of the multi-criteria decision-making methods, gives the ranking of alternatives from the most ideal to the least preferred alternative as a ranking technique, and in this study, it has been thought that TOPSIS method allows low-cost airlines to purchase the most ideal aircraft or to evaluate other alternatives in terms of compatibility with the aircraft in their current fleet, taking into account the ranking. For this purpose, it is aimed that the airline industry can easily use this decision support model and in the preference of the TOPSIS method, it has been effective because it is easy to evaluate many alternatives according to many criteria, calculation technique is easy, it is less time consuming and not more complicated than methods that require pairwise comparisons. In the TOPSIS method, developed by Yoon and Hwang in 1981, it is possible to choose the best solution among alternatives by using positive and negative ideal solution points, and the alternative closest to the positive ideal solution and the farthest from the negative ideal solution is evaluated as the best alternative (Razmi et al.2009: 594). Whereas the positive ideal solution is the one that maximizes the benefit criterion and minimizes the cost criterion, the negative ideal solution is the one that maximizes the cost criterion and minimizes the benefit criterion (Wang and Elhag, 2006:312). The steps of the TOPSIS method in fuzzy logic application is given as follows (Delice, 2016: 267).

1. Step: Decision makers who will evaluate the problem, alternatives to be evaluated and evaluation criteria are determined.

$D = \{d= 1, 2, 3...t\}$  decision makers in the problem

$A_i = \{i= 1, 2, 3...m\}$  alternatives which is evaluated in the problem

$C_j = \{j= 1, 2, 3...n\}$  main criteria in the problem

$C_{jk} = \{k=1,2,3...p\}$  subcriteria in the problem

2. Step: The importance weights of the main criteria and sub-criteria are given by the decision makers, and the alternatives are evaluated according to the criteria. These evaluations and importance weights are first made with verbal variables and then these verbal expressions are converted into triangular numbers according to the scale used in the problem. The importance weightings and evaluations of the decision makers are combined into a group decision as in equation (2) and (3) below.

$$\tilde{w}_{ij} = \frac{1}{K} [w_j^1 + w_j^2 + w_j^3 \dots \dots + w_j^K] \quad (i = 1,2,3 \dots \dots m) \tag{2}$$

$$\tilde{x}_{ij} = \frac{1}{K} [x_{ij}^1 + x_{ij}^2 + x_{ij}^3 \dots \dots + x_{ij}^K] \quad (i = 1,2,3 \dots \dots m) \tag{3}$$

3. Step: As seen in Equation (4), fuzzy weight and decision matrices are created.

$$\tilde{D} = \begin{bmatrix} \tilde{x}_{11} & \tilde{x}_{12} & \dots & \tilde{x}_{1n} \\ \tilde{x}_{21} & \tilde{x}_{22} & \dots & \tilde{x}_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ \tilde{x}_{m1} & \tilde{x}_{m2} & \dots & \tilde{x}_{mn} \end{bmatrix} \quad \tilde{W} = [ \tilde{W}_1, \tilde{W}_2 \dots \dots \tilde{W}_n ] \tag{4}$$

$i = 1,2,3 \dots m; j = 1,2,3 \dots n$



4. Step: The criteria in the fuzzy decision matrix are normalized by using equation (5) for the benefit criterion (B) and equation (6) for the cost criterion (C).

$$\tilde{r}_{ij} = \left( \frac{a_{ij}}{c_j^*}, \frac{b_{ij}}{c_j^*}, \frac{c_{ij}}{c_j^*} \right) \quad j \in B \quad (5)$$

$$\tilde{r}_{ij} = \left( \frac{a_j^-}{c_{ij}}, \frac{a_j^-}{b_{ij}}, \frac{a_j^-}{a_{ij}} \right) \quad j \in C \quad (6)$$

$$\tilde{r}_{ij} \text{ normalized decision values } c_j^* = \max_i c_{ij}, \quad a_j^- = \min_i a_{ij}$$

5. Step: By using Equation (7), the weighted normalized decision matrix is created.

$$\tilde{U} = [\tilde{u}_{ij}]_{m \times n} \quad i=1,2,3..m \quad j=1,2,3....n$$

$$\tilde{u}_{ij} = \tilde{r}_{ij} \tilde{w}_j \quad (7)$$

6. Step: The fuzzy positive ideal solution ( $\tilde{A}^*$ ) and the negative ideal solution ( $\tilde{A}^-$ ) are determined as in equation (8) and equation (9).

$$\tilde{A}^* = (\tilde{u}_1^*, u_2^*, \dots, u_n^*) \quad i = 1,2,3 \dots \dots m \quad j = 1,2,3 \dots \dots n \quad (8)$$

$$\tilde{A}^- = (\tilde{u}_1^-, u_2^-, \dots, u_n^-) \quad i = 1,2,3 \dots \dots m \quad j = 1,2,3 \dots \dots n \quad (9)$$

$$\tilde{u}_i^* = \max_i u_{ij}, \quad \tilde{u}_j^- = \min_i u_{ij}$$

7. Step: By using Equation (10) and Equation (11), the distances of the alternatives from the fuzzy positive and negative ideal solutions are calculated.

$$D_i^* = \sum_{j=1}^n d(\tilde{u}_{ij}, \tilde{u}_j^*) \quad i = 1,2,3 \dots \dots m \quad (10)$$

$$D_i^- = \sum_{j=1}^n d(\tilde{u}_{ij}, \tilde{u}_j^-) \quad i = 1,2,3 \dots \dots m \quad (11)$$

The expressions  $D^*(\tilde{u}_{ij}, \tilde{u}_j^*)$  and  $D^-(\tilde{u}_{ij}, \tilde{u}_j^-)$  in the above equations show the distances between two fuzzy numbers, and the Vertex method in equation (11) is used to calculate these distances. In this method, the distance between two fuzzy numbers is calculated as in the equation (12). Let say  $\tilde{S} = (a, b, c)$  and  $\tilde{T} = (d, e, f)$

$$D(\tilde{S}, \tilde{T}) = \sqrt{\frac{1}{3}[(a-d)^2 + (b-e)^2 + (c-f)^2]} \quad (12)$$

8. Step: For each alternative, the closeness coefficients (CC) to the ideal solution are calculated as in the equation (13).

$$CC_i = \frac{D_i^-}{(D_i^* + D_i^-)} \quad (13)$$

$$i=1,2, \dots, m \quad 0 \leq C_i \leq 1$$

9. Step: All alternatives are ranked according to their closeness coefficients from the largest one to the smallest one. The alternative with the largest closeness coefficient is determined as the best alternative.

### 3.3 Fuzzy MOORA

The MOORA method, which is used in many areas in the literature, is one that is not widely used on aircraft selection problem. Multi-objective optimization based on ratio analysis (MOORA) method, which was introduced to the literature by Brauers and Zavadskas (2006), is one of the newly developed MCDM methods. It has been applied in many areas but has not been used widely for aircraft selection problem. MOORA method can be effectively applied as an appropriate tool for the ranking and selection of the alternatives among various set of available options. Compared to the other MCDM methods, short calculation time, easiness of mathematical processes and the feature of not requiring pairwise comparisons are the reasons for selecting MOORA method.

4. Step: In step 4, the fuzzy numbers in the weight matrix are converted to crisp numbers with the following formula, for example, a triangular fuzzy number is  $S = (a, b, c)$ , it is converted into the crisp number by using equation (14) (Şişman, 2016:307-308).

$$s = \frac{a_1 + 4 * b_2 + c_3}{6} \quad (14)$$

5. Step: The decision matrix is normalized with the vector normalization formulas in equations (15), (16), (17).

$$r_{ij}^a = \frac{x_{ij}^a}{\sqrt{\sum_{i=1}^n [(x_{ij}^a)^2 + (x_{ij}^b)^2 + (x_{ij}^c)^2]}} \quad (15)$$

$$r_{ij}^b = \frac{x_{ij}^b}{\sqrt{\sum_{i=1}^n [(x_{ij}^a)^2 + (x_{ij}^b)^2 + (x_{ij}^c)^2]}} \quad (16)$$

$$r_{ij}^c = \frac{x_{ij}^c}{\sqrt{\sum_{i=1}^n [(x_{ij}^a)^2 + (x_{ij}^b)^2 + (x_{ij}^c)^2]}} \quad (17)$$

6. Step: The weight matrix is combined with the normalized decision matrix with the equations (18), (19), (20)

$$v_{ij}^a) = W_j r_{ij}^a \quad (18)$$

$$v_{ij}^b) = W_j r_{ij}^b \quad (19)$$

$$v_{ij}^c) = W_j r_{ij}^c \quad (20)$$

7. Step: In this step, normalized performance values (S) are calculated in terms of benefit and cost criteria with the equations (21), (22), (23), (24), (25), (26).

$$S_1^{+a} = \sum_{j=1}^m (v_{ij}^a | j \in J^{enb}) \quad (21)$$

$$S_i^{+b} = \sum_{j=1}^m (v_{ij}^b | j \in J^{enb}) \quad (22)$$

$$S_i^{+c} = \sum_{j=1}^m (v_{ij}^c | j \in J^{enb}) \quad (23)$$

$$S_i^{-a} = \sum_{j=1}^m (v_{ij}^a | j \in J^{enk}) \quad (24)$$

$$S_i^{-b} = \sum_{j=1}^m (v_{ij}^b | j \in J^{enk}) \quad (25)$$

$$S_i^{-c} = \sum_{j=1}^m (v_{ij}^c | j \in J^{enk}) \quad (26)$$

8. Step: In this step, The normalized performance values are converted into non-fuzzy performance values by using the vertex method in the equation (27).

$$S_i = \sqrt{\frac{1}{3} * [(S_i^{+a} - S_i^{-a})^2 + (S_i^{+b} - S_i^{-b})^2 + (S_i^{+c} - S_i^{-c})^2]} \quad (27)$$

9. Step: Alternatives are ranked and the alternative with the highest value is preferred.

#### 4. Aircraft Selection Decision Support Model For Fleet Planning of Low Cost Airlines

##### 4.1 Model Structure

One of the most essential strategic decisions for an airline is which aircraft worth millions of dollars will be invested in and included in the fleet. For this reason, the decisions to be made in the selection of aircraft in the fleet planning process play the key role that will lead an airline to success or failure, especially in the medium and long term.

In the decisions to be made on fleet planning, the airline business model adopted by the airline company is of the utmost importance in shaping these decisions. In this study, it is aimed to create a decision support model that can help the airline managers in the decision-making process for the selection of the aircraft model for fleet planning process of a low cost airline.

In determining the criteria in the decision support model, while some of the criteria were created with experts responsible for the fleet planning of 3 airline companies operating in Turkey and some of them were taken from the studies in the literature.

One of the characteristics of companies that adopt the low-cost airline business model is that they have a homogeneous fleet structure consisting of narrow-body aircraft that can fly in short and medium ranges. Having similar aircraft structure, the same cabin and flight personnel can use all aircraft, the same maintenance personnel can maintain all aircraft, and crew planning studies can be facilitated. All these conveniences can provide advantages to companies in terms of costs (Demirci, 2016: 211). In this study, both classical and new generation aircraft of Airbus (A319 Neo, A320Neo, A321Neo, A319, A320, A321,) and Boeing

(B737-Max7, B737-Max8, B737-Max9, B737-Max20, B737-700, B737-800, B737-900 ER) as well as CS100, CS300, ERJ190 and ERJ195 aircraft mostly preferred by regional airlines, are taken as the alternatives to be evaluated. In the model, 5 main criteria and 21 sub-criteria were determined, and they are given in Table 2.

Table 2: Main criteria and Subcriteria used in the Model

CRITERIA	
<b>C<sub>1</sub></b>	<b>Technical Criteria</b>
C <sub>11</sub>	Range: The longest distance an aircraft can fly on its available fuel
C <sub>12</sub>	Carrying Capacity: The weight limits that the aircraft can carry as passengers and Cargo
C <sub>13</sub>	Fuel Efficiency: The ability of the aircraft to travel more with less fuel
C <sub>14</sub>	Auxiliary Equipment: Auxiliary equipment support provided by the aircraft manufacturer to the airline
C <sub>15</sub>	Spare Part: Availability of the parts in the market if the aircraft needs spare parts.
C <sub>16</sub>	Technical Support: how accessible the companies which will provide support if needed.
C <sub>17</sub>	Maximum Take-Off Weight (MTOW): Maximum weight aircraft can carry during Take Off.
C <sub>18</sub>	Utilization Period: Evaluation of how many hours per day the airline can use the aircraft
<b>C<sub>2</sub></b>	<b>Economical Criteria</b>
C <sub>21</sub>	Price Fiyat: Market price of the aircraft
C <sub>22</sub>	Demand: Demand for the aircraft in the market.
C <sub>23</sub>	Finance Options: Aircraft can be directly purchased or leased (dry lease/ wet lease). This criterion is an assessment of how well the aircraft manufacturer can offer these options.
C <sub>24</sub>	Aircraft Similarity: to use a single type of aircraft in the fleet or similar types of the same aircraft manufacturer.
C <sub>25</sub>	Cost per Available Seat Mile (CASM): Cost per Seat per mile
C <sub>26</sub>	Internal Rate of Return: The internal rate of return expresses how much-added value the investment will create.
<b>C<sub>3</sub></b>	<b>Political Criteria</b>
C <sub>31</sub>	Embargo: Aircraft manufactured by some countries are prevented from entering the embargo-sanctioned countries
C <sub>32</sub>	Foreign Policy: It is an important criterion for mostly state-run airlines. For example, countries that have foreign policy problems with the USA may prefer different aircraft instead of Boeing.
<b>C<sub>4</sub></b>	<b>Environmental Criteria</b>
C <sub>41</sub>	Noise: Evaluation of noise pollution during flight
C <sub>42</sub>	CO2 Emmission: Evaluation of the amount of CO2 emitted by airplanes
<b>C<sub>5</sub></b>	<b>Other Criteria</b>
C <sub>51</sub>	Passenger Satisfaction: evaluation of how much comfort the aircraft provides to the passengers
C <sub>52</sub>	Reliability: Criterion that can affect passenger aircraft preferences, such as jet-powered over propeller aircraft
C <sub>53</sub>	In-Flight Entertainment Systems: such as television, internet, music and movies offered on the flight

In the study, since the decision makers are experts in their professions, a 7-variable scale was used for evaluating alternatives and weighting the criteria in the model. One of the important steps of the MCDM problem is the weighing of the criteria. Many weighting methods have been developed in the literature, and they are classified as objective, subjective and hybrid. While it is not possible to take the personal opinions of the decision makers in objective weighting, the opinions of expert decision makers are taken for the criteria in subjective weighting. Hybrid methods are methods in which both weightings are used together. Due to the fact that airline industry is highly influenced by international and domestic environments such as trade, competition and politics by its nature, the use and operation conditions of the airlines' own aircraft and the importance weights of the related decision criteria may vary according to dynamic business conditions. For this reason, it was thought that it would be appropriate to integrate the subjective criterion weighting method

with linguistic expressions. In this study, Simple Weighting Method was preferred to make the model easy to be applied.

The degree of importance and evaluation scales used in the problem are given in Table 3.

Table 3: Scale used for Importance Weights and Evaluations of the Criteria

Scale for Importance Degree		Verbal Variables for Evaluation of Criteria	
Very Low (VL)	(0.0, 0.0, 0.1)	Very Poor (VP)	(0, 0, 1)
Low (L)	(0.0, 0.1, 0.3)	Poor (P)	(0, 1, 3)
Less Low (LL)	(0.1, 0.3, 0.5)	Less Poor (LP)	(1, 3, 5)
Moderate (M)	(0.3, 0.5, 0.7)	Moderate (M)	(3, 5, 7)
High Moderate (HM)	(0.5, 0.7, 0.9)	More Good (MG)	(5, 7, 9)
High (H)	(0.7, 0.9, 1.0)	Good (G)	(7, 9,10)
Very High (VH)	(0.9, 1.0, 1.0)	Very Good (VG)	(9,10,10)

Source: (Chen, 2000: 5)

## 4.2 Results and Discussion

In the study the calculation steps are as follows;

**1, 2, and 3. Steps:** The individual and integrated importance weights of the criteria in the model determined by the aircraft acquisition experts according to equation (1) and the performance decision matrix values for the alternatives determined according to equation (2), (3), (4) are shown in the Table 4 and Table 5 successively.

Table 4: Sub Criteria Weights and their Integrated Weights

Main Criteria	SubCriteria	Weights of Main and Sub Criteria	Integrated weights of the Criteria
<b>C<sub>1</sub></b>	<b>Technical Criteria</b>	<b>(0.786; 0.943; 1.000)</b>	
	C <sub>11</sub> Range	(0.757; 0.900; 0.971)	(0.595; 0.849; 0.971)
	C <sub>12</sub> Carrying Capacity	(0.671; 0.871; 0.986)	(0.528; 0.822; 0.986)
	C <sub>13</sub> Fuel Efficiency	(0.871; 0.986; 1.000)	(0.685; 0.929; 1.000)
	C <sub>14</sub> Auxiliary Equipment	(0.557; 0.743; 0.871)	(0.438; 0.700; 0.871)
	C <sub>15</sub> Spare Parts	(0.671; 0.843; 0.957)	(0.528; 0.795; 0.957)
	C <sub>16</sub> Technical Support	(0.643; 0.814; 0.943)	(0.505; 0.768; 0.943)
	C <sub>17</sub> Max. Take off Weight	(0.557; 0.757; 0.929)	(0.438; 0.714; 0.929)
	C <sub>18</sub> Utilization Period	(0.614; 0.800; 0.929)	(0.483; 0.754; 0.929)
<b>C<sub>2</sub></b>	<b>Economical Criteria</b>	<b>(0.871; 0.986; 1.000)</b>	
	C <sub>21</sub> Price	(0.843; 0.971; 1.000)	(0.734; 0.958; 1.000)
	C <sub>22</sub> Demand	(0.500; 0.700; 0.871)	(0.436; 0.690; 0.871)
	C <sub>23</sub> Financial Options	(0.786; 0.943; 1.000)	(0.685; 0.929; 1.000)
	C <sub>24</sub> Aircraft Similarity	(0.729; 0.900; 0.986)	(0.635; 0.887; 0.986)
	C <sub>25</sub> CASM	(0.843; 0.971; 1.000)	(0.734; 0.958; 1.000)
	C <sub>26</sub> Internal Rate of Return	(0.529; 0.729; 0.900)	(0.461; 0.718; 0.900)
<b>C<sub>3</sub></b>	<b>Political Criteria</b>	<b>(0.343; 0.529; 0.714)</b>	
	C <sub>31</sub> Embargo	(0.529; 0.729; 0.900)	(0.181; 0.385; 0.643)
	C <sub>32</sub> Foreign Policy	(0.400; 0.571; 0.729)	(0.137; 0.302; 0.520)
<b>C<sub>4</sub></b>	<b>Environmental Criteria</b>	<b>(0.343; 0.529; 0.714)</b>	
	C <sub>41</sub> Noise	(0.471; 0.657; 0.829)	(0.162; 0.347; 0.592)
	C <sub>42</sub> CO <sub>2</sub> Emissions	(0.500; 0.686; 0.843)	(0.171; 0.362; 0.602)
<b>C<sub>5</sub></b>	<b>Other Criteria</b>	<b>(0.329; 0.529; 0.729)</b>	
	C <sub>51</sub> Passenger Comfort	(0.486; 0.657; 0.800)	(0.160; 0.347; 0.583)
	C <sub>52</sub> Reliability	(0.614; 0.786; 0.914)	(0.202; 0.415; 0.666)
	C <sub>53</sub> In-Flight Entertainment Systems	(0.300; 0.471; 0.657)	(0.099; 0.249; 0.479)

Table 5: Fuzzy Decision Matrix of Aircraft Alternative Models

CRITERIA	A1 A319	A2 A320	A3 A321	A4 A319NEO	A5 A320NEO	A6 A321NEO
C <sub>11</sub>	(6.667; 8.500; 9.500)	(5.333; 7.333; 9.333)	(5.333; 7.333; 9.333)	(7.333; 8.833; 9.500)	(5.667; 7.667; 9.167)	(7.000; 8.667; 9.667)
C <sub>12</sub>	(4.333; 6.333; 8.000)	(6.333; 8.167; 9.333)	(8.000; 9.167; 9.500)	(4.000; 6.000; 7.6667)	(6.333; 8.000; 9.167)	(8.333; 9.500; 9.833)
C <sub>13</sub>	(3.571; 5.667; 7.333)	(3.667; 5.667; 7.667)	(4.333; 6.333; 8.333)	(6.667; 8.167; 9.167)	(6.667; 8.500; 9.667)	(7.333; 9.000; 9.833)
C <sub>14</sub>	(5.286; 7.000; 8.667)	(5.333; 7.333; 9.333)	(5.667; 7.667; 9.333)	(7.333; 9.000; 9.333)	(7.333; 9.000; 9.333)	(7.333; 9.000; 9.833)
C <sub>15</sub>	(5.571; 7.571; 9.000)	(6.714; 8.429; 9.429)	(6.429; 8.429; 9.714)	(6.429; 8.143; 9.429)	(7.000; 8.714; 9.714)	(7.000; 8.714; 9.714)
C <sub>16</sub>	(6.714; 8.429; 9.286)	(7.000; 8.714; 9.571)	(7.000; 8.857; 9.857)	(6.714; 8.714; 9.857)	(7.286; 9.000; 9.857)	(7.286; 9.000; 9.857)
C <sub>17</sub>	(4.333; 5.833; 7.167)	(5.000; 7.000; 8.500)	(7.667; 9.167; 9.833)	(6.000; 7.833; 9.167)	(6.000; 7.833; 9.167)	(8.333; 9.500; 9.833)
C <sub>18</sub>	(5.000; 7.000; 8.714)	(5.571; 7.571; 9.286)	(5.571; 7.571; 9.286)	(6.714; 8.571; 9.714)	(6.429; 8.286; 9.571)	(6.714; 8.571; 9.714)
C <sub>21</sub>	(3.857; 5.857; 7.714)	(3.571; 5.571; 7.429)	(2.714; 4.714; 6.571)	(2.714; 4.714; 6.714)	(1.286; 3.000; 5.000)	(2.286; 4.143; 6.143)
C <sub>22</sub>	(5.143; 6.571; 7.714)	(5.857; 7.857; 9.286)	(6.714; 8.429; 9.571)	(5.571; 7.286; 8.429)	(8.714; 9.857; 10.00)	(8.714; 9.857; 10.00)
C <sub>23</sub>	(5.571; 7.571; 9.000)	(5.000; 7.000; 8.714)	(5.000; 7.000; 8.714)	(6.143; 7.857; 9.000)	(5.571; 7.571; 9.000)	(5.571; 7.571; 9.000)
C <sub>24</sub>	(6.143; 8.143; 9.571)	(6.714; 8.571; 9.714)	(6.714; 8.571; 9.714)	(5.857; 7.857; 9.429)	(6.714; 8.429; 9.571)	(6.714; 8.429; 9.571)
C <sub>25</sub>	(5.857; 7.857; 9.286)	(5.000; 7.000; 8.714)	(4.714; 6.714; 8.143)	(7.286; 8.857; 9.714)	(6.714; 8.429; 9.571)	(6.714; 8.143; 9.000)
C <sub>26</sub>	(6.143; 7.857; 9.000)	(6.143; 8.143; 9.571)	(5.857; 7.857; 9.429)	(7.571; 9.000; 9.714)	(7.571; 9.143; 9.857)	(7.857; 9.429; 10.00)
C <sub>31</sub>	(6.429; 8.286; 9.571)	(5.857; 7.714; 9.000)	(6.429; 8.286; 9.571)	(4.857; 6.714; 8.286)	(5.143; 7.000; 8.571)	(4.571; 6.429; 8.000)
C <sub>32</sub>	(5.857; 7.714; 9.143)	(5.857; 7.714; 9.143)	(6.143; 7.857; 9.143)	(5.857; 7.714; 9.143)	(5.857; 7.714; 9.143)	(6.429; 8.000; 9.143)
C <sub>41</sub>	(3.000; 4.429; 6.143)	(2.714; 4.429; 6.429)	(2.714; 4.429; 6.429)	(5.857; 7.857; 9.429)	(5.571; 7.571; 9.143)	(5.857; 7.857; 9.286)
C <sub>42</sub>	(4.286; 6.143; 7.857)	(4.429; 6.429; 8.143)	(4.714; 6.714; 8.429)	(6.429; 8.143; 9.286)	(6.429; 8.143; 9.286)	(7.000; 8.714; 9.571)
C <sub>51</sub>	(4.286; 6.000; 7.571)	(4.143; 6.143; 8.143)	(5.286; 7.286; 8.857)	(6.714; 8.429; 9.571)	(7.000; 8.857; 9.857)	(7.571; 9.143; 9.857)
C <sub>52</sub>	(5.000; 7.000; 8.714)	(5.571; 7.571; 9.143)	(6.143; 8.143; 9.571)	(7.286; 9.000; 9.857)	(7.857; 9.286; 9.857)	(7.857; 9.286; 9.857)
C <sub>53</sub>	(2.333; 3.667; 5.333)	(2.667; 4.667; 6.667)	(3.333; 5.333; 7.333)	(4.667; 6.667; 8.500)	(5.000; 7.000; 8.833)	(5.333; 7.333; 9.167)

Table 5: (Cont.)

CRITERIA	A7 B737-700	A8 B737-800	A9 B737-900-ER	A10 B737-MAX7	A11 B737-MAX8	A12 B737-MAX9
C <sub>11</sub>	(5.000; 6.833; 8.500)	(5.333; 7.167; 8.667)	(6.333; 8.000; 9.167)	(6.000; 7.667; 9.000)	(5.667; 7.333; 8.667)	(6.000; 7.667; 9.000)
C <sub>12</sub>	(5.333; 7.167; 8.500)	(6.667; 8.333; 9.333)	(7.667; 9.167; 9.833)	(5.333; 7.333; 8.833)	(7.000; 8.667; 9.500)	(7.333; 9.000; 9.833)
C <sub>13</sub>	(4.000; 5.333; 6.500)	(3.667; 5.667; 7.667)	(5.000; 7.000; 9.000)	(6.333; 7.833; 8.833)	(7.000; 8.833; 9.833)	(7.000; 8.833; 9.833)
C <sub>14</sub>	(4.667; 6.667; 8.333)	(5.667; 7.667; 9.167)	(5.667; 7.667; 9.333)	(6.667; 8.333; 9.500)	(7.000; 8.667; 9.667)	(7.000; 8.667; 9.667)
C <sub>15</sub>	(5.571; 7.571; 9.000)	(6.429; 8.286; 9.429)	(6.143; 8.143; 9.571)	(6.429; 8.143; 9.429)	(7.000; 8.714; 9.714)	(7.000; 8.714; 9.714)
C <sub>16</sub>	(7.000; 8.714; 9.714)	(7.000; 8.714; 9.571)	(7.571; 9.143; 9.857)	(7.000; 8.857; 9.857)	(7.571; 9.143; 9.857)	(7.571; 9.143; 9.857)
C <sub>17</sub>	(5.000; 7.000; 8.833)	(5.333; 7.333; 8.833)	(7.667; 9.167; 9.833)	(5.000; 7.000; 9.000)	(6.333; 8.333; 9.667)	(7.667; 9.167; 9.833)
C <sub>18</sub>	(4.143; 6.143; 8.000)	(4.714; 6.714; 8.571)	(5.000; 7.000; 8.857)	(5.571; 7.429; 9.000)	(5.857; 7.714; 9.143)	(5.571; 7.429; 9.000)
C <sub>21</sub>	(5.000; 7.000; 8.714)	(3.286; 5.286; 7.143)	(3.571; 5.571; 7.429)	(3.571; 5.571; 7.571)	(2.429; 4.429; 6.429)	(1.429; 3.000; 5.000)
C <sub>22</sub>	(6.143; 7.857; 9.000)	(7.000; 8.714; 9.714)	(5.857; 7.857; 9.429)	(6.143; 8.143; 9.571)	(8.429; 9.714; 10.00)	(6.714; 8.571; 9.714)
C <sub>23</sub>	(5.571; 7.571; 9.000)	(5.000; 7.000; 8.714)	(5.286; 7.286; 8.857)	(6.143; 8.857; 9.000)	(5.571; 7.571; 9.000)	(5.571; 7.571; 9.000)
C <sub>24</sub>	(5.571; 7.571; 9.143)	(6.714; 8.714; 9.857)	(6.143; 8.143; 9.571)	(5.857; 7.857; 9.429)	(6.714; 8.571; 9.714)	(6.714; 8.571; 9.714)
C <sub>25</sub>	(5.571; 7.571; 9.143)	(5.000; 7.000; 8.714)	(4.429; 6.429; 8.000)	(7.286; 8.857; 9.714)	(7.000; 8.714; 9.714)	(6.429; 8.000; 9.000)
C <sub>26</sub>	(6.429; 8.143; 9.286)	(6.714; 8.714; 9.857)	(5.857; 7.857; 9.286)	(7.286; 8.714; 9.571)	(7.857; 9.429; 10.00)	(7.286; 9.143; 10.00)
C <sub>31</sub>	(5.286; 7.000; 8.429)	(5.286; 7.000; 8.429)	(5.571; 7.286; 8.714)	(3.825; 5.857; 7.714)	(3.857; 5.857; 7.714)	(3.857; 5.857; 7.714)
C <sub>32</sub>	(5.571; 7.286; 8.714)	(5.571; 7.286; 8.714)	(4.429; 6.429; 8.429)	(5.286; 7.143; 8.571)	(5.286; 7.014; 8.571)	(5.286; 7.143; 8.571)
C <sub>4</sub>	(3.000; 4.714; 6.714)	(3.571; 5.571; 7.571)	(4.429; 6.429; 8.286)	(5.857; 7.857; 9.429)	(6.143; 8.143; 9.571)	(6.143; 8.143; 9.571)
C <sub>42</sub>	(4.143; 5.571; 7.000)	(4.429; 6.429; 8.143)	(5.286; 7.286; 9.000)	(6.429; 8.143; 9.286)	(7.286; 9.000; 10.00)	(7.286; 9.000; 9.857)
C <sub>51</sub>	(5.000; 7.000; 8.714)	(5.286; 7.286; 9.143)	(5.857; 7.857; 9.286)	(7.286; 8.857; 9.714)	(7.286; 9.143; 10.00)	(8.143; 9.571; 10.00)
C <sub>52</sub>	(4.429; 6.429; 8.429)	(5.000; 7.000; 8.714)	(5.000; 7.000; 8.714)	(6.714; 8.429; 9.571)	(7.000; 8.571; 9.571)	(7.000; 8.571; 9.571)
C <sub>53</sub>	(2.333; 4.000; 6.000)	(2.667; 4.667; 6.667)	(4.667; 6.667; 8.500)	(5.000; 7.000; 9.000)	(5.667; 7.667; 9.333)	(6.333; 8.333; 9.667)

Table 5: Cont.

CRITERIA	A13 B737/MAX20	A14 CS100	A15 CS300	A16 ERJ190	A17 ERJ 195
C <sub>11</sub>	(5.667; 7.333; 8.667)	(3.667; 5.667; 7.667)	5.000; 7.000; 8.667	(1.667; 3.667; 5.667)	(0.833; 2.667; 4.667)
C <sub>12</sub>	(7.000; 8.667; 9.500)	(2.167; 4.000; 6.000)	(4.000; 6.000; 7.833)	(1.333; 3.333; 5.333)	(1.333; 3.333; 5.333)
C <sub>13</sub>	(7.000; 9.714; 9.571)	(3.000; 4.333; 6.000)	(3.000; 4.333; 6.000)	(3.333; 5.333; 7.333)	(3.333; 5.333; 7.333)
C <sub>14</sub>	(7.286; 8.857; 9.571)	(4.567; 6.500; 8.167)	(4.667; 6.500; 8.167)	(4.167; 5.833; 7.500)	(4.167; 5.833; 7.500)
C <sub>15</sub>	(7.000; 8.714; 9.571)	(3.333; 5.333; 7.333)	(3.000; 5.333; 7.333)	(2.667; 4.333; 6.333)	(2.667; 4.333; 6.333)
C <sub>16</sub>	(7.286; 8.857; 9.571)	(4.667; 6.667; 8.167)	(4.667; 6.667; 8.167)	(3.000; 4.667; 6.667)	(3.000; 4.667; 6.667)
C <sub>17</sub>	(6.333; 8.333; 9.500)	(3.667; 5.667; 7.667)	(3.667; 5.667; 7.667)	(2.167; 4.000; 6.000)	(2.167; 4.000; 6.000)
C <sub>18</sub>	(5.857; 7.714; 9.000)	(4.667; 6.333; 7.667)	(4.667; 6.333; 7.667)	(3.833; 5.333; 6.667)	(3.833; 5.333; 6.667)
C <sub>21</sub>	(1.000; 2.667; 4.667)	(6.000; 8.000; 9.333)	(4.333; 6.333; 8.167)	(7.000; 8.500; 9.167)	(7.000; 8.500; 9.167)
C <sub>22</sub>	(7.333; 9.000; 9.833)	(4.167; 6.000; 7.667)	(4.167; 6.000; 7.667)	(5.333; 6.333; 7.000)	(5.333; 6.333; 7.000)
C <sub>23</sub>	(5.667; 7.667; 9.000)	(4.333; 6.333; 8.333)	(4.333; 6.333; 8.333)	(4.333; 6.333; 8.333)	(3.000; 5.000; 7.000)
C <sub>24</sub>	(7.000; 8.833; 9.833)	(3.000; 5.000; 7.000)	(3.333; 5.333; 7.333)	(1.667; 3.667; 5.667)	(4.333; 6.333; 8.333)
C <sub>25</sub>	(7.000; 8.667; 9.667)	(3.667; 5.667; 7.667)	(5.000; 7.000; 8.667)	(4.333; 6.167; 7.833)	(2.000; 4.000; 6.000)
C <sub>26</sub>	(8.000; 9.500; 10.00)	(4.333; 6.333; 8.000)	(5.000; 6.667; 8.000)	(5.667; 7.500; 8.833)	(4.333; 6.333; 8.000)
C <sub>31</sub>	(4.429; 6.429; 8.286)	(5.286; 7.286; 8.857)	(5.000; 7.000; 8.714)	(2.714; 7.714; 6.714)	(2.714; 4.714; 6.714)
C <sub>32</sub>	(4.286; 6.000; 7.714)	(5.000; 7.000; 8.714)	(5.000; 7.000; 8.714)	(2.714; 4.714; 6.714)	(2.714; 4.714; 6.714)
C <sub>41</sub>	(6.333; 8.333; 9.667)	(2.000; 3.667; 5.667)	(2.000; 3.667; 5.667)	(3.667; 5.667; 7.333)	3.667; 5.667; 7.333
C <sub>42</sub>	(7.667; 9.333; 10.00)	(2.000; 3.333; 5.000)	(2.000; 3.333; 5.000)	(3.500; 5.333; 7.333)	(3.500; 5.333; 7.333)
C <sub>51</sub>	(7.000; 9.000; 10.00)	(3.333; 5.333; 7.333)	(4.000; 6.000; 8.000)	(3.000; 5.000; 7.000)	(3.000; 5.000; 7.000)
C <sub>52</sub>	(7.333; 8.833; 9.667)	(2.667; 4.667; 6.667)	(2.667; 4.667; 6.667)	(1.667; 3.667; 5.667)	(1.667; 3.667; 5.667)
C <sub>53</sub>	(6.333; 8.333; 9.667)	(2.333; 4.333; 6.333)	(2.333; 4.333; 6.333)	(2.667; 4.667; 6.667)	(2.667; 4.667; 6.667)



### Fuzzy TOPSIS Application

**4. Step:** The decision matrix obtained by equation (4) is normalized with the linear method using equations (5) and (6) and weighted by equation (7) to obtain a fuzzy weighted decision matrix. Here, cost criteria were assessed unilaterally by the experts and evaluated by using equation (5). In the TOPSIS application fuzzy positive and fuzzy negative ideal solutions are determined by equation (8) and (9) and the distances of the alternatives from the fuzzy positive ( $D_i^+$ ) and fuzzy negative ideal solution ( $D_i^-$ ) are calculated by the equations (10) and (11) with the vertex method in equation (12). The positive and negative distances, the closeness coefficients of each alternatives calculated by equation (13) and ranking of the alternatives are shown in Table 6.

Table 6: Ranking of the Aircraft types according to Fuzzy TOPSIS Method

Alternatives ( $A_i$ )	$D_i^+$	$D_i^-$	Closeness Coefficients (CC)	Ranking
A321 NEO	7.288	10.198	0.583	1
B737 MAX8	7.485	9.996	0.572	2
B737 MAX9	7.627	9.848	0.564	3
B737 MAX20	7.607	9.801	0.563	4
A320 NEO	7.694	9.828	0.561	5
A319 NEO	7.773	9.682	0.500	6
B737 MAX7	7.775	9.651	0.554	7
B737-900 ER	8.046	9.453	0.540	8
A321	8.181	9.322	0.533	9
B737-800	8.324	9.074	0.522	10
A320	8.413	9.037	0.518	11
B 737-700	8.554	8.698	0.504	12
A 319	8.627	8.640	0.500	13
CS 300	9.614	7.450	0.437	14
CS 100	9.857	7.195	0.422	15
ERJ 190	10.035	6.588	0.396	16
ERJ 195	10.138	6.395	0.387	17

### Fuzzy MOORA Application

Steps 1-3 are the same as in the TOPSIS method and in step 3, the fuzzy weights are converted into non-fuzzy numbers (crisp) with equation (14).

**4-5 Steps:** The decision matrix is normalized by using Equation (15) (16) and (17) and the weighted normalized fuzzy matrix is obtained by using equations (18), (19) and (20).

**Step 6:** In this step, the fuzzy normalized performance values (S) and crisp values are calculated by the equations (21), (22), (23), (24), (25), (26), and (27) successively.

The crisp preference values of the aircraft and their rankings according to Fuzzy MOORA Method are given in Table 7.

In both methods, it is seen that the rankings of the aircraft are the same. According to both methods, the A321Neo model was preferred in the first rank. Considering the ranking of classical and new generations of the aircraft produced by Airbus and Boeing, new generation aircraft were preferred by the airline experts.

After the preference for new generation aircraft, B737-900ER and A321, which are the classical aircraft types took the first two rankings. CS and ERJ, mostly preferred in regional air

transportation over short distances, have been among the aircraft that are not preferred within the framework of the low-cost airline business model.

Table 7: Ranking of the Aircraft types according to Fuzzy MOORA Method

Alternatives (A <sub>i</sub> )	Crisp Scores	Ranking	Alternatives (A <sub>i</sub> )	Crisp Scores	Ranking
A321 NEO	18.550	1	B737-800	14.913	10
B737 MAX8	17.778	2	A320	14.824	11
B737 MAX9	17.450	3	B 737-700	14.001	12
B737 MAX20	17.370	4	A 319	13.923	13
A320 NEO	17.349	5	CS 300	10.928	14
A319 NEO	16.789	6	CS 100	10.464	15
B737 MAX7	16.568	7	ERJ 190	9.289	16
B737-900 ER	15.949	8	ERJ 195	8.867	17
A321	15.677	9			

In the researches carried out within the framework of commercial air transportation in the literature, it has been seen that the classical types of narrow body aircraft models of Airbus and Boeing are mainly selected for evaluation in alternative aircraft models. The aircraft models which were taken as the alternatives evaluated and the best suitable aircraft in the literature are shown in the Table 8.

Table 8: Aircraft Alternatives and The Best Results in the Literature

Authors	Methods	Alternatives	Best A/C
Özdemir et al. (2011)	Analytical Network Process.	A319, A320, B737	B737
Kiracı et al.(2018a)	AHP, COPRAS and MOORA	A320, A321, B737-800 and B737-900ER	B737-800
Kiracı et al.(2018b)	TOPSIS	A320, A321, B737-800 and B737-900ER	B737-800
Deveci et al (2021)	Interval type-2 hesitant fuzzy Entropy-based WASPAS method.	B738, B78C, B79L, A 321 A32C, A 320, A319	A320C
(Kiracı et al. 2020)	AHP and TOPSIS in interval type-2 fuzzy sets	A319Neo, A320Neo, A321Neo, B737Max7, B737Max8, B737Max9	A321Neo
(Ilgin, 2019)	Linear Physical Programming	A319Neo, A320Neo, A321Neo, B798MAX 7, B737 Max8, B737 Max9.	A321 Neo

As seen the results in Table 8, the best alternative aircraft in the literature (Kiracı et al, 2020; Ilgin, 2019) are consistent with the results obtained by Fuzzy TOPSIS and Fuzzy MOORA methods in this study. When considered two studies, alternative aircraft were selected only from the new generation aircraft models of Airbus and Boeing. However, in this study, classical and new generation of aircraft models of Airbus and Boeing and different types of CS and ERJ aircraft models could be considered for low-cost airlines.

### 5. Conclusion

Fleet planning is a long-term strategic decision leading an airline to success or failure, both financially and in prestige. For fleet planning, the business model adopted by the airlines and the criteria, which are determinants of the current dynamics and conditions, are very important in aircraft selection decisions. These criteria, which can cause very different decisions for companies, create a multi-criteria decision-making environment for aircraft

selection decisions. In this study, a decision support model that can be used for aircraft type selection in fleet planning for an airline that adopts a low-cost airline business model was created, and Fuzzy TOPSIS and Fuzzy MOORA were used for evaluation.

This study is the one in which the highest number of aircraft models are evaluated together for the first time in the literature. In the model, alternative aircraft to be evaluated is composed of classical and new generation narrow-body aircraft models of the world's two most known manufacturers, Airbus and Boeing companies, as well as Brazilian (Embraer) and Bombardier-Airbus Partnership models (CS 300-100). Methodologically, for the first time, the Fuzzy MOORA method was applied in this field.

In the researches and the interviews made with the airline fleet planning experts, it has been understood that economical and technical main criteria have very important weight for low-cost airlines. When the sub-criteria are examined, the highest importance weights are given to range, carrying capacity and fuel efficiency, which are the subcriteria of technical criteria and aircraft price, financing opportunities, aircraft similarity and cost per available seat-mile, which are the subcriteria of economic criteria.

Since the development of the technical features of the aircraft is effective in providing economic benefits in the operation of the aircraft, it has become the focus of interest of low-cost airline companies and has been the factor in giving more importance to the technical features of the aircraft types in their fleet structures. Political criteria, on the other hand, have not been included in any study in the literature and they were included in this decision support model for the first time.

In countries where political relations are problematic, embargoes applied to those countries are seen as very important criteria in terms of purchasing and supplying spare parts of the aircraft. The best example of this situation is the difficulty faced by Iranian airline companies in the supply of aircraft as the consequence of the embargo put by the United States of America

Looking at the evaluations in the decision matrices made by the experts, it has been determined that the new generation aircraft are more preferred over the classical models. The new generation aircraft's features, which are fuel efficiency, passenger satisfaction, less noise pollution and CO<sub>2</sub> emissions and high demand, have been effective in these choices. However classical models also have a price advantage over new generation aircraft.

Among the alternatives, although Embraer and Bombardier aircraft, which are generally preferred for regional transportation, have significant price advantages, they are at the bottom of the ranking due to low scores in almost all other criteria. If the low-cost airlines aim to provide regional transportation, Embraer and Bombardier aircraft preferences may be able to come to the fore.

In this study, the aircraft selection decision support model for low-cost carriers has been developed and proposed. This decision support model can be easily applied and modified by the airlines having different business models according to the considerations of the criteria.

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## Kuruluşundan Bugüne Kuzey Kore'nin Dış Politikasında Değişim: Tarihsel Bir İnceleme

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Kuruluşundan Bugüne Kuzey Kore'nin Dış Politikasında Değişim: Tarihsel Bir İnceleme	Change in North Korea's Foreign Policy since Its Foundation: A Historical Review
<b>Öz</b> <p>Bu çalışma, Charles Hermann'ın dış politikada değişim modelini kullanılarak Kuzey Kore'nin kuruluşundan bugüne dış politikasında yaşanan değişimi incelemektedir. Hermann'ın modelinden yola çıkarak Kuzey Kore'nin dış politikasındaki değişim incelendiğinde ülkenin farklı dönemlerde iki aşamada politika değişikliği yaşadığı görülmektedir. İlk aşama, Kuzey Kore'nin Soğuk Savaş dönemindeki ittifak tercihlerinden oluşmaktadır. İkinci aşama ise, Soğuk Savaş sonrası süreçte Kuzey Kore lideri olan Kim Jong-il'in "Önce Ordu" politikası ile başlattığı ve babasının ardından görevi devralan Kim Jong-un "paralel kalkınma" politikası ile sürdürdüğü program değişiklikleridir. Bu çerçevede çalışma, Kuzey Kore'nin bu iki aşamadaki değişiklikleri neden ve nasıl gerçekleştirdiğini incelemektedir.</p>	<b>Abstract</b> <p>Based on Charles Hermann's model of foreign policy change, this study examines the change in North Korea's foreign policy since its establishment. When the change in North Korea's foreign policy is examined based on Hermann's model, it is seen that in different periods the country has undergone policy changes in two stages. The first stage consists of North Korea's alliance preferences during the Cold War. The second stage consists of the program changes that were started by Kim Jong-il, who became the leader of North Korea in the post-Cold War period, with the "Army First" policy and is continued with the "parallel development" policy of Kim Jong-un, who assumed the leadership after his father. In this context, this study examines why and how North Korea accomplished the first two stages of change.</p>
<b>Anahtar Kelimeler:</b> Kuzey Kore, Dış Politika Değişimi, Çuçe (Özgüven) İdeolojisi, Songun (Önce Ordu) Politikası, Byungjin (Paralel Kalkınma) Politikası	<b>Keywords:</b> North Korea, Foreign Policy Change, Juche (Self-reliance) Strategy, Sungun (Military First) Policy, Byungjin (Parallel Development) Policy
<b>JEL Kodları:</b> F50, O38	<b>JEL Codes:</b> F50, O38

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	İki yazarın makaleye katkısı eşittir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Giriş

Kore Demokratik Halk Cumhuriyeti, kısaca Kuzey Kore, Kim Jihyun (2016: 131) tarafından Joseon Hanedanı döneminde “münzevi krallık” (*hermit kingdom*) olarak tanımlanan Kore Krallığı'na atıfla dışı kapalı sosyalist bir krallık olarak adlandırılmaktadır. Nükleer silahlanma faaliyetleriyle öne çıkan ülke, bölge ülkeleri, özellikle de Güney Kore ve Japonya açısından bir tehdit unsuru olarak algılanmaktadır. Kuzey Kore'nin gerçekleştirmiş olduğu füze denemeleri ve ülke liderliğinin (sırasıyla Kim Il-sung, Kim Jong-il ve Kim Jong-un) tehditkâr açıklamaları çoğu zaman uzmanlar ve devlet liderlerince eleştirilmiş ve irrasyonel bulunmuştur (Yamamoto, 2019: 357). Kuzey Kore'nin dış politikadaki saldırgan tutumunu anlamak için öncelikle ülkenin rejim yapısının incelenmesi ve rejimin zaman içinde kendini neden yalnızlaştırdığının sorgulanması gerekmektedir. Kore Savaşı'nın (1950-1953) ardından bağımsızlıklarını ilan eden Kuzey ve Güney Kore'nin zaman içinde geçirmiş oldukları ideolojik dönüşüm süreci, ilerleyen dönemlerde iki ülkenin ekonomik, siyasal, toplumsal ve yönetim biçimlerini temelden şekillendirmiştir. Güney Kore, Amerika Birleşik Devletleri'nin (ABD) de yardımıyla zaman içinde nispeten liberal bir ekonomik yapıyı ve demokratik yönetim biçimini benimserken Kuzey Kore, Sovyetler Birliği'nin yanında yer almış ve Kuzey Kore usulü sosyalist bir yönetim modeli benimsemiştir. Soğuk Savaş döneminin başlarında istikrarlı bir şekilde devam eden Kuzey Kore-Sovyetler Birliği ittifakı zaman içinde değişirken Kuzey Kore, Soğuk Savaş'ın ardından dış politikada birtakım değişikliklere gitmiştir.

Bu çalışmada, Charles Hermann'ın dış politikada değişim yaklaşımından faydalanılarak Kuzey Kore'nin kuruluşundan bugüne kadarki dış politikası incelenmektedir. Çalışmanın ana sorunsalı, Kuzey Kore'nin dış politikasında hangi gerekçelerle değişikliğe gittiğidir. Çalışma ayrıca Kuzey Kore'nin, özellikle Soğuk Savaş sonrası dönemde neden saldırgan bir dış politika izlediğini açıklamayı hedeflemektedir.

Son yıllarda saldırgan bir dış politika izleyen Kuzey Kore, artan nükleer faaliyetlerinden dolayı tüm dünyanın, özellikle de Doğu Asya ülkelerinin dikkatini çekmektedir. Kuzey Kore'nin, Pakistan ve Myanmar'la nükleer teknoloji ve füze alışverişi yaptığı düşünüldüğünde, sadece Doğu Asya bölgesine değil, Asya'nın geneline de etki ettiği görülmektedir. Bu açıdan Kuzey Kore'nin dış politikası hem bölge politikalarını hem de ABD'nin bölgedeki tutumunu etkilemesi açısından önemlidir. Bu çalışma, Hermann'ın dış politikada değişim modelinden yola çıkarak Kuzey Kore'nin kuruluşundan bugüne kadarki süreçte iki aşamada dış politika değişimi yaşadığını iddia etmektedir. İlk aşama, Kuzey Kore'nin Soğuk Savaş dönemi ittifak tercihlerinden (ekonomi temelli, Sovyetler Birliği ve Çin Halk Cumhuriyeti'yle olan dış ilişkilerdeki değişimden) oluşmaktadır. İkinci aşama ise Soğuk Savaş sonrası Kuzey Kore lideri Kim Jong-il'in başlattığı *Songun* (önce ordu) (1994) politikası ile yaşanan değişimdir. Bu değişim sonucunda ortaya çıkan dış politika, ülkenin mevcut lideri Kim Jong-un liderliği altında bir miktar değişiklik göstermekle birlikte *Byungjin* (paralel kalkınma) politikası altında varlığını sürdürmektedir.

Bu kapsamda çalışma altı kısımdan oluşmaktadır. Birinci kısımda Hermann'ın dış politika yaklaşımından yola çıkılarak genel olarak ülkelerin dış politikalarında hangi gerekçelerle değişime gittikleri ele alınmaktadır. İkinci kısımda Uluslararası İlişkiler yazınında Kuzey Kore'nin dış politikası üzerine yapılan çalışmalar incelenmektedir. Ardından gelen üç kısımda Kuzey Kore'nin sırasıyla liderliğini üstlenen Kim Il-sung, Kim Jong-il ve Kim Jong-un dönemlerinde ülkenin izlediği dış politika ele alınmaktadır. Sonuç kısmında ise kuruluşundan

bu yana Kuzey Kore'nin dış politikasında yaşanan değişimler üzerine bir değerlendirme yapılmaktadır.

## 2. Hermann ve Dış Politikada Değişim

Bir hükümetin hangi koşullar altında izlediği dış politikasının yetersizliğinin, yanlışlığının ya da uygulanabilir olmadığının farkına vararak bu politikada değişikliğe gittiğini açıklamayı amaçlayan Charles Hermann, ülkelerin dış politikalarında yaşanan değişimleri dört aşamaya/gruba ayırmıştır. Bunlardan ilki, bir ülkenin dış politika amaçları doğrultusunda harcadığı çabanın düzeyindeki değişikliklerden oluşmaktadır. Ufak ayarlamalar olarak adlandırılan bu aşamada ülkenin dış politika hedefleri ve uyguladığı yöntemler değişmezken, bu hedeflere ulaşmak için sarf ettiği çabada ve uyguladığı dış politikanın muhataplarının sayısında artış ya da azalış yaşanabilir. İkinci aşama olan program değişimi, hedeflere yönelik yöntem veya araç değişikliğini içerir. Dolayısıyla program değişikliği, ilk aşamadan farklı olarak ayrı bir yöntemin uygulanmasını içerir. Genellikle nicel olan ufak ayarlamalardan farklı olarak program değişimi, nitel bir değişimdir ve diplomatik müzakerelerin askeri güç kullanımının yerini alması gibi dış politikada yeni araçlara başvurulmasını içerir. İlk iki aşamanın ortak özelliği, ülkenin dış politika hedeflerinde ve eğiliminde bir değişimi içermemesidir. Üçüncü aşama, problem veya hedef değişikliğidir. Önceki iki aşamaya kıyasla daha köklü bir değişimi temsil eden bu aşamada dış politikada bir meseleye veya soruna yönelik farklı bir tutum alınmasıyla birlikte amaç da değişir. Son aşama olan uluslararası yön değişimi ise bir ülkenin, dünya meselelerine dair yöneliminin yeniden belirlenmesi neticesinde dış politikasında köklü bir değişime gitmesini ifade eder. Uluslararası yön değişimi, bir ülkenin tek bir meseleye veya birkaç aktöre yaklaşımındaki değişikliklere kıyasla ülkenin uluslararası rolü ve faaliyetlerinde yaşanan esaslı değişiklikleri temsil eder. Bu aşamada gerçekleşen, çok sayıda politikada aynı anda yaşanan değişimlerdir (Hermann, 1990: 5-6). Hermann, ufak ayarlamaların aksine program, hedef/problem ve yön değişimlerinin bir ülkenin dış politikasında yaşanan önemli değişimleri gösterdiğini belirtmektedir (1990: 6).

Hermann'a göre, bir ülkenin dış politikası iç politikadan tamamıyla bağımsız olarak değerlendirilemez ve iç politika, dış politikayı ülke içerisindeki sorunlara, yönetim sistemine ve yöneticilerin yaklaşımlarına bağlı olarak etkiler. Örnek vermek gerekirse, demokratik seçimlerin yapıldığı bir ülkede devlet başkanı veya başbakan adayı liderler, dış politika tercihlerini seçimlere yönelik bir malzeme olarak kullanabilirler. Bu, hem kendilerini rakiplerinden ayıran bir unsur olur hem de liderler seçildikleri takdirde ülkenin dış politikasında geçici veya kalıcı değişikliğe gidebilirler. Ülkenin baskın bileşenlerinin dış politika yaklaşımlarında da köklü değişiklikler yaşanabilir. Ayrıca bir darbe sonucunda askeri rejimin yönetimi devralması veya bir devrim sonucunda iktidarın değişmesi gibi yöntemlerle bir ülkenin politika yapıcılarının değiştiğinde dış politikasında da değişikliğe gidilebilir. Ülkenin ekonomik sisteminin yeniden yapılandırılması veya dönüşümü de dış politikasında değişime yol açabilecek önemli bir unsur olarak öne çıkmaktadır (Hermann, 1990: 7, 11).

Hermann, hükümetlerin karar alma süreçlerini etkileyerek dış politikalarında değişime yol açabilecek unsurları dört gruba ayırmıştır. Bunlardan ilki, lider tarafından gerçekleştirilen değişimdir. Lidere dayalı değişimler, sıklıkla bir başbakan ya da devlet başkanı gibi alınan kararlar üzerinde yetki sahibi bir politika yapıcının kararlı çabalarının sonucunda



gerçekleşmektedir. Lider, ülkenin dış politikasında istediği değişimi gerçekleştirebilmek için gerekli olan inanca, güce ve enerjiye sahip olmalıdır. İkinci unsur, bürokratik savunuculuktur. Normalde bürokrasi, değişimden ziyade muhafaza etme üzerine kurulu ve ağır işleyen bir kurumdur. Ne var ki Hermann'ın burada kastettiği, kamuda tek bir kurumda veya farklı kurumlarda görev yapmakla birlikte düzenli olarak ilişki içinde olan bir grup bürokratin politika değişikliği yönünde savunuculuk yapmasıdır. Bu grubun etkili olabilmesi için üst düzey karar vericilere ulaşabilecek ve onlarla görüşebilecek konumda olması gerekmektedir. Üçüncü unsur olan yurtiçi yeniden yapılanma, bir ülkenin güç sahibi elitlerinin dış politikada bir sorun veya hedef üzerine liderleri yönlendirmesiyle ortaya çıkar. Dış politikada değişim, hükümete meşruiyet sağlayan ve dolayısıyla hükümeti etkileme gücüne sahip olan elitlerin kendi bakış açılarını değiştirmeleri ya da bu elit grubun üyelerinde bir değişimin yaşanması sonucunda gerçekleşir. Sonuncu unsur ise dış şoklardır. Savaş veya uluslararası ekonomik krizler gibi önemli olayların ortaya çıkmasının sonucu olarak dış politikada büyük değişikliklere gidilmesi durumudur. Bu unsurlar dış politika değişimini tek başlarına tetikleyebileceği gibi iki ya da daha fazla unsur bir arada da değişime yol açabilir (Hermann, 1990: 11-12).

Bu araştırmada Hermann'ın geliştirmiş olduğu dış politika değişimi yaklaşımından yararlanılarak Kuzey Kore'nin kuruluşundan bugüne dış politikasının ülke içinde ve dışında yaşanan gelişmeler ışığında ne ölçüde değiştiği incelenmektedir. Bir ülkenin dış politikasında yaşanan değişimleri ufak ayarlamalardan program, hedef/problem veya yön değişimlerine kadar dört farklı aşamada ele alan ve hükümetlerin karar alma süreçlerini etkileyerek dış politikalarında değişime yol açabilecek dört unsuru ortaya koyan bu yaklaşım, dış politika değişimlerinin incelenmesinde sunduğu geniş yelpaze nedeniyle Kuzey Kore'nin kuruluşundan bugüne dış politikasında yaşanan değişimlerin anlaşılması ve açıklanmasında katkı sağlamaktadır. Bunlara ek olarak, Hermann'ın dış politikada değişim modeli, liderlerin karar almada oynadığı önemli rolü ve iç politikanın dış politikaya etkisini dikkate alması nedeniyle de Kuzey Kore'nin dış politikasındaki değişimleri anlamakta faydalı bir yaklaşım sunmaktadır. Kısacası Hermann'ın dış politikada değişim modeli, Kuzey Kore'nin dış politikasının geniş bir zaman aralığı içinde nasıl değiştiğinin ve bu değişimin nedenlerinin ortaya konmasına katkı sağlamaktadır.

Kuzey Kore'nin 70 yıllık süreçte dış politikasında yaşanan değişimlerde iki unsur öne çıkmaktadır. Bu unsurlar, ülkenin otoriter bir rejime sahip olmasından ötürü dış politikada karar verici olan lider ve hem bölgesel hem de küresel düzeyde yaşanan gelişmelerin -Soğuk Savaş, Sovyetler Birliği'nin dağılması ve Çin'de yaşanan liberalleşme süreci- yol açtığı dış şoklardır. Yaşanan dış şoklarla paralel olarak ülkenin liderleri çeşitli tercihlerde bulunarak ülkenin dış politikasında değişiklikler yapmıştır. Kuzey Kore, 1960'larda yaşanan Çin-Sovyet ayrılığı sonucunda dış politikasında kısmi ayarlamalar yapmakla birlikte Soğuk Savaş dönemi boyunca ana hatlarıyla Sovyetler Birliği ve Çin Halk Cumhuriyeti'nin yanında ve ABD'nin karşısında yer almış ve kendini Doğu Blokunun içinde konumlandırmıştır. Fakat Soğuk Savaş'ın son on yılında Çin'in ekonomisini liberalleştirme yönünde attığı adımlar ve Sovyetler Birliği'nin Gorbaçov'un liderliği altında uygulamaya koyduğu *glasnost* (açıklık) ve *perestroyka* (yeniden yapılanma) politikaları Kuzey Kore yönetimi tarafından tepkiyle karşılanmış ve ülkenin

yöneticileri, Kuzey Kore'nin bağımsız dış politikasına daha fazla vurgu yapmışlardır (Koh, 1991: 4).

İç politikada Kuzey Kore, kuruluşuyla beraber sosyalist bir devlet modelini benimsemiş; fakat kendini diğer sosyalist devletlerden, özellikle de Sovyetler Birliği'nden ayırma çabasıyla kendine özgü bir sosyalist model geliştirmiştir. Her ne kadar Kuzey Kore İşçi Partisi (KKİP) ülke yönetimi açısından önemli bir kurum olsa da aynı zamanda devlet başkanı da olan partinin lideri her zaman en yetkili kişi olmuştur. Ülkede KKİP, rejimin kuruluşundan itibaren yönetimde ve uygulamada önemli görevler üstlenmekle birlikte 1950'li yıllardan itibaren geliştirilen, zaman içerisinde pekiştirilen ve çeşitli yöntemlerle uygulamaya konulan Lider Kültü (*Suryong*, Yüce Lider), KKİP'nin önemini azaltmış ve Parti'ye iç politikaya yönelik programların uygulayıcısı bir makine hüviyeti kazanmıştır (Chung, 2007: 43-44). *Suryong* kavramı, ilk kez 1949 yılında kurucu lider Kim Il-sung tarafından kullanılmış, 1950'lerin ortasında ülke genelinde kullanılmaya başlanmış ve zaman içerisinde bir lider kültü yaratılmıştır (Park ve Snyder, 2015: 22).<sup>3</sup> *Suryong*, Kuzey Kore'nin kuruluşunun ilk yıllarında Kim Il-sung'a ek olarak Vladimir İlyiç Lenin ve Joseph Stalin gibi önemli sosyalist liderler için de kullanılmış, Kim Il-sung'un gücü tekeline almasının ardından ise yalnızca kendisi için kullanılmaya başlanmıştır (Woo, 2018b: 114). Lider kültüyle beraber KKİP'nin politika yapımındaki önemi azalmış ve Parti arka plana düşmüştür. *Suryong* aynı zamanda babadan oğula geçen bir liderlik sistemidir. Bu sebeple Kuzey Kore, kuruluşundan bugüne sadece üç lider tarafından yönetilmiştir. Kurucu ve ebedi lider Kim Il-sung, Kuzey Kore'ye özgü sosyalist bir devlet sistemi kurmuş ve bu devletin resmî ideolojisi olan 'Cuçe'yi (Juche) oluşturmuştur. Aşağıda daha detaylı işlenecek olan Cuçe sistemi, Kuzey Kore'nin toplumsal ve siyasal yapısını, ülke ekonomisini, iç ve dış politikasını şekillendirmiştir (Woo, 2018b: 115-116). 1994'te devlet başkanı Kim Il-sung'un ölümünün ardından başa geçen oğlu Kim Jong-il'in geliştirdiği önce ordu (*Songun*) politikasıyla Cuçe ideolojisi evrim geçirmiştir. Soğuk Savaş'ın sona ermesiyle birlikte ortaya çıkan uluslararası yapısal değişimlere ve beraberinde meydana gelen ülke içi sorunlara bir yanıt olarak Kim Jong-il tarafından geliştirilen *Songun* politikası, politika yapım süreçlerinde ordunun ve Kim Jong-il'in etkisini artırırken KKİP'nin etkisini, özellikle ordu ile kıyaslandığında önemli ölçüde azaltmıştır (Woo, 2018b: 117-119). 2011 yılında yönetimi devralan Kim Jong-un, babasından miras kalan nükleer silahlanma politikasını sürdürmüştür. Bununla birlikte Kim Jong-un, bir yandan dış politikada çelişkili (kimi zaman saldırgan kimi zaman ılımlı) bir tutum izlerken bir yandan da hem ülke içinde kendi gücünü ve KKİP'nin gücünü pekiştirmiş hem de nükleer silahlanmaya ek olarak ekonomik kalkınmaya da önem vermiştir (Ku, 2018a: 140). Lider kültü üzerine kurulu rejim yapısı dolayısıyla bu çalışmada Kuzey Kore dış politikası incelenirken Hermann'ın (1990) aktör odaklı analiz yöntemi izlenerek lider odaklı bir çalışma gerçekleştirilecektir.

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<sup>3</sup> Kim Il-sung, 1953 yılında Kore Savaşı'nın hemen ardından ülke içi muhalefeti şiddetli bir şekilde bastırmış ve bu tarihten sonra Kim Il-sung'un liderliği tartışılmaz konuma gelmiştir (Woo, 2018b: 113-114).

### 3. Kuzey Kore Dış Politikasında Yaşanan Değişim Üzerine Çalışmalar

Kuzey Kore'nin dış politikasında yaşanan değişimleri ele alan akademik çalışmalar, ülkenin dış ilişkileri ve iç dinamikleri olarak iki gruba ayırabilir. Dış ilişkilerle ilgili çalışmalar genellikle Kuzey Kore'nin Asya-Pasifik bölgesiyle ve bölge dışından da ABD ile ilişkilerine odaklanmıştır. Bu çalışmalar arasında özellikle Kuzey Kore-ABD ve Güney Kore-Kuzey Kore ilişkileri dikkat çekicidir. Zira ABD, bölgede Japonya ve Güney Kore'yle ortak hareket ederken bir yandan da Kuzey Kore'ye yönelik bir çevreleme stratejisi izlemektedir. Kuzey Kore'nin izlediği nükleer silahlanma çalışmaları,<sup>4</sup> ABD yönetimleri tarafından tepkiyle karşılanmış, buna karşılık ABD Kuzey Kore'ye yönelik baskı stratejisi izlemiştir. Uzmanlar, baskı stratejisi konusunda ikiye bölünmüştür (Cha ve Kang, 2003). Bir grup, baskı stratejisinin Kuzey Kore'yi dış politikada daha saldırgan davranmaya zorladığını iddia ederken diğer grup, baskı stratejisinin Kuzey Kore'nin saldırgan davranışını dizginlediğini öne sürmektedir. İlk grupta bulunan uzmanlar, bu stratejinin Kuzey Kore'yi nükleer faaliyetlerinden caydırmaktan ziyade kışkırttığını belirtmektedir. Victor Cha'ya (2000: 137) göre, ABD'nin yaptığı baskı Kuzey Kore'yi yalnızlaştırmakla birlikte ülke yöneticilerinin tehdit algısının artmasına ve daha saldırgan bir tutum izlemelerine neden olmuştur. ABD'nin Kuzey Kore-Güney Kore ilişkilerine etkisini inceleyen Cotton (2007: 28) da ABD'nin George W. Bush döneminde (2001-2009) devam ettirdiği baskı politikasının Güney Kore'nin Kim Dae-jung ve Roh Moo-hyun dönemlerinde izlediği Güneşli Politikası'nı<sup>5</sup> (*Sunshine Policy*, 1998-2008) baltaladığını söylemektedir. Bunun yanında Bush'un Kuzey Kore aleyhine söylemleri Altı Parti Görüşmelerini<sup>6</sup> olumsuz etkilemiş ve katılımcı ülkeler arasında derin bir güvensizliğe yol açmıştır. İkinci grupta yer alan Chung'a (2013) göre ise ekonomik yaptırımların Kuzey Kore'nin nükleer faaliyetlerini dizginlemede önemli rolü vardır. Fakat Chung, ekonomik yaptırımların sadece ABD veya Güney Kore tarafından uygulanmasının yeterli olmadığını, Rusya ve Çin'in de dâhil olduğu ortak bir eylem planıyla uygulanması halinde Kuzey Kore'nin pazarlık imkânlarının kısıtlanacağını savunmaktadır (2013: 7-8). Kim (2012) de Altı Parti Görüşmelerinin Kuzey Kore'yi nükleer faaliyetlerinden vazgeçirmek için önemli bir oluşum olmakla birlikte yetersiz kaldığını belirtmektedir. Kuzey Kore'nin gerçekleştirdiği füze denemelerinin sonlanması için başta ABD ile Güney Kore'nin daha caydırıcı tedbirler alması ve askeri yaptırımların artması gerektiğini savunmaktadır (2012: 516). Sadece nükleer silahlanma faaliyetlerinin değil, insan hakları konusunun da önemli olduğunu savunan Kang (2012: 144) ise Kuzey Kore'nin kışkırtmalarına karşı tutarlı ve güçlü politikalarla cevap verilmesiyle özellikle Güney-Kuzey ilişkilerinde daha somut sonuçların alınacağını savunmaktadır (Kang, 2013: 4).

Dış etkenlere ek olarak bir ülkenin iç dinamikleri de (yönetim biçimi, siyasi yapısı veya ideolojisi vb.) söz konusu ülkenin dış politikasını etkilemektedir (Rose, 1998: 152). Kuzey Kore

<sup>4</sup> 1953 yılında kurulan Yongbyon Bilimsel Nükleer Araştırma Merkezi, nükleer araştırma faaliyetlerine 1970'lerin ilk yıllarında başlamış ve ilk başarılı nükleer denemesini 2006 yılında gerçekleştirmiştir (MacDonald, 2013).

<sup>5</sup> Güneşli Politikası, Güney Kore Başkanı Kim Dae-jung tarafından başlatılan Kuzey Kore politikasıdır. Bu politika ile Güney Kore, ikili ilişkilerde İkinci Dünya Savaşı'ndan Soğuk Savaş sonrası döneme kadar süren gerginliği ortadan kaldırarak Kore yarımadasında barışçıl bir ortam yaratmayı ve uzun vadede iki Kore'nin birleşmesini amaçlamıştır (Moon, 2001: 178).

<sup>6</sup> Altı Parti Görüşmeleri, 2003 yılında Çin'in girişimiyle oluşturulan ve ABD, Rusya, Japonya, Güney Kore ve Kuzey Kore'yi kapsayan çok taraflı bir girişimdir. 2009 yılında sonlanan Altı Parti Görüşmeleri, Kuzey Kore'nin nükleer faaliyetlerini durdurmayı ve ABD-Kuzey Kore ilişkilerinde normalleşmeyi amaçlamıştır (Chung, 2013: 2-3).

özelinde yapılan çalışmalar, iç dinamikleri iki gruba ayırmıştır. İlk gruptaki çalışmalar, Kuzey Kore elitleri arasındaki karar alma süreçlerine odaklanmaktadır ve çalışmaların genelinde tepeden inme karar alma mekanizmalarının işlerliği konusunda fikir birliği vardır (Mansourov, 1997; Oh ve Hassig, 2000; Moon, 2000). Bu çalışmalar, elitler arasındaki çatışma yöntemlerinde ise birbirlerinden ayrılmaktadırlar. Moon'a göre, diktatörlük rejimine uygun olarak tek lider modelinin uygulandığı Kuzey Kore'de karar alma mekanizmalarında uzlaş ve danışma yöntemleri eksik kalmaktadır (2000: 330). Mansourov da benzer bir şekilde uzlaş kültürünün eksikliğine vurgu yaparken bunun asıl sebebini, KKİP'nin çok katmanlı ve karmaşık bürokratik yapısından kaynaklanan çatışma ortamına bağlamaktadır (1997: 223). Ahn'a göre, çatışmadan ziyade elitler arasında kendilerini lidere beğendirmeyi amaçlayan (ve tek tek lider modelini destekleyen bir yöntemle uygulanan) bir mücadele vardır (1996: 96). İkinci gruptaki çalışmalar, Kuzey Kore'ye özgü Cuçe ideolojisinin dış politikaya etkisinden bahsetmektedir (Koga, 2009; Kang, 2010; Myers, 2011; Lankov, 2015; Kim M.H., 2016; Kakışım, 2017; Yamamoto, 2019). Bu çalışmaların dikkat çekmek istediği temel nokta, iç dinamikler düşünüldüğünde (Cuçe ideolojisinin gerektirdiği kendi kendine yetebilme ve dış politikada bağımsızlık vurgusu) Kuzey Kore'nin dış politikada irrasyonel davranmadığıdır. Kuzey Kore devlet başkanları, Cuçe'yi daha çok ülke içindeki konumlarını sağlamlaştırma ve dış politikada (özellikle Güney Kore'ye karşı) güvenlik, üstünlük elde etme ve meşruiyet kaygısıyla şekillendirmişlerdir. Öte yandan Scalapino ve Lee (1992: 869), Cuçe ideolojisinin dış politikaya en önemli etkisinin değişime direnç olduğunu belirterek Kuzey Kore'nin uluslararası siyasetteki değişimlerden bağımsız olarak işleyen ve değişime kapalı bir sistem olmasına vurgu yapmışlardır. Benzer bir şekilde Oh ve Hassig (2000: 148) de dış politikada değişimin zor olduğunu belirtirken Kuzey Kore'nin, daha doğrusu Kore toplumunun yaşadığı acı tecrübelerin (Japon işgali, bölünme, bölgedeki büyük güçler arasındaki rekabet) ülkenin dış politikasını şekillendirdiğini ve izlediği saldırgan dış politikanın pek de tutarsız olmadığını vurgulamışlardır.

Uluslararası ilişkiler yazınında Kuzey Kore'nin dış politikasında yaşanan değişiklikler açıklanırken, çalışmalar genellikle değişimi tek bir olay üzerinden açıklama yoluna gitmiştir. Ülkenin dış politikasında yaşanan uzun vadeli değişim ise çalışılmış bir konu değildir. İç dinamiklerle ilgili olarak ülkedeki sistemin (Cuçe) dış politikaya etkisine vurgu yapılmış; ancak Cuçe'nin geçirdiği evrim göz ardı edilmiştir. Örneğin, Şahin ve Şener (2022) Kuzey Kore'nin nükleer programını Cuçe öğretisi kapsamında incelemekle birlikte Cuçe'nin ilk kez ortaya konduğu 1950'li yıllardan bugüne geçirdiği dönüşümü ihmal etmiştir. Bu çalışma ise bir yandan Cuçe'nin zaman içerisindeki evrimine ve devlet başkanlarının Cuçe'yi ele alış biçimlerine diğer yandan da Hermann'ın dış politikada değişim yaklaşımından yola çıkarak Kuzey Kore'nin dış politikasındaki uzun vadeli değişime odaklanmaktadır. Diğer bir deyişle çalışma, kuruluşundan bu yana Kuzey Kore'yi yöneten üç liderin izlediği dış politikayı uzun vadeli bir şekilde ele alarak yazına katkı yapmaktadır. Çalışma böylelikle ülkenin dış politikasının geniş bir zaman aralığı içinde nasıl değiştiğini ve bu değişimin nedenlerini ortaya koymayı amaçlamaktadır.

#### 4. Kuzey Kore Dış Politikasının Temelleri: Kim Il-sung ve Cuçe İdeolojisi

Kim Il-sung, Kuzey Kore dış politikasını oluşturulurken üç büyük hedef ortaya koymuştur: Ülke güvenliğinin sağlanması, meşruiyet kazanma ve kalkınma (Koh, 1994: 61). Özellikle güvenlik ve ekonomi alanlarında Çin ve Sovyetler Birliği ile yapılan ittifaklar, Kuzey Kore için büyük öneme sahip olmuştur. Fakat zaman içerisinde Sovyetler Birliği'nde Nikita Kruşçev'in Joseph Stalin'in 1953 yılındaki ölümünün ardından başlattığı Stalinsizleşme (*de-Stalinization*) süreci, 1960'larda belirginleşen Çin-Sovyet ayrılığı ve 1980'lerde Çin ve Sovyetler Birliği'nde yaşanan liberalleşme süreçleri, Kuzey Kore liderliği arasında ülkenin yönetim yapısı ve Sovyetler Birliği ve Çin ile ilişkiler konularında tartışmaları beraberinde getirmiştir. Kim Il-sung, liberalleşme taraftarlarını bastırmak amacıyla daha fazla Cuçe -kendi kendine yetebilme-vurgusu yapmış ve Cuçe'yi ülkenin resmî ideolojisi ilan etmiştir. Cuçe, ülkenin resmî ideolojisi olarak ilanının ardından ülkede yönetimden günlük yaşama kadar her alanda varlığını hissettirirken kısa zaman içerisinde dış politikada da belirleyici ideoloji haline gelmiştir (Yongchun, 2015: 225; Kakışım, 2017).

##### 4.1 Cuçe: Kuzey Kore'nin Resmî İdeolojisi

Kim Il-sung, Cuçe'yi ilk olarak 1955 yılında yaptığı bir konuşmada tanıtmıştır (Kim, 1992: 55). Kim, Cuçe'yi tanımlarken kendisinin sistemin en tepesinde yer aldığını ve Cuçe'nin karar alıcı beyni görevini gördüğünü belirtmiş, KKİP'ni kararları ileten ve uygulatan sinir sistemine ve Kore halkını emirleri uygulamakla yükümlü vücuda benzetmiştir (Lee, 2003: 111). Lider tarafından belirlenen ve Kore tarihinde önemli yer tutan Joseon Krallığı'ndan (1392-1897) esinlenilerek geliştirilen Cuçe ideolojisi (David-West, 2011: 94), ülkeyi Soğuk Savaş döneminde dış politika anlamında da diğer sosyalist rejimlerden ayırmıştır. Cuçe temelde üç unsuru içinde barındırmaktadır; iç ve dış politikada bağımsızlık (*Chaju*), ekonomik bağımsızlık (*Charip*) ve askeri bağımsızlık (*Chawi*) (Lee, 2003: 106-107). Kim Il-sung, uluslararası politikada ülkelerin kendi kaderlerini tayin edebilmelerine önem verirken, bunu ülkeler arası eşitlik ilkesiyle bağdaştırmış ve Kuzey Kore gibi nispeten zayıf ülkelerin de sistemde bağımsız hareket etmelerinin önemine vurgu yapmıştır. *Chaju* prensibinin bir diğer unsuru da iç politikayla ve ülkedeki hâkim ideolojiyle ilgilidir. Kuzey Kore kuruluşundan itibaren sosyalist ideolojinin etkisindedir ve Soğuk Savaş'ın başlangıcından itibaren ortaya çıkan ideolojik bölünme (Batı-Doğu Blokları) zaman içerisinde Doğu Blokunun içinde de bir bölünmeye yol açmıştır. Doğu Bloku içinde ortaya çıkan ideolojik bölünmeye paralel olarak Kim Il-sung, ülkesini, özellikle Çin ve Sovyetler Birliği'nin etkisinden korumak amacıyla Cuçe'nin *Chaju* prensibini öne çıkararak Kuzey Kore'nin bağımsızlığına vurgu yapmıştır (Li, 1972: 158).

Bahsi her ne kadar ilk kez 1955 yılında geçse de Cuçe'nin resmîyet kazanması 1965 yılını bulmuştur (Kim, 2006: 108). Bu tarihten itibaren Kuzey Kore, içeride olduğu gibi dışarıda da Cuçe ideolojisine uygun bir dış politika izlemeye özen göstermiştir. Güvenlik ve kalkınma amaçları doğrultusunda Çin'e ve Sovyetler Birliği'ne zaman zaman siyasi tavizler veren Kuzey Kore, 1965'ten itibaren her iki ülkeye de mesafeli durmuştur (Kim, 2016: 133). Çin ve Sovyetler Birliği arasında bir denge siyaseti izlemeye yönelik bu tavır değişikliğinde Sovyetler Birliği'ndeki Stalinsizleşme kampanyasının ve Çin-Sovyet ayrılığının önemi büyüktür (Woo, 2018b: 115).

Kim Il-sung döneminde ülkenin güvenlik ve ekonomi hedeflerine yönelik ufak değişimler yaşanmıştır. Hermann'ın dış politikada değişim tezinden hareketle bu dönemde yaşanan değişimler, ilk gruptaki değişimlere, yani ufak ayarlamalara örnek gösterilebilir. Bu dönemde Kuzey Kore'nin güvenlik ve ekonomi hedeflerinde bir değişiklik olmamış ve ülke, her ne kadar Çin ve Sovyetler Birliği arasında bir denge siyaseti izlemişse de Doğu Bloku içinde yer almaya devam etmiştir. Soğuk Savaş yıllarında Kuzey Kore'nin bu iki ülkeye yönelik yaklaşımında en önemli değişiklik, Çin ve Sovyetler Birliği'nde 1980'lerde yaşanan liberalleşme süreçlerinden kaynaklanmıştır. Mao Zedong'un 1976 yılındaki ölümünün ardından 1978 yılından itibaren Çin'in *de facto* lideri konumuna gelen Deng Xiaoping'in önderliğinde Çin Komünist Partisi reform ve dış açılma politikasını uygulamaya koymuştur. Bu doğrultuda ABD'yle ilişkilerinin normalleşmesi Çin'in liberalleşme hedeflerinin ne kadar ciddi olduğunu göstermesi açısından dikkat çekicidir. Çin'in bu açılımı, Kuzey Kore yönetimi tarafından sert bir biçimde eleştirilmiş, Çin'in ABD'yle ilişkilerinin normalleşmesi de Kuzey Kore yönetiminin ülkenin güvenliğinin risk altında olduğu sonucuna varmasına yol açmıştır. Sovyetler Birliği'nde ise Nikita Kruşçev'in başa geçmesinin ardından başlayan Stalinsizleşme süreci, ideolojik olarak sosyalist devletler arasında ideolojik farklılıkların oluşmasına ve 1960'tan itibaren Çin-Sovyet ayrılığına yol açmıştır. Söz konusu anlaşmazlık 1960-1980 arası dönemde Kuzey Kore'yi dış politikada daha dikkatli davranmaya zorlarken Moskova ve Pekin ile ilişkilerin devamlılığı sağlanmış ne çok yakın ilişkiler kurulmuş ne de tamamen uzaklaşmıştır (Kim, 2007: 8-9). İki ülke de Kuzey Kore'nin güvenliği için fazlasıyla önemli olduğundan Kim Il-sung, zaman zaman iki ülkeyi eleştirse de bir yandan aralarında bir denge siyaseti izlerken bir yandan da bu ülkelerle olan ilişkileri bozmamaya gayret etmiştir. Kendisi de bir Stalin hayranı olan Kim Il-sung, Kruşçev'in Stalinsizleşme politikasını eleştirmiş ve ülkesini Stalin tarzı yönetim modeli ile yönetmeye devam etmiştir (Kim, 2006: 107-108). Öte yandan 1950'lerin sonlarından itibaren Mao'ya ve Çin'e yakın duran Kim Il-sung, 1960'ların sonlarına doğru taraf değiştirerek Sovyetler Birliği'ne yakınlaşmıştır (Kim, 2007: 20). Bu yakınlaşmanın en önemli gerekçesi, Sovyetler Birliği ile Sovyet blokunda yer alan sosyalist Doğu Avrupa ülkelerinin 1960'lardan itibaren durgunluğa giren Kuzey Kore ekonomisi için taşıdıkları önemdir. Sovyetler Birliği, 1948-1984 yılları arasında Kuzey Kore'ye 2,2 milyar dolarlık yardım ve kredi sağlamıştır. Ayrıca Kuzey Kore'nin dış ticaretinin yarısından fazlasını gerçekleştirdiği Sovyetler Birliği, ülkeye uluslararası piyasanın altında fiyatlarla petrol ve silah tedarik etmiştir. Sovyetler Birliği'nden temin edilen ucuz petrol, Kuzey Kore'nin tarımsal ve sınai üretimi açısından büyük önem taşımıştır (Ku, 2018a: 133-134). Bununla birlikte Sovyetler Birliği'nde yaşanan gelişmeler ülke içinde tartışmalara sebep olmuş ve Kim Il-sung'u potansiyel değişim taleplerine karşı önlem almaya itmiştir (Kim, 2006: 111). Bu kapsamda yaşanan en belirgin değişim, yukarıda da açıklandığı üzere Cuçe ideolojisinin ülke geneline yayılması ve resmîyet kazanmasıyla gerçekleşmiştir. Ülkenin kendi kendine yeterli olmasını amaçlayan Cuçe ideolojisi, bir yandan Kuzey Kore'nin Sovyetler Birliği ile Çin'den siyasi özerklik kazanmasını sağlarken, diğer yandan ekonomik bağımsızlık (*charip*) ilkesi uyarınca ülke ekonomisinin Sovyetler Birliği'ne olan bağımlılığını azaltmayı hedeflemiştir. Ne var ki 1970'lerden itibaren Sovyetler Birliği'nin Kuzey Kore'ye yaptığı yardım önceki döneme kıyasla azalsa da ülke ekonomisinin Sovyetler Birliği'ne bağımlılığının azaltılması hedefinin ne kadar başarılı olduğu tartışmalıdır (Ku, 2018a: 133).

Bu dönem hakkında genel bir değerlendirme yapıldığında, oluşturulan lider kültürünün Kuzey Kore dış politikası üzerinde etkileri olduğu görülmektedir. Kuruluşundan itibaren güvenlik kaygısının öne çıktığı ülkede Kim Il-sung'un liderlik mücadelesi sırasında ve sonrasında geliştirdiği Cuçe ideolojisi, güvensiz uluslararası ortama rağmen ülkenin ayakta kalabilmesine ve kendi kendine yeterliliğine vurgu yapmıştır. Müttefiklerine hiçbir zaman tam olarak güven duymayan ve nispeten özerk bir dış politika izlemeye özen gösteren Kuzey Kore, Çin ve Sovyetler Birliği'nin hem iç politikalarında hem de ikili ilişkilerinde yaşadığı değişimlerden genellikle olumsuz yönde etkilenmiştir. Bu değişimlerin sonucunda ülke hem iç hem de dış politikasında değişiklikler yapmış, zaman içinde daha fazla içe kapanmış ve dış politikada iki müttefiki arasında nispeten tarafsız bir duruş sergileyerek daha yalnız bir ülke görünümüne kavuşmuştur.

##### **5. Soğuk Savaş Sonrası Dış Politikada Program Değişimi: Kim Jong-il Dönemi ve Önce Ordu Politikası**

Soğuk Savaş boyunca Çin ve özellikle Sovyetler Birliği ile yapılan ekonomik anlaşmalar ve bu ülkelerden alınan yardımlar Kuzey Kore ekonomisine büyük katkı sağlamış, 1960'ların ikinci yarısına kadar Kuzey Kore için hızlı bir ekonomik kalkınma dönemi yaşanmıştır. Ülke ekonomisi 1960'ların sonundan itibaren uzun bir durgunluk dönemine girse de bu durum, Soğuk Savaş'ın bitişine kadar Kuzey Kore halkı için ciddi sorunlara yol açmamıştır. Soğuk Savaş'ın sona ermesi ve 1991 yılında Kuzey Kore ekonomisi için büyük öneme sahip olan Sovyetler Birliği'nin dağılarak yerine liberal ekonomik ilkeleri benimseyen Rusya Federasyonu'nun kurulması, Kuzey Kore'nin en büyük yardım kaynağını ve ticari ortağını kaybetmesine ve 1990'lı yılları ekonomik açıdan büyük sıkıntılar içinde geçirmesine neden olmuştur. 1990'lu yıllarda ülke ekonomisi büyük bir krize girmiş, kişi başına GSYİH 1989 yılında 811 dolardan 1995 yılında 222 dolara gerilemiştir. Bunun sonucunda halk büyük bir kıtlıkla karşı karşıya kalmıştır. Yapılan tahminlere göre 600 bin ile 1 milyon Kuzey Koreli, diğer bir deyişle nüfusun %3'ü ile %5'i yetersiz beslenme nedeniyle yaşamını yitirmiştir (Ku, 2018a: 131-133). Bu gelişmeler sonucunda pek çok kişide ekonomik zorlukların siyasi istikrarsızlığa yol açması beklentisi oluşmuşsa da Kim Jong-il döneminde rejimin varlığını tehdit edecek derecede bir siyasi istikrarsızlık yaşanmamıştır. Park'a (2002: 77) göre, bunun asıl sebebi Kim Il-sung'un yarattığı lider kültürü ve Kuzey Kore'de gelişen siyasi kültürdür. Kim Il-sung döneminde yaratılan ve babadan oğula devam eden lider kültürünün bir sonucu olarak Kim Jong-il'i koltuğundan etmek, Kim Il-sung'a ve onun mirasına hakaret olarak algılanmaktadır. Bu sebeple Kim Jong-il'in mevcut lider kültürü mirasından fazlasıyla faydalandığı söylenebilir. Bu anlayışın, Kim Jong-un döneminde de devam ettiği görülmektedir.

Soğuk Savaş'ın bitimiyle birlikte Asya-Pasifik'te önemli değişiklikler olmuş, Kuzey Kore'nin tehdit algısı ve güvenlik kaygıları artmıştır. 1980'lerin sonu ile 1990'ların başında sosyalist rejimlerin çökmesi ve eski Doğu Bloku ülkelerinin Batı Blokuyla normalleşme sürecine girmesi, Kuzey Kore'nin güvenlik kaygılarını artırarak orduya yaptığı yatırımların artmasına yol açmış; ancak bu yatırımlar, ülke yönetimi tarafından ülkenin güvenliğini sağlamada yetersiz görülmüştür. Kuzey Kore, Soğuk Savaş boyunca Sovyetler Birliği'nin nükleer şemsiyesi altında yer alarak ABD, Güney Kore ve Japonya'ya karşı güvenliğini garanti altına almıştır. Soğuk Savaş'ın sonunda ülkenin en yakın müttefiki olan Sovyetler Birliği'nin dağılması, Kuzey Kore'yi

nükleer şemsiyeden mahrum bırakarak ülkenin güvenlik algısını derinden sarsmıştır. Bu dış şoka ek olarak 1990'ların ilk yarısında ülke içinde de çeşitli gelişmeler yaşanmıştır. Bunlar arasında ülkenin karar alma mekanizmalarını en derinden etkileyen gelişme, ülkenin kurucu lideri Kim Il-sung'un 1994 yılında ölmesi ve yerine oğlu Kim Jong-il'in geçmesi olmuştur. Her ne kadar pek çokları, uluslararası sistemde yaşanan dönüşümü de göz önünde bulundurarak Kim Jong-il'in babasının kaybindan doğan boşluğu dolduramayacağını öngörmüşse de Kim Jong-il aslında 1980'de gerçekleştirilen KKİP'nin 6. Kongresi'nden itibaren ülkenin *de facto* yöneticisi olarak görev yapmıştır. Kim Jong-il bu sayede Kim Il-sung'un ölümüne kadarki 14 yıllık süreçte önce KKİP, ardından da ordu üzerindeki hâkimiyetini pekiştirmiş ve 1992 yılından itibaren Ulusal Güvenlik Komisyonu'nun başına geçerek ordunun ülke siyasetindeki konumunu Parti'nin aleyhine olacak şekilde güçlendirmiştir. Böylelikle Kim Il-sung 1994 yılında yaşamını yitirdiğinde ülkede bir siyasi karmaşa ya da liderlik krizi yaşanmamıştır (Woo, 2018b: 117).

Bu dönemde yaşanan iki gelişme Rusya-Kuzey Kore ilişkilerini Kuzey Kore aleyhine etkilemiştir. İlk olarak, Sovyetler Birliği'nin 1990 yılında Güney Kore ile diplomatik ilişkilerini geliştirmesi Kuzey Kore'de hayal kırıklığı yaratmıştır (Koh 1994, 62). Kim Il-sung'un ülkesinin en yakın müttefiki olarak gördüğü Sovyetler Birliği'nin Güney Kore'yle diplomatik ilişkilerini geliştirilmesi Kuzey'i bir ölçüde yalnızlaştırarak kendi başına hareket etmeye itmiştir (Mack 1993, 342). Benzer bir şekilde 1992 yılında Kuzey Kore'nin iyi ilişkilere sahip olduğu bir diğer ülke olan Çin de Güney Kore'yi ayrı bir devlet olarak tanımış ve resmi ilişkiler geliştirmiştir (Ku, 2018b: 195). Aynı dönemde Kuzey Kore, ayrıca Güney-Kuzey ilişkileriyle ilgili Birleşmiş Milletler (BM)'de aradığı desteği bulamamıştır. Güney Kore'nin gözlemci statüsünden tam üyeliğe geçişi Kuzey Kore için ağır bir yenilgi olmuştur. Kim Il-sung'un iki Kore'nin BM'ye ayrı ayrı üye olmaları yerine tek üyeliğe sahip olması planı reddedilmiş ve Sovyetler Birliği ve Çin'in desteğini alan Güney Kore, 1991 yılında Kuzey Kore ile birlikte BM'nin tam üyesi olmuştur (Woo, 2018a: 41). Diğer bir deyişle iki müttefiki Kuzey Kore'nin planı yerine, Güney Kore'nin planını desteklemiştir.

İkinci olarak, Soğuk Savaş boyunca Sovyetler Birliği'nin nükleer çatısı altında güvende olan Kuzey Kore, yeni dönemde müttefiklerinden yeterli desteği bulamamış ve dış politikada program değişikliğine gitmiştir. Kuzey Kore-Sovyetler Birliği ilişkileri, 1961 yılında imzalanan Ortak Savunma ve İşbirliği Anlaşması'na dayanmaktaydı. Her ne kadar Sovyet-Çin anlaşmazlığı, Kuzey Kore'yi Sovyetler Birliği'ne nispeten mesafeli davranmaya itmişse de ülke Sovyetler Birliği'nin nükleer şemsiyesi altında olmaya devam etmiştir. Fakat Sovyetler Birliği'nin çöküşü, Kuzey Kore açısından ciddi bir güvenlik sorunu ortaya çıkarmış ve Kim Jong-il yönetimini bu sorunu yeniden ele almaya itmiştir. Özellikle 1990'da Sovyetler Birliği'nin Güney Kore'yle ilişkilerini geliştirmeye başlaması, Kuzey Kore'nin tavrında değişikliğe yol açmıştır (Kim, 2007: 21). Diğer taraftan Rusya Federasyonu, normalleşme sürecinin bir parçası olarak Kuzey Kore'yle imzaladığı Dostluk, İşbirliği ve Ortak Yardımlaşma Anlaşması'nı 1996 yılında feshetmiştir. Bu karar, Kuzey Kore'nin güvenlik algısında çok büyük bir etkiye ve değişime yol açmıştır; çünkü anlaşma, Kuzey Kore'de yaşanacak herhangi bir acil durumda Rusya'nın Kuzey Kore lehine askeri müdahalede bulunmasına olanak sağlamaktaydı (Koga, 2009: 23). Soğuk Savaş sonrası dönemde anlaşmanın feshine kadarki süreçte ülkenin güvenlik açığını Rusya'yla kapatan Kuzey Kore liderliği için anlaşmanın feshi, ülkenin savunmasına yapılan yatırımların



artırılmasını adeta zorunlu kılmıştır. 1990'lerde yaklaşık bir milyon askere sahip olan Kuzey Kore, ABD ve Güney Kore'yle karşılaştırıldığında, her ne kadar asker sayısı olarak yeterli görünse de teknolojik açıdan çok geri kalmıştır. Askeri teknolojinin modernleştirilmesi hedefinin kısa vadede yakalanması zor bir hedef olması dolayısıyla Kuzey Kore yönetimi zaman ve maliyet unsurlarını da göz önünde bulundurarak güvenlik ve dış politika alanlarında bir program değişikliğine gitmiştir. Bu kapsamda ülke ilk etapta nükleer kapasitesini geliştirme yoluna gitmiş, sonrasında da Kim Jong-il'in "önce ordu" (*Songun*) politikasını hayata geçirmiştir. Ülkenin savunma ve güvenlik kaygıları düşünüldüğünde nükleer silahlanma çalışmaları Kuzey Kore'nin caydırıcılığını arttırmıştır.

### 5.1 Önce Ordu (*Songun*) Politikası

Sovyetler Birliği'nin çöküşüyle birlikte uzmanlar yakın bir gelecekte Kuzey Kore'nin de bir çöküş sürecine gireceğini öngörmüşlerdi (Deane, 2005: 8; Koga, 2009: 21). Fakat Kim Jong-il, toplumsal ve ekonomik çöküşe rağmen, rejimi ayakta tutmayı başardı. Kuzey Kore için, her ne kadar mesafeli durmaya çalışsa da özellikle ekonomik açıdan Sovyetler Birliği'nin desteği vazgeçilmezdi. Soğuk Savaş'ın sona ermesi ve Sovyetler Birliği'nin tarih olması, Kuzey Kore yönetiminin ülke içinde ve dış politikada saldırgan bir tutum takınması açısından bir kırılma noktasıdır. Resmi olarak 1997 yılında ilan edilen *Songun*, Çuçe ideolojisinin devamı olmakla birlikte onu geliştiren ve dış politikaya da yön veren bir yönetim felsefesidir. Her ne kadar önce ordu politikası kapsamında orduya yapılan yatırım artmışsa da *Songun*'u önemli kılan asıl neden, ordunun Kuzey Kore yönetiminde edindiği yeni roldür. *Songun* politikasından önce ülkenin, liderin ardından en yetkili kurumu KKİP iken, yeni politikayla birlikte ordu ve komutanlar, ülke yönetiminde söz sahibi olmuş ve bu durum kısa süreli bir çift başlılığa sebep olmuştur. Kim Jong-il'in *Songun* felsefesine göre Kuzey Kore bir insanın bedeni gibi düşünüldüğünde ordu beyin görevi görecek. Yatırımlarda orduya öncelik verilmesinin ötesinde ordu devlet planlamasında, iç meselelerde ve dış meselelerde de çözüm üreten bir beyin görevi üstlenecek. İzlelenen bu yöntem değişikliği ile Kim Jong-il uzun vadede hem içeride hem de dışarıda varoluşsal sorunların üstesinden gelmeyi planlıyordu (Kim, 2010: 60).

Bu yaşanan değişimin önemli bir nedeni, KKİP'nin rejimin karşı karşıya bulunduğu sorunlar karşısında yetersiz bir görüntü sergilemesiydi. Kim Il-sung'un ölümünün ardından Çuçe ideolojisinin öncü kolu olan KKİP, halkın desteğini almakta başarısız olmuştu. Ekonominin her geçen gün daha da kötüye gitmesi ve KKİP'nin halkın karşı karşıya bulunduğu sorunların üstesinden gelememesi, Kim Jong-il'in ülke yönetiminde Parti yerine orduya dayanmasıyla sonuçlanmıştır. Bu değişimin bir diğer nedeni, Kim Jong-il'in Sovyetler Birliği ve Doğu Avrupa sosyalist rejimlerinin çöküşü nedeniyle ilgili düşüncesinde yatmaktadır. Kim Jong-il'e göre, bu rejimler, ekonomik sorunlar nedeniyle değil, toplumlarını yönetmelerini sağlayacak bir ideolojilerinin ve rejimi koruyacak güçlü ordularının olmaması nedeniyle çökmüştü. Bu düşüncenin bir sonucu olarak Kim Jong-il, 2011 yılındaki ölümüne kadar orduyu, Çuçe ideolojisinin öncü kolu ve rejimin bekçisi olarak geliştirmeye çabalamıştır. Özetle, önce ordu politikası, KKİP'nin ülkenin karşı karşıya bulunduğu iç ve dış sorunlar karşısında yetersiz kalması nedeniyle bu sorunların üstesinden güçlü ordu ile gelmek amacıyla Kim Jong-il tarafından geliştirilmiştir. Bununla birlikte belirtmek gerekir ki lider kültü (*Suryong*) sayesinde ordu hiçbir zaman Kim Jong-il'e karşı gelecek bir güce sahip olmamıştır. Aksine Kim Jong-il'in

ordu üzerindeki denetimi zaman içinde artmış, ordunun temel görevi liderin konumunu iç ve dış tehditler karşısında korumak olmuştur (Woo, 2018b: 118-119).

Soğuk Savaş'ın sona ermesinin ülkenin dış politikasına en büyük etkisi, Kuzey Kore'nin dış dünya ile ilişkilerinde daha saldırgan bir tutum almasına yol açmasıdır. Dönemsel olarak bu tutumda -saldırgan tutumun yumuşaması veya şiddetlenmesi gibi- değişiklikler yaşansa da Soğuk Savaş sonrası süreçte asıl olarak dış politika hedeflerine yönelik bir yöntem değişimi gerçekleşmiştir. Saldırgan tutumun en büyük işareti, ülkede yürütülen nükleer teknoloji çalışmalarıyla birlikte önemi artan nükleer silahlanma çalışmalarıdır. Aslında Kuzey Kore'nin nükleer teknoloji çalışmaları 1960'larda Sovyetler Birliği'nin yardımlarıyla başlamış, zaman içerisinde iki ülke arasında teknoloji transferleri ve ortak çalışmalar devam etmiştir (MacDonald, 2013). Ne var ki bu süreçteki işbirliği, Sovyetler Birliği'nin sivil faaliyetler için destek vermesi nedeniyle Kuzey Kore'nin nükleer silahlara sahip olmasıyla sonuçlanmamıştır (Çelik ve Türkel, 2021: 8). Soğuk Savaş'ın sona ermesi ve Sovyetler Birliği'nin yıkılması sonucunda Kuzey Kore'nin artan güvenlik endişeleri, Kim Jong-il yönetiminin, kaynakları kısıtlı olan ülkenin güvenliğinin en iyi şekilde nükleer çalışmalara ağırlık vererek sağlanacağı kararını vermesine neden olmuştur. Bu karar ve nükleer silahlanma yönünde atılan adımlar, başta Japonya ve Güney Kore gibi Kuzey Kore'nin komşuları olmak üzere bölge ülkeleri arasında ve ABD'de huzursuzluğa yol açmıştır (Chance, 2013).

Kuzey Kore'nin geleceğiyle ilgili belirsizliklerin devam ettiği süreçte Kim Jong-il'in politika tercihleri, dış politikada saldırgan tutumun artacağına dair işaretler vermiştir. Özellikle önce ordu politikası, halkın ciddi ekonomik sorunlar yaşadığı bir süreçte askeri harcamaların artmasına, ordunun aşırı genişlemesine ve ülkenin saldırgan ve sık sık maceracı bir dış politika izlemesine yol açmıştır. 1993 yılında Kuzey Kore'nin Nükleer Silahsızlanma Anlaşması'ndan ayrılmaya yönelik tutumu, 1998'de Taepodong I füzesinin Japonya hava sahasında denenmesiyle zirveye ulaşmıştır (Kim ve Choy, 2012: 62). Saldırgan tutum bununla kalmayarak 2006 yılında Taepodong II füzesinin denenmesiyle devam ettirilmiştir (füzenin menzilin ABD'nin batı kıyısına ulaşabileceği tahmin edilmektedir). Kuzey Kore'nin nükleer programı bu dönemde yoğunlaşırken, uluslararası camianın ülkenin nükleer silahlanmasını durdurma girişimleri ise yetersiz kalmıştır. 1994'te ABD ile imzalanan Çerçeve Anlaşması (*Agreed Framework*) veya Cenevre Anlaşması, Kuzey Kore'nin nükleer silahlanma programını sonlandırması karşılığında ABD'den gıda ve petrol yardımı ile teknik ve mali destek sağlanmasını içerse de gerek Kuzey Kore'nin gerekse ABD'nin tutumu ve verdikleri sözleri yerine getirmemeleri, anlaşmanın 2002'de sonlanmasına yol açmıştır (Lee, 2018: 155-158).

ABD, Kuzey Kore'nin füze denemelerine ülkeye yaptığı petrol tedarikini durdurarak ve birtakım yaptırımları uygulamaya sokarak yanıt vermiştir. George W. Bush yönetimi, ekonomik yaptırımların Kuzey Kore'yi saldırgan tutumundan uzaklaştıracağını düşünse de Kim Jong-il daha ileri giderek 2002'de önce Uluslararası Atom Enerji Ajansı denetçilerini Yongbyon nükleer tesislerinden çıkartmış, 2003'te de Nükleer Silahsızlanma Anlaşması'nı feshetmiştir. Bunun üzerine 2003 yılında ABD, Çin, Rusya, Japonya, Kuzey ve Güney Kore'de oluşan Altı Parti görüşmeleri başlamıştır. Ne var ki 2003-2009 yılları arasında gerçekleşen toplantılar çözüm üretmede yetersiz kalmış, Kuzey Kore'nin nükleer silahlanma faaliyetleri durdurulamamış ve ülke, Ekim 2006'da gerçekleştirdiği ilk başarılı nükleer silah denemesinin

ardından resmi olarak nükleer güç konumuna erişmiştir. Nisan 2009’da Kuzey Kore, Altı Parti görüşmelerinden çekildiğini duyurmuş ve mayıs ayında ikinci nükleer silah denemesini gerçekleştirmiştir (Lee, 2018: 158-161).

Kuzey Kore’nin dış dünya ile ilişkilerindeki genellikle çatışmacı, zaman zaman da ılımlı tutumu, Güney Kore ile ilişkilerinde de görülmektedir. Güney Kore’nin Kim Daejung ve Roh Moo-hyun’un başkanlıkları sırasında takip ettiği ılımlı Günişığı Politikası karşısında Kim Jong-il liderliğindeki Kuzey Kore, bir yandan sınır bölgesinde birkaç düşük düzeyli silahlı çatışmanın başlatıcısı olmuş, diğer yandan da her iki liderle de zirve düzenlenmesini kabul etmiş ve kendi sınırları içinde Güney Kore ile ortak işlettiği Kaesong Sanayi Kompleksi’nin kurulmasına onay vermiştir. Muhafazakâr Lee Myong-bak’ın 2008’de başkan seçilmesinin ardından Güney Kore, Günişığı Politikası’ndan vazgeçmiş ve Kuzey Kore’ye yönelik daha katı bir politika izlemeye başlamıştır. İkili ilişkilerin olumsuz seyrettiği bu dönemde Kuzey Kore ordusu, Mart 2010’da Güney Kore’nin *Cheonan* savaş gemisini batırması ve Kasım 2010’da da Yeonpyeong Adası’nı bombalaması ve toplamda 52 kişinin ölümüne neden olmuştur (Lee, 2018: 161; Woo, 2018b: 123).

Özetlemek gerekirse, Kim Jong-il’in liderliği altındaki Kuzey Kore, Soğuk Savaş’ın sona ermesi, sosyalist blokun dağılması ve ülke içinde yaşanan ekonomik ve toplumsal sorunlar karşısında bir çıkış yolu olarak önce ordu politikasını uygulamaya koymuştur. Bu politikanın sonucu olarak askeri harcamalar artırılmış ve nükleer silahlanma çalışmaları yoğunlaştırılmış, ordunun iç ve dış politika karar alma mekanizmalarındaki ağırlığı artırılmış ve ülke, maceracı ve saldırgan bir dış politika izlemeye başlamıştır. Diğer bir deyişle, Soğuk Savaş’ın sona ermesinin neden olduğu dış şok sonucunda Kuzey Kore liderliği ülkenin güvenliğini sağlamak amacıyla dış politikasında bir program değişikliğine giderek yeni yöntemleri uygulamaya koymuştur.

#### **6. Kim Jong-un Dönemi ve Paralel Kalkınma (*Byungjin*) Politikası**

Kuzey Kore liderlerinin yönetim biçimleri incelendiğinde aralarında yönetsel farklılıklar olduğu söylenebilir. Kurucu lider Kim Il-sung, KKİP’ni ülke yönetiminde etkili bir kurum olarak kullanmıştır. Kendisinden sonra başa geçen oğlu Kim Jong-il, Soğuk Savaş sonrası ortaya çıkan sorunlardan ötürü güvenliğe önem vermiş, bu dönemde ordu gücünü artırırken KKİP önemini büyük oranda yitirmiştir. 2011 yılında yönetimi devralan Kim Jung-un’un hem dedesinin hem de babasının yönetim biçimlerini benimsediği söylenebilir (McEachern, 2019: 36). Aralarındaki farklara rağmen üç liderin yönetim biçimleri açısından bazı ortak özellikleri de vardır. Üçü de başa geçtikten kısa bir süre sonra kendi otoritelerini sağlamlaştırmak amacıyla ülke içinde kritik hamleler yapmıştır. Kim Il-sung, ülke içindeki muhalefeti adeta yok etmiştir (Park, 2005: 227-228). Kim Jong-il başa geçtiğinde birtakım uzmanlar, ülkenin çöküş sürecine gireceğini öngörse de Kim Jong-il babasının izinden giderek yönetimdeki potansiyel rakiplerini mahkûm ettirmiş ve önce ordu politikasını hayata geçirmiştir. 2011 yılında başa geçen Kim Jong-un da Kuzey Kore’nin en güçlü kişilerinden halasının eşi Jang Song-thaek’i idam ettirerek (Branigan, 2013) yönetimde mutlak güce sahip olacağına dair mesaj vermiştir. Nitekim 2019’un Eylül ayında anayasada yapılan değişiklikle “Yüce Lider” olarak adlandırılan Kim Jong-un, ülke içinde mutlak otoritesini garantilemeyi başarmıştır (Smith, 2019). Yapılan bir diğer önemli değişiklik, *Cuçe* ve *Songun* kavramlarının anayasadan çıkarılması olmuştur. Değişiklik öncesinde

anayasada ülkenin ideolojisi olarak Cuçe ve *Songun* düşünceleri yer alırken, değişikliğin ardından 'Kimilsungizm-Kimjongilizm' ülkenin yol gösterici ilkesi olarak kabul edilmiştir (Isozaki, 2019).

Anayasada 2019 yılında yapılan değişiklikler, Kim Jong-un yönetimi altında 2011 yılından bu yana uygulamada gerçekleştirilen değişiklikleri yansıtmaktadır. Bu süreçte yapılan en önemli değişikliklerden biri, Kim Jong-il döneminde uygulanan önce ordu politikasının sona erdirilerek ordunun yönetim ve dış politikadaki etkisinin kırılması olmuştur. Ordunun karar alma mekanizmalarında çok güçlendiğini fark eden Kim Jong-un, bunun yerine KKİP'ni güçlendirerek orduda öne çıkan generalleri geri plana çekmiş ve bir bakıma dengeleme politikası izlemiştir. 2016'da devlet politikalarına yön veren Ulusal Savunma Komisyonu'nu kapatarak Devlet İşleri Komisyonu'nu kurmuş ve yönetimde ordu mensupları yerine daha fazla sivilere yer vermiştir (Aoki, 2021; Jo, 2021).

Kim Il-sung dönemi, dış politikada değişim açısından yalnızca hedeflerdeki küçük çaplı/ufak ayarlamalardan oluşmuştur. İç politikada Cuçe ideolojinin gelişimi, dış politikada Kuzey Kore'nin Sovyetler Birliği ve Çin'e daha mesafeli bir duruş sergilemesine ve nispeten bağımsız bir dış politika izlemesine yol açmıştır. Kim Jong-il ise önce ordu politikasıyla program, yani hedeflerde yöntem değişikliğine gitmiş ve nükleer silahlanma faaliyetlerine yatırım yaparak Kuzey Kore'nin hem güvenliğini hem de caydırıcılığını artırmıştır. 2011 yılında başa geçen Kim Jong-un ise bir yandan nükleer silahlanma faaliyetlerine devam ederken, babasından farklı olarak aynı zamanda ekonomik kalkınmaya da önem vermiştir. Bu durum, 2019 yılında anayasanın dış ticaret ile ilgili kısmında yapılan değişiklikte de görülmektedir. Kuzey Kore, yapılan değişiklikle "ticaret yapısını geliştirmeyi" ve "dış ekonomik ilişkilerini eşitlik ve mütekabiliyet çerçevesinde geliştirmeyi" hedeflediğini ortaya koymuştur (Isozaki, 2019). Kısacası, Kim Jong-un döneminde önce ordu politikasının terk edilmesiyle birlikte dış politikada program değişikliğine gidilmiştir.

Paralel kalkınma (*Byungjin*) olarak adlandırılan bu yaklaşımın bir sonucu olarak Kim Jong-un'un yönetimi altında Kuzey Kore kısa bir süre için de olsa Güney Kore ve ABD'yle olan ilişkilerini geliştirme yönünde adımlar atmıştır. Bununla birlikte Kim Jong-il'den kalan saldırgan ve maceracı dış politika terk edilmemiş ve Kuzey Kore'nin özellikle bu iki ülke ile ilişkileri inişli çıkışlı bir grafik sergilemiştir. Kuzey Kore, Kim Jong-un'un 2011 yılında ülkenin liderliğini devralmasından bu yana 3 nükleer deneme gerçekleştirmiştir. Bunlardan ilki, 12 Şubat 2013 yılında gerçekleştirilmiştir. Bu denemenin şiddeti dolayısıyla ülkenin nükleer gücü, uluslararası camia tarafından caydırıcı bulunmaya başlanmıştır. Son iki nükleer silah denemelerini 2016 ve 2017 yıllarında gerçekleştiren Kuzey Kore, bu süreçte ayrıca ABD'ye ulaşabilecek menzile sahip balistik füzeler geliştirmiş ve bu füzeleri başarılı bir şekilde test etmiştir (Aoki, 2021; Çelik ve Türkel, 2021: 13-14). Bu testler sonucunda 2017'nin sonunda Kuzey Kore, uzun yıllardır gerçekleştirmeye çabaladığı nükleer güç olma hedefine ulaştığını açıklamıştır (Milani, 2021).

2016 ve 2017 yıllarında gerçekleştirilen testler, uluslararası camianın tepkisini çekmiş ve ülkeye uygulanan ekonomik yaptırımların şiddetlenmesine yol açmıştır. Bununla birlikte 2017 ve 2018 yıllarında gerçekleşen bir dizi gelişme Kuzey Kore'nin dış politikasında yumuşamaya gitmesine yol açmıştır. 2016 seçimlerinde ABD Başkanı seçilen Donald Trump'ın Ocak 2017'de görevi devralmasının ardından Kuzey Kore'ye yönelik tehditleri, yine 2017 seçimlerinde Güney

Kore Devlet Başkanı seçilen Moon Jae-in'in kuzey komşusuna yönelik yapıcı adımları ve Kim Jong-un yönetiminin paralel kalkınma politikası uyarınca özellikle 2017 yılından itibaren ekonomik kalkınmayı öncelleyen adımları, yarım adadaki tansiyonun düşmesine ve nükleer silah kapasitesinden emin olan Kuzey Kore'nin ılımlı bir dış politika izleyerek ABD ve Güney Kore ile ilişkilerini iyileştirme yönünde politikalar geliştirmesiyle sonuçlanmıştır (Çelik ve Türkel, 2021: 14; Milani, 2021).

Başkan Trump'ın zaman içinde Kuzey Kore'ye karşı ılımlı bir siyaset izlemeye başlaması ve Kim Jong-un ile yüz yüze görüşmeye niyeti olduğunu belirtmesinin ardından Pyongyang yönetimi, tüm nükleer silah ve balistik füze testlerine ara verdiğini açıklamıştır. Ne var ki ABD-Kuzey Kore ilişkilerindeki yumuşama dönemi kısa sürmüş, 2018 ve 2019 yıllarında Donald Trump ile Kim Jong-un arasında gerçekleşen nükleer silahsızlanma görüşmelerinin 2019 yılında başarısızlıkla sona ermesi ile birlikte ikili ilişkiler yeniden gerilmeye başlamıştır (Çelik, 2020: 38-39).

Benzer bir süreç Kuzey-Güney ilişkilerinde de yaşanmıştır. Kuzey Kore'nin 2017 yılında nükleer güç hedefine başarıyla ulaştığını açıklamasının ardından Kim Jong-un, 2018 yılının başlarında dış politikasının merkezine askeri faaliyetler yerine diplomatik müzakereleri yerleştirmiştir. Bu kapsamda bir yandan Trump ve Çin Devlet Başkanı Xi Jinping ile görüşmeler gerçekleştirmiş, bir yandan da Güney Kore ile ilişkilerini geliştirmek amacıyla Moon Jae-in'in ılımlı yaklaşımına olumlu karşılık vermiştir. İki ülke arasında karşılıklı atılan adımlar sonucunda Kim ve Moon üç görüşme gerçekleştirmiş ve Kaesong'da 2018'in Eylül ayında Koreler Arası İrtibat Bürosu oluşturulmuştur. İkili ilişkilerdeki olumlu gelişmelere karşın Kuzey Kore, Güney ile gelişen ilişkilerden beklediği asıl faydayı sağlayamamıştır. Pyongyang yönetiminin Güney Kore'den birincil beklentisi, ikili ekonomik işbirliğinin gelişmesi ve böylelikle paralel gelişme (*Byungjin*) politikasının ekonomik ayağının başarıya ulaşmasıdır. Ne var ki Kuzey Kore'ye uygulanan ekonomik yaptırımların kaldırılmaması nedeniyle Güney Kore istediği adımları atamamış ve bunun sonucunda iki Kore arası ilişkiler yeniden bozulmuştur. Öyle ki Haziran 2020'de Kuzey Kore, Koreler Arası İrtibat Bürosu'nu havaya uçurmuş (Milani, 2021) ve ABD'nin Güney Kore ile gerçekleştirdiği askeri tatbikatlara tepki olarak balistik füze denemelerine kaldığı yerden devam etmiştir. 2021'de 8 füze testi gerçekleştiren (Green, 2022) Kuzey Kore, 2022'de rekor sayıda -88- füze ateşlemiştir (Choe ve Rich, 2022).

2011'den günümüze Kim Jong-un yönetiminin dış politikası incelendiğinde öncüllerinin, özellikle Kim Jong-il'in izlediği politikanın ana hatlarıyla devam ettiği görülmektedir. Bununla birlikte bu dönemde ülke yönetimi, zaman zaman uluslararası camianın artan baskıları ve ekonomik kalkınma ihtiyacı nedeniyle ılımlı politikalara yönelmişse de genel itibarıyla önceki iki döneme kıyasla daha saldırgan bir dış politika izlemiştir. Askeri teknolojiye yapılan yatırımların devam ettiği 11 yıllık süreçte Kim Jong-un yönetimi 200'den fazla füze denemesi gerçekleştirmişken, bu sayı Kim Il-sung ve Kim Jong-il dönemlerinde toplamda 30 olmuştur (Aoki, 2021). Kısacası, Kim Jong-un yönetimi altında Kuzey Kore, dış politika hedeflerine ulaşmak için zaman zaman askeri güç kullanımı yerine diplomatik müzakerelerin kullanılması gibi farklı yöntemleri uygulamaya koyarak program değişikliğine gitmişse de Kim Il-sung ve Kim Jong-il dönemlerinde izlenen dış politika hedeflerinde herhangi bir değişikliğe gitmemiştir.

## 7. Sonuç

Bu çalışmada Charles Hermann'ın (1990) dış politikada değişim modeli kullanılarak Kuzey Kore'nin dış politikasındaki değişim incelenmiştir. Hermann, devletler için dış politikada değişimi dört aşamada tanımlamıştır. Hermann'ın modelinden yola çıkarak Kuzey Kore'nin kuruluşundan bu yana dış politikasındaki değişim incelendiğinde, ülkenin dış politikasında farklı dönemlerde Hermann'ın yaklaşımının ilk iki aşaması olan ufak ayarlamalar ve program değişimleri yaşandığı görülmektedir. Soğuk Savaş'ın sona ermesiyle birlikte uluslararası sistemde yaşanan değişim, Kuzey Kore dış politikası için önemli bir dönüm noktası olmuştur. Soğuk Savaş sırasında Kuzey Kore dış politikasında yalnızca hedeflere yönelik küçük değişimler yaşanmıştır. Kuruluşundan itibaren güvenlik kaygısının öne çıktığı ülkede Kim Il-sung'un liderlik mücadelesi sırasında ve sonrasında geliştirdiği Cuçe ideolojisi, güvensiz uluslararası ortama rağmen ülkenin ayakta kalabilmesine ve kendi kendine yeterliliğine vurgu yapmıştır. Müttefiklerine hiçbir zaman tam olarak güvenmeyen ve nispeten özerk bir dış politika izlemeye özen gösteren Kuzey Kore, Çin ve Sovyetler Birliği'nin hem iç politikalarında hem de ikili ilişkilerinde yaşadığı değişimlerden genellikle olumsuz yönde etkilenmiştir. Bu değişimlerin sonucunda ülke hem iç hem de dış politikasında değişiklikler yapmış, zaman içinde daha fazla içe kapanmış ve dış politikada iki müttefiki arasında nispeten tarafsız bir duruş sergileyerek daha yalnız bir ülke görünümüne kavuşmuştur.

Sovyetler Birliği'nin yıkılmasıyla hem Doğu Asya'da hem de uluslararası sistemde dengeler değişmiş, bunun sonucunda Kuzey Kore kendini koruma içgüdüleriyle hareket ederek daha saldırgan bir dış politika izlemiştir. Bu durum Kuzey Kore dış politikasında ikinci aşamaya geçilmesine, yani yöntem değişikliğine gidilmesine yol açmıştır. Soğuk Savaş döneminde Sovyetler Birliği'nin sağladığı nükleer güvenlik şemsiyesi 1990'lı yıllarda ortadan kalkmış, Kuzey Kore de güvenliğini ve caydırıcılığını artırmak amacıyla Kim Jong-il liderliğinde uygulamaya koyduğu önce ordu politikası çerçevesinde nükleer silahlanma faaliyetlerine yatırım yapmaya başlamıştır. Bu politikanın sonucu olarak ordunun iç ve dış politika karar alma mekanizmalarındaki ağırlığı artmış ve ülke maceracı ve saldırgan bir dış politika izlemeye başlamıştır.

2011 yılında babasının ani ölümünün ardından ülkenin yönetimini devralan Kim Jong-un'un liderliği altında Kuzey Kore dış politikasında birtakım değişiklikler yaşanmakla birlikte Kim Jong-il'in izlediği dış politika, ana hatlarıyla sürdürülmektedir. Kim Jong-un döneminde yapılan en önemli değişiklik, önce ordu politikasının terk edilerek yerine paralel kalkınma politikasının konması olmuştur. Bu değişik sonucunda ordunun ülke yönetimi ve dış politikadaki etkisi kırılmıştır. Ayrıca nükleer silahlanmaya yapılan yatırımlara ek olarak ekonomik kalkınmaya da önem verilmiştir. Bunun sonucunda Kim Jong-un yönetimi, dış politikada program değişikliğine giderek ülkenin dış ekonomik ilişkilerini geliştirmeyi hedeflemiş ve kısa bir süre için de olsa 2018-2019 yıllarında bu yönde adımlar atmıştır.

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## Extended Summary

### Change in North Korea's Foreign Policy since Its Foundation: A Historical Analysis

This study analyzes North Korea's foreign policy since its establishment by utilizing Charles Hermann's approach to foreign policy change. The main problem of the study is on what grounds North Korea has changed its foreign policy. In addition to answering this question, the study also aims to explain why North Korea has pursued an aggressive foreign policy, especially in the post-Cold War period.

North Korea, which has pursued an aggressive foreign policy in recent years, has attracted the attention of the world, especially East Asian countries, due to its growing nuclear arsenal and increasing nuclear activities. Considering that North Korea exchanges nuclear technology and missiles with Pakistan and Myanmar, North Korea has an impact not only on the East Asian region but also on the Asian continent as a whole. In this respect, North Korea's foreign policy is important in terms of influencing both regional policies and the US's stance in the region.

In the International Relations literature, while analyzing the changes in North Korea's foreign policy, studies have generally tried to explain the change through a single event. The long-term change in the country's foreign policy, however, has not been studied. Regarding domestic dynamics, the impact of the country's system (*Juche*) on foreign policy has been emphasized; but its evolution has been ignored. This study, on the one hand, focuses on the evolution of *Juche* over time and the way the three heads of state have evaluated it, and on the other hand, it focuses on the long-term change in North Korea's foreign policy. In other words, the study contributes to the literature by analyzing the foreign policy of the three leaders who have ruled North Korea since its establishment in a long-term perspective. In this way, the study aims to reveal how the country's foreign policy has changed over a wide period of time and the reasons for this change.


In this study, the change in North Korea's foreign policy is analyzed by using Charles Hermann's model of foreign policy change. Hermann discussed the change in foreign policies of states in four stages. The first stage, adjustment changes, consists of changes in the level of effort spent by the country toward foreign policy objectives. The second phase, program changes, involves a change of methods or tools toward goals. The third stage is the goal or problem changes in foreign policy. The fourth is the stage of a fundamental change in foreign policy. When the change in North Korea's foreign policy since its establishment is examined based on Hermann's model, it is seen that in different periods the country has undergone two policy changes in its foreign policy, namely adjustment and program changes, the first two stages of Hermann's approach. The change in the international system with the end of the Cold War was an important turning point for North Korean foreign policy. During the Cold War, North Korean foreign policy underwent only minor changes in terms of objectives. In a country where security concerns have been at the forefront since its foundation, Kim Il-sung's *Juche* ideology, developed during and after his leadership struggle, emphasized the country's survival and self-sufficiency despite the insecure international environment. North Korea, which has never fully trusted its allies and has been careful to pursue a relatively autonomous foreign policy, has generally been negatively affected by the changes both in the domestic policies of China and the Soviet Union and in their bilateral relations. As a result of these changes, the country has made adjustments in its domestic as well as foreign policies, becoming more isolated over time and adopting a relatively neutral stance between its two allies.

With the collapse of the Soviet Union, the balance in both East Asia and the international system changed, and as a result, North Korea pursued a more aggressive foreign policy, acting on the motivation of self-preservation. This led to a second stage change in North Korea's foreign policy, namely a change of method. As the nuclear security umbrella provided by the Soviet Union during the Cold War period disappeared in the 1990s, in order to increase its security and deterrence, North Korea started to invest in nuclear weaponization activities within the framework of the *songun* (army-first) policy implemented under the leadership of Kim Jong-il. As a result of this policy, the weight of the military in domestic and foreign policy decision-making mechanisms increased and the country began to pursue an adventurous and aggressive foreign policy.

Since 2011, under the leadership of Kim Jong-un, who took over the leadership of the country after the sudden death of his father, there have been some changes in North Korean foreign policy. Still, the foreign policy pursued by Kim Jong-il has been mainly maintained. The most important change under Kim Jong-un was the abandonment of the *songun* (military-first) policy and its replacement with *byungjin* (parallel development) policy. As a result of this change, the influence of the military in the country's administration and foreign policy was broken. Under Kim Jong-un, in addition to investments in nuclear armament, economic development was also emphasized. As a result, the Kim Jong-un administration aimed to improve the country's foreign economic relations by changing the foreign policy program and took steps in this direction in 2018-2019, albeit for a short period of time.

## Türk Arşiv Belgelerine Göre 1923-1939 Yılları Arasında Türkiye ve Almanya Ticari İlişkileri: Savaş, Kriz ve Anlaşmalar

Sema Keleş Yıldız<sup>1</sup> 

Zehra Çankaya Bayraklı<sup>2</sup> 

<b>Türk Arşiv Belgelerine Göre 1923-1939 Yılları Arasında Türkiye ve Almanya Ticari İlişkileri: Savaş, Kriz ve Anlaşmalar</b>	<b>Trade Relations between Turkey and Germany from 1923 to 1939 according to the Turkish Archive Documents: War, Crisis and Agreements</b>
<b>Öz</b> Birinci Dünya Savaşı'nda müttefik olan Almanya ve Türkiye'nin ilişkileri savaşın neticesinde kesintiye uğrasa da, Türkiye Cumhuriyeti'nin kurulmasının akabinde iki ülke arasında dostluk ve ticaret anlaşmaları için müzakerelere başlanmıştır. Makalede Türkiye ve Almanya'nın 1923-1939 yılları arasında geliştirdiği ticari ilişkiler, savaş sonrası süreç, 1929 Büyük Buhranının etkileri, geçici (modus vivendi) ve esas ticaret anlaşmaları, kliring sözleşmeleri ve Berlin Türk Ticaret Odası'nın faaliyetleri üzerinden incelenmiştir. Temel kaynaklar olarak Türkiye Cumhuriyeti Cumhurbaşkanlığı Devlet Arşivleri Başkanlığı Cumhuriyet Arşivi ve Dışişleri Bakanlığı Türk Diplomatik Arşivi'nden elde edilen belgelerin kullanıldığı çalışmada 1923-1939 yılları arasında Türkiye ve Almanya'nın ticari ilişkilerinin gelişimi arşiv belgeleriyle desteklenerek analiz edilmeye çalışılmıştır.	<b>Abstract</b> Although the relations between Germany and Turkey were interrupted due to the results of the First World War, negotiations were started for friendship and trade agreements between these two war allies immediately after the establishment of the Turkish Republic. In this article, the trade relations between Turkey and Germany between 1923 and 1939 were examined by analyzing the post-war period, the Great Depression, temporary (modus vivendi) and main trade treaties, clearing agreements, and the Berlin Turkish Chamber of Commerce activities. This article analyses the development of commercial relations between Turkey and Germany between 1923 and 1939 by using the documents obtained from the Presidency of the Republic of Turkey Directorate of State Archives' Republican Archives and the Ministry of Foreign Affairs Turkish Diplomatic Archives.
<b>Anahtar Kelimeler:</b> Türkiye, Almanya, Dış Ticaret, Büyük Buhran, Ticaret Anlaşmaları, Kliring	<b>Keywords:</b> Turkey, Germany, Foreign Trade, The Great Depression, Trade Agreements, Clearing
<b>JEL Kodları:</b> N00, N70	<b>JEL Codes:</b> N00, N70

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Yazar 1'in makaleye katkısı %50, Yazar 2'nin makaleye katkısı %50'dir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Giriş

Türk-Alman ticari ilişkilerinin başlangıç tarihi net bir biçimde ortaya koyulmasa da XV. yüzyılda Leipzig, Dresden, Augsburg, Regensburg, ve Nürnberg gibi Alman tekstil merkezlerinin Osmanlı pamuk, ipek ve yünlerinin başlıca alıcıları oldukları bilinmektedir (Önsoy, 1982: 5). Bu ticaret Venedikli, Cenovalı, İspanyol, Fransız, İngiliz ve Avusturyalı tüccarlar aracılığıyla gerçekleşmekteydi (Striedel, 1919: 4 akt. Önsoy, 1982: 5). Almanya'nın Augsburg kentinden tüccarlar Yakın Doğu pazarı ile olan ticaretlerini vasıtasız hale getirmek için 1570 yılında girişimde bulunmuşlar, fakat yapılan bu girişim başarısızlıkla sonuçlanmıştı. Bu süreç XIX. yüzyılın sonunda Alman-Osmanlı limanları arasında gemi seferleri başlayana kadar devam etmiştir (Kummer, 1927: 20; akt. Önsoy, 1982: 5).

Prusya ve Osmanlı İmparatorlukları arasındaki yakın ilişkiler XVIII. yüzyılda Büyük Frederick zamanında başlamıştır (Stein, 2019: 1). Hatta Büyük Frederick, Yedi Yıl Savaşları arifesinde ve savaş esnasında, Avusturya ve Rusya'ya karşı bir ittifak umuduyla birkaç subayı İstanbul'a göndermiştir (Pröhl, 1986: 85-114; akt. Stein, 2019: 3). Ancak iki ülkenin diplomatik ilişkilerine dair en eski temas bundan daha önce, Pasarofça Barışı görüşmeleri esnasında Osmanlı sadrazamı Nişancı Mehmet Paşa'nın imzası ile Almanya'ya gönderilen 1718 yılına ait mektup olarak gösterilmektedir (Hammer-Purgstall, 1827-1835: 246, 1835-1836: 172, 1835-1848: 12-13 akt. Beydilli, 1985: 1).

XVIII. yüzyılın ilk yarısında Prusya Avusturya'ya karşı giriştiği savaşta Osmanlı İmparatorluğu'nu da arkasına alabilmek için diplomatik girişimlerde bulunmuş, ancak Osmanlı Devleti savaşa yol açabilecek gelişmelerden uzak durabilmek için bu girişimlerde dostane ancak mesafeli bir tutum sergilemiş, ileride bir ittifakın olabileceği kapısını aralık bırakarak, nihayet 1761 yılında Prusya ile Dostluk ve Ticaret Anlaşması imzalamıştır (Beydilli, 2007: 357). 1790 yılında imzalanan Osmanlı-Prusya ittifak anlaşmasının ikinci maddesinde bu anlaşmanın hala yürürlükte olduğu teyit dilmiş (Beydilli, 1981: 69) ve anlaşma elli yıl daha uzatılmıştır (Moltke, 1969; akt. Albayrak, 1995: 2). XIX. yüzyılda ise 1840 yılından itibaren Prusya, Alman gümrük birliği Zollverein'e bağlı devletler adına Osmanlı ile ekonomik ilişkiler kurmuştur (Moltke, 1969 akt. Albayrak, 1995: 2). Ancak bu gelişmelere rağmen iki ülke XIX. yüzyılın sonlarına kadar ekonomik ilişkilerinde önemli bir ilerleme sağlayamamıştır (Moltke, 1969; akt. Albayrak, 1995: 2).

XIX. yüzyılın sonlarına doğru II. Wilhelm'in Yakın Doğu'ya yaptığı seyahatler Alman iş adamı ve tüccarlarına yeni ufuklar açmış ve bu seyahat iki ülke arasında büyük bir yakınlaşma sağlamıştır. Bu seyahatler neticesinde Almanya firmalarına bazı imtiyazlar verilmiştir. Verilen başlıca imtiyazlar arasında Anadolu Demiryolu Kumpanyası'na Haydarpaşa İstasyonu inşa imtiyazı, Haydarpaşa-Sirkeci hattında feribot işletme imtiyazı ve telgraf hattı döşeme imtiyazları sayılabilir. Bu imtiyazların arasında en önemlisi ise 5 Mart 1903'te, her iki ülke açısından hem siyasi hem de iktisadi kazanımlar elde etmek amacıyla, Deutsche Bank'a verilen Bağdat Demiryolu inşa ve işletme imtiyazıdır. Bu imtiyaz ile Almanya'nın Osmanlı İmparatorluğu'ndaki iktisadi nüfuzu en yüksek noktasına ulaşmıştır (Önsoy, 1982: 43).

1900 ile 1911 yılları arasında Osmanlı-Almanya ticaretinde önemli bir artış yaşanmıştır (bknz. Tablo 2). Ancak Osmanlı Devleti ve Almanya arasındaki ticari ilişkilerdeki bu gelişme, I. Dünya Savaşı'nın patlak vermesiyle sekteye uğramıştır. Savaş sonrası döneme bakıldığında ise her iki ülkede imparatorluklar yıkılmış yerine cumhuriyet rejimleri kurulmuş ve yeniden inşa sürecinde iki ülke ilişkileri alt düzeylere inmiştir. Türkiye Cumhuriyeti kurulduktan kısa süre

sonra Almanya ile diplomatik ilişkileri yeniden kurmak için harekete geçmiştir (Özgüldür, 1993: 34-35).

Çalışmada ilk olarak Türkiye Cumhuriyeti'nin 1923-1939 yılları arasındaki dış ticareti hakkında kısa bilgiler verilmektedir. İkinci kısmında ise Birinci Dünya Savaşı neticesinde sekteye uğrayan Türk-Alman ticari ilişkilerinin ilgili dönemde nasıl seyrettiği Türkiye Cumhuriyeti Cumhurbaşkanlığı Devlet Arşivleri Başkanlığı Cumhuriyet Arşivi ile Dışişleri Bakanlığı Türk Diplomatik Arşivi'nden elde edilen belgeler ve ilgili literatür ışığında incelenmiştir. Bu bölüm 1923-1929 yıllarını ve 1929-1939 yıllarını kapsayan iki alt bölümde incelenmiş olup, ikinci bölümde Türkiye-Almanya Ticareti *1929 Büyük Buhranı, Kliring (Clearing) Anlaşmaları, Berlin Türk Ticaret Odasının Katkıları ve 1936 Yılından İkinci Dünya Savaşı'na* başlıkları kapsamında değerlendirilmiştir.

## 2. 1923-1939 Yılları Arasında Türkiye'nin Dış Ticareti

Cumhuriyetin ilk yılları iktisadi açıdan Milli İktisat görüşünün hâkim olduğu II. Meşrutiyet sonrası dönemle benzerlikler taşımaktadır. Cumhuriyet'in ilanından önceki dönemde hâkim olan Milli İktisat görüşünün ve Milli Burjuvazi oluşturma fikrinin bu yıllarda da etkili olduğu, ancak Lozan Antlaşması'nın maddeleri ile hareket alanı daralan devletin Milli İktisadın korumacı ve sanayileşmeye olan eğilimlerini gerçekleştirmekte zorlandığı görülmektedir (Boratav, 2011: 40). Lozan Barış Konferansı'nda kapitülasyonların kaldırılması, yabancılara verilen ayrıcalıklar, Osmanlı borçları, nüfus mübadelesi, savaş tazminatları, Musul sorunu ve gümrüklerle ilgili düzenlemeler üzerinde durulan başlıca konulardır (Kepenek, 2014: 33). Lozan Antlaşması'na ek olarak imzalanan Ticaret Sözleşmesi ithalat ve ihracat yasaklarının birçoğunun kaldırılmasına, yeni yasaklamaların koyulmasının engellenmesine ve gümrük tarifelerinde 5 yıl boyunca, 1929 yılına kadar, hiçbir değişiklik yapılmadan Osmanlı Devleti'nin 1916 yılı tarifesine göre uygulanmasına neden olmuştur. Bu durum Türkiye'nin gümrük gelirlerini olumsuz etkilediği gibi yerli sanayinin gelişimini koruma altına alacak dış ticaret politikalarının uygulanmasını da engellemiştir (Boratav, 2011: 44-45). Ayrıca Türkiye uzun süren savaşlar nedeniyle ağır sanayi üretimine ağırlık verememiş, bu durum Türkiye'yi hammadde ihraç eden ve ağır sanayi ürünleri ithal eden bir ekonomiye dönüştürmüştür (Yıldız, 2018: 46). Ek olarak Lozan Antlaşması'nda yer alan Osmanlı Devlet Borçları, kapitülasyonlar, yabancılardan vergi alınması, yabancılara tanınan kamu hizmeti imtiyazları gibi ekonomik hükümler Türkiye'nin dış ticaret politikalarını olumsuz etkilemiştir.

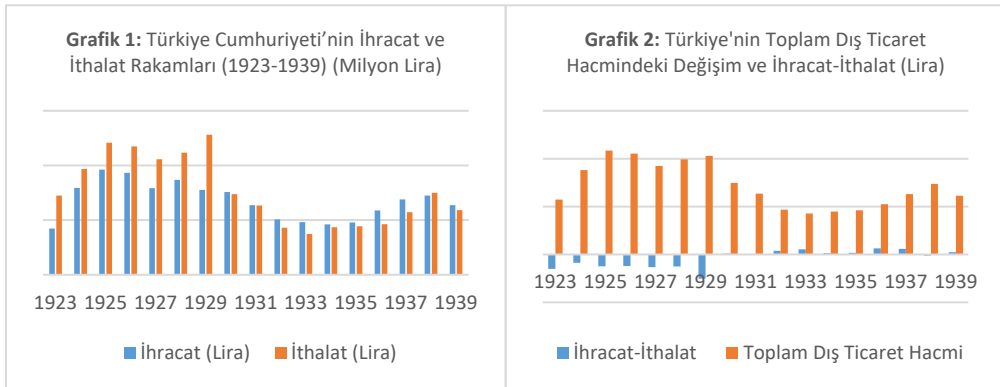
1929 yılında Lozan Antlaşması'nın bağlayıcılığı henüz son bulmuşken bu kez de tüm dünya da büyük sarsıntı yaratan Büyük Ekonomik Buhran patlak vermiştir. Yaşanan kriz nedeniyle uluslararası ticarete yaşanan daralma Türkiye'de sıkıntılı bir süreci başlatmıştır. Lozan Antlaşması'na göre Türkiye'nin gümrük tarifelerinde düzenleme yapma yetkisinin engellendiği 5 senelik sürenin sonu Büyük Ekonomik Buhranın yaşandığı 1929 yılına denk gelmişti. Böylece krizden etkilenen diğer birçok ülke gibi Türkiye de gümrük tarifesini ayarlayarak hazine gelirlerini artırmaya yönelmiştir (Kayra, 2013: 126).

Türkiye'nin 1923 ve 1939 yılları arasında dış ticaretini gösteren rakamlar Tablo 2'de ve Türkiye'nin ithalat ve ihracatındaki değişim ise Grafik 1'de sunulmaktadır. Böylece 1923-1939 arası dış ticaretteki değişimler daha net bir şekilde izlenebilmektedir.

Tablo 1: Türkiye Cumhuriyeti'nin İhracat ve İthalat Rakamları (1923-1939)

Yıl	İhracat (Lira)	İthalat (Lira)	İhracat-İthalat (Lira)	İhracatın İthalatı Karşılama Oranı %
1923	84.651.190	144.788.671	-60.137.481	58
1924	158.867.958	193.611.048	-34.743.090	82
1925	192.428.196	241.618.642	-49.190.446	80
1926	186.422.755	234.699.735	-48.276.980	79
1927	158.420.998	211.398.184	-52.977.186	75
1928	173.537.489	223.531.775	-49.994.286	78
1929	155.214.071	256.296.379	-101.082.308	61
1930	151.454.371	147.550.516	3.903.855	103
1931	127.274.807	126.659.893	614.914	100
1932	101.301.355	85.983.723	15.317.632	118
1933	96.200.000	74.700.000	21.500.000	129
1934	92.100.000	86.800.000	5.300.000	106
1935	95.861.137	88.823.480	7.037.657	108
1936	117.733.153	92.531.464	25.201.689	127
1937	137.984.000	114.379.000	23.605.000	121
1938	144.946.000	149.837.000	-4.891.000	97
1939	127.389.000	118.249.000	9.140.000	108

Kaynak: BCA, 30-10-0-0/160-126-17; 30-10-0-0/162-133-6; 30-10-0-0/24-137-13; 30-10-0-0/24-139-1; 30-10-0-0/24-139-5.



Tablo 1, Grafik 1 ve Grafik 2 incelendiğinde ihracat ve ithalat dengesinin 1930 yılına kadar açık verdiği; özellikle Büyük Buhranın yaşandığı 1929 yılında Türkiye dış ticaretinin olumsuz etkilendiği, dış ticaret açığının ihracat gelirlerindeki düşüş ve ithalattaki artışın etkisi ile neredeyse iki katına çıktığı görülmektedir. İhracatın %80'inden fazlasını tarımsal ürünlerin oluşturduğu bu dönemde, krizin etkisiyle düşen dünya tarım fiyatlarının ve ihracatın ağırlıklı olarak yapıldığı Batı ülkelerindeki konjonktürel şiddetli talep düşüşleri ihracat rakamlarına olumsuz yansımıştır (Kazgan, 2012: 35). Başlıca tarımsal ihracat kalemlerinin fiyatlarındaki düşüşün yanında 1927 ve 1929 yıllarında meydana gelen yetersiz hasat Türkiye'nin bu yıllarda

ciddi şoklar yaşamasına neden olmuştur (TDA, 501-31800-125576-21). İhracatın ana kalemini oluşturan tarımsal ürün hasadında yaşanan azalma 1929 yılındaki ithalat artışında rol oynayan etmenlerden bir tanesi olabilir. Ancak sonraki dönemde ithalat rakamları hızla düşme eğilimine girmiştir. Bu düşüşte 1930'lu yıllarda Türkiye ekonomisini koruma altına almak amacıyla uygulanmasına karar verilen 1873 sayılı Ticaret Mukavelesi ve Modus Vivendi Akdetmeyen Devletler Ülkesinden Türkiye'ye Yapılacak İthalata Memnuiyetler veya Tahdit veyahut Takyitler Tatbikine Dair Kanun (T.C. Resmî Gazete, 1931: 692), kontenjan uygulaması ve hepsinin asıl çerçevesini çizen ithal ikameci sanayi politikasının etkisi olduğu söylenebilir. İhracattaki olumsuz seyir ise 1935 yılına kadar devam etmiş, bu süreçte krizden etkilenen birçok ülke gibi Türkiye de yeni ticaret anlaşmaları, kliring sözleşmeleri ve kontenjan usulüne başvurarak dış ticaretteki olumsuz seyri bertaraf etmeye çalışmıştır.

Her ne kadar dış ticaret hacmi kriz öncesindeki rakamlara ulaşmasa da, dış ticaret dengesinin 1938 yılı haricinde 30'lu yıllar boyunca artı verdiği görülmektedir. 1938 yılı ile ilgili olarak New York Times gazetesinde Türkiye'nin iktisadi ve mali vaziyeti hakkında yayınlanan bir makalede birkaç seneden beri devletin bir tasarruf siyaseti izlediği, bütçe sıkıntısı nedeniyle varidat temini için memur maaşlarını düşürdüğü, diğer yandan vergileri arttırdığı, ayrıca gümrük vergilerini iki, üç ve nihayet dört katına kadar çıkardığı, ihracatı telafi için ithalat sınırlandırmasına rağmen mali durumun kötüleştiği ve Türkiye'nin bunalımda olduğunu yazmıştır (BCA, 30-10-0-0/83-550-25, Dosya Ek:85). Ancak buna rağmen ticaret rakamlarına bakıldığında toplam dış ticaret hacminin 1934 yılından 1938 yılına kadar sürekli artış gösterdiği gözlenmektedir. Ayrıca 1938 yılında her ne kadar dış ticaret dengesi açık vermiş olsa da toplam ihracat 1930 yılından sonraki en yüksek seviyesine ulaşmıştır. II. Dünya Savaşı'nın patlak verdiği 1939 yılında Türkiye'nin toplam ithalat ve ihracat rakamlarının gerilediği görülmektedir.

İstatistik Umum Müdürü Celâl Aybar Başvekâlete "Aceledir." mührüyle gönderdiği 1938 senesinin dört aylık dış ticaret durumunu gösteren özetlerde, bu yılda gerçekleşen dış ticaret açığının sebebini açıklamaktadır. 1937 yılının aynı dört ayına ait ticaret rakamlarını da veren Aybar, ihracatın 7 milyon 800 bin liradan 9 milyon 400 bin liraya, ithalatın ise 8 milyon 300 bin liradan 14 milyon 565 bin liraya çıktığını belirterek gerçekleşen açığı şu şekilde açıklamaktadır (BCA, 30-10-0-0/24-139-1: 30):

*"... Bu açık, sureti umumiyede ihracatın az olmasından değil, bazı maddelere ait ithalâtın ziyadeleşmesinden ileri gelmektedir. ... İthalât fazlalığı maddeler ve memleketler itibariyle tetkik edildiği takdirde açığın Almanya ve Amerika'dan yaptığımız (yün mensucat, demir ve çelik, makine, kara nakliye vasıtaları ve makine yağları) ithalatının geçen yıla nazaran çok fazla olmasından ileri geldiği görülmektedir. Bu iki memlekette 1937 senesinin ilk dört ayında yaptığımız bu maddelere ait ithalât yekûnu 8 milyon lira kadarken bu sene 17 milyon 461 bin liraya baliğ olmuştur."*

1923 ve 1939 yılları arasındaki Türkiye dış ticaretinin seyrine kısaca değindikten sonra ticarete konu olan mallardan bahsedilecek olursa, 1920'li yıllarda Türkiye'nin ağırlıklı olarak tarımsal ürün ihraç eden ve sanayi ürünü ithal eden bir ülke olduğu görülmektedir. Dış ticaret kalemleri incelendiğinde 1930'lu yılların sonlarına doğru bu kalemlerde çok fazla bir değişiklik olmadığı söylenebilir. 1937 ve 1938 yıllarında başlıca ihraç edilen ürünler arasında tütün, tömbeki (nargile tütünü), fındık, kuru üzüm, ham pamuk, tiftik, adi yün, keçi kılı, ham deri, incir, canlı hayvan, krom cevheri, maden kömürü, nohut, çavdar, buğday, yumurta, palamut,

afyon, bağırsak, ceviz, arpa, kereste, zeytin yağı ve sair eşya (son kalem) sayılabilir (BCA, 30-10-0-0/24-139-1). Bu kalemlerin içinde getirisi her iki yıl için %26 pay ile en yüksek olan tütün ve tömbeki kalemidir. Tonaj olarak bakıldığında ise canlı hayvan ve maden kömürü en üst sırada yer almaktadır. Ancak bu ürünlerin ederi tütün ürünleri kadar olmadığından iki kalemin toplam getirisinin payı sadece %3,3 civarındadır. Genel olarak ihracat kalemlerine bakıldığında Türkiye'nin bu yıllarda hala zirai ürünler ihraç eden bir ekonomi olma özelliğini devam ettirdiği görülmektedir.

1937 ve 1938 yıllarında başlıca ithal edilen ürünler arasında yün, kıl ve iplikleri, yün mensucatı/dokumaları, kahve, matbaa kâğıdı, pamuk ipliği, pamuk mensucatı, nakil vasıtaları, tekerlek lastiği, demir, çelik ve mamulâtı, makineler, kara nakliye vesaiti, benzin, petrol, maden yağları ve sair eşya sayılabilir (BCA, 30-10-0-0/24-139-1). En çok giderin görüldüğü kalem 1937'de %31,8 ve 1938'de %34,5 ile sair eşya kalemidir. Ancak bu kalemin içeriğine ilgili belgede yer verilmemiştir. Bu kalemi "demir, çelik ve mamulâtı" kalemi ile "pamuk ve makineler kalemleri" takip etmektedir. Genel olarak ithalat kalemleri incelendiğinde ise ithalatın büyük bir kısmını sanayi ürünlerinin oluşturduğu söylenebilir.

### 3. 1923-1929 Yılları Arasında Türkiye-Almanya Ticareti

Ernst Jackh'in 1913 yılında yayınlanan *Deutschland im Orient Nach dem Balkankrieg (Balkan Savaşından Sonra Doğuda Almanya)* adlı kitabında, Osmanlı Devleti'nin 1887 yılında ticaret yaptığı devletlerin ticarete katılım yüzdeleri; İngiltere %61, Fransa %18, Avusturya %12, Almanya %6 ve İtalya %3 olarak verilmiştir. 1910 yılına ait oranlar ise İngiltere %35, Fransa %11, Avusturya %21, Almanya %21 ve İtalya %12 şeklinde ifade edilmektedir. Jackh, 1887 yılından 1910 yılına Almanya'nın Türkiye ticaretindeki payının artışını Leopold von Ranke'nin şu sözleriyle açıklamaktadır: "Alman ulusal ekonomisinin geleceği, Konstantinopolis'in kaderiyle yakından bağlantılıdır" (Jackh: 1913: 15). Jackh, her ne kadar bu cümlenin arkasındaki siyasal ve iktisadi sebepleri ayrıntılı olarak açıklamasa da, Ranke'nin genel olarak Osmanlı Devleti'nin Alman ekonomisinin gelişmesindeki önemine atıfta bulunduğu aşikardır. Bu husus, II. Wilhelm döneminde Osmanlı Devleti'ne karşı izlenen yakınlaşma politikaları ve bu politikaların arkasında yatan sebeplerde aranabilir.

XX. yüzyılın başlarında Türk-Alman ticaretine ilişkin rakamlar veren Edward Mead Earle'e göre, bu dönemde Osmanlı İmparatorluğu'nda Alman ticaretinin gelişmesinin sebepleri arasında Almanya'nın Yakın Doğu'ya giderek artan finansal ilgisi ve Alman bankalarının ihracatı arttırmak ve desteklemek için oluşturmuş oldukları politikalar bulunmaktaydı. Bu politikaların temelinde ise II. Wilhelm'in sömürgecilik yarışında İngiltere ve Fransa gibi devletlerin gerisinde kalan Almanya'ya Yakın Doğu'da siyasal ve ekonomik etki alanları oluşturma çabaları olduğu düşünülmektedir. Bu noktada hem Ranke'nin ifadesinin hem de Osmanlı-Almanya ticari ilişkilerinin XX. yüzyılın ilk yıllarında kazandığı ivmenin nedeni olarak II. Wilhelm'in Osmanlı Devleti'ne karşı izlediği yakınlaşma politikaları gösterilebilir.

Her ne kadar Almanya ile Osmanlı Devleti'nin ticaretinden Almanya'nın Türkiye'ye olan ekonomik ilgisinin artmış olduğu ve bunun ticaret rakamlarına yansımış olduğu izlense de, 1910 yılına gelindiğinde hala toplam ithalat ve ihracat rakamları Osmanlı İmparatorluğu'nun İngiltere ile olan ticaretinin gerisinde kalmıştır. Ancak oransal artış olarak bakılırsa 10 yıllık süreçte Fransa toplam ithalat ve ihracatta %17, İngiltere %25, Avusturya-Macaristan %81'lik bir artış yakalarken Almanya ile Osmanlı İmparatorluğu'nun dış ticareti İtalya'nın yaklaşık %6 gerisinde kalarak %166 artmıştır (Earle, 1924: 104-106).



Tablo 2: 1900-1911 Yılları Arasında Türkiye'nin İthalat ve İhracat Rakamları (Mark)

İHRACAT (Mark)					
Yıllar/Ülkeler	Almanya	İngiltere	Fransa	İtalya	Avusturya-Macaristan
1900	30.400.000	118.760.000	86.220.000	22.520.000	35.220.000
1901	30.000.000	122.000.000	-	26.120.000	31.540.000
1902	36.500.000	130.520.000	83.040.000	28.980.000	35.580.000
1903	37.700.000	127.400.000	81.200.000	38.120.000	39.900.000
1904	43.500.000	122.760.000	73.120.000	31.300.000	39.120.000
1905	51.600.000	118.960.000	80.780.000	42.240.000	37.640.000
1906	55.000.000	129.440.000	91.600.000	45.100.000	39.300.000
1907	55.100.000	136.600.000	95.320.000	50.480.000	34.640.000
1908	47.600.000	109.220.000	70.760.000	44.580.000	34.360.000
1909	57.300.000	109.320.000	79.000.000	59.080.000	36.600.000
1910	67.400.000	100.660.000	77.000.000	48.000.000	43.340.000
1911	70.100.000	-	-	-	-
İTHALAT (Mark)					
Yıllar/Ülkeler	Almanya	İngiltere	Fransa	İtalya	Avusturya-Macaristan
1900	34.400.000	102.920.000	29.800.000	29.720.000	53.440.000
1901	37.500.000	128.220.000	37.880.000	43.800.000	57.100.000
1902	43.400.000	123.980.000	37.200.000	40.400.000	61.380.000
1903	50.200.000	114.020.000	36.640.000	45.360.000	65.120.000
1904	75.300.000	151.960.000	40.880.000	53.280.000	77.600.000
1905	71.000.000	139.300.000	42.420.000	57.200.000	76.660.000
1906	68.200.000	167.040.000	47.300.000	70.900.000	92.620.000
1907	81.500.000	147.380.000	46.380.000	63.040.000	89.920.000
1908	64.000.000	145.260.000	51.600.000	58.700.000	69.240.000
1909	78.900.000	156.280.000	54.600.000	67.740.000	77.040.000
1910	104.900.000	177.160.000	58.400.000	94.000.000	107.300.000
1911	112.800.000	-	-	-	-

Kaynak: Earle, 1924: 104-105.

Tablo 2 incelendiğinde 1900-1911 yılları arasında Almanya'nın Türkiye ticaretindeki payı oldukça artmıştır. İlgili tarih aralığında Almanya'ya olan ihracatın yaklaşık olarak iki katına, ithalatın ise üç katına çıktığı görülmektedir. İhracat ve ithalat miktarı açısından bakıldığında Almanya ticareti İngiltere'nin gerisinde olsa da artış oranı açısından bakıldığında Almanya ile yapılan ticarete İngiltere'den çok daha yüksek artışların olduğu açıkça görülmektedir.

Ancak I. Dünya Savaşının başlamasından önce dünya çapında yaşanan politik gerilim ve savaşın başlaması ticari alanın sekteye uğramasına neden olmuştur. Nitekim, henüz savaşın başlamadığı ancak siyasi gerilimin tırmandığı 1913 yılında Almanya ile yapılan ithalat ve ihracat rakamlarında gerileme görülmektedir (Önsoy, 1982: 113). I. Dünya Savaşı'ndan yenilgi ile çıkan iki müttefikin ilişkileri neredeyse kopma noktasına gelmiştir. Lozan Antlaşması'nın TBMM tarafından onaylanmasıyla, savaş sonrası Türkiye ve Almanya arasında diplomatik ilişkilerin kurulmasını engelleyen devletler hukukuna ilişkin hükümlerin ortadan kalkması ve Versay Antlaşması'nın geçerliliğinin de Almanya ve galip devletlerce tartışılması, iki devletin ivedilikle dostluk anlaşması müzakerelerine başlamasına ve bu müzakereler neticesinde 3 Mart 1924 tarihinde *Türkiye ile Almanya Arasında Mün'akit Muhadenet Muahedenamesi*'nin imzalanmasına sebep olmuştur (Koçak, 1991: 6-9). Bu antlaşma gereğince Türkiye ve

Almanya’da karşılıklı olarak büyükelçiliklerin açılması ve gerekli personelin tayin edilmesi söz konusu olmuş, böylece 1918 yılından itibaren iki ülke arasında sekteye uğramış siyasal ve diplomatik ilişkiler yeniden kurulmuştur (Koçak, 1991: 9).

Türkiye, söz konusu antlaşma sonrasında Almanya ile diplomatik ilişkilerine paralel olarak ticari ilişkileri de geliştirmek için çalışmalara başlamıştır. 31 Temmuz 1925 yılına ait bir kararnameden Almanya ve İsviçre başta olmak üzere Lozan Antlaşması’nın birinci faslından istifade etmeyen devletlerin dış ticaretteki tutumlarını Türkiye lehine çevirmek ve bu ülkelerle önemli ticaret antlaşmaları yapabilmek için adımlar atıldığı anlaşılmaktadır. Belgede bahsi geçen ülkelerin dış ticaretteki tutumlarının Türkiye’nin dış ticaretinin aleyhine sonuçlar doğurduğu, bu nedenle Türkiye’nin bu devletleri ticaret antlaşmalarına ikna edebilmek için nasıl bir yol izleyeceği aktarılmaktadır (BCA, 30-10-0-0/14-33-7):

*“... ihracatımıza karşı en fazla nâil-i müsaade millet muamelesi yapmayacak devletler müvaredâtına 10 Mart 332 tarihli Gümrük Tarife-i Umûmiyyesi Kânununun altınca maddesine tevfikân yüzde-yüz fazlasıyla gümrük resmi tatbiki ve derhal mukavelât akdine tevessül edilmesi ve şerâit-i müsaade-i ibtidâiyyeyi kabul edecek devletlerin de Amerika müvâderatı hakkında müttahaz 19.2.341 tarihli karar mucibince muvakkat müddetler için Lozan taifesinden istifadelerinin temini münasib mütalaa edilmiş olduğundan ...”*

Kararnamenin yukarıda alıntılanan maddesine göre Türkiye, Lozan Antlaşması dışında kalan devletlere, eğer Türkiye’ye ihracatına en fazla müsaade edilen ülke muamelesi yapmazlarsa, yüzde yüz fazlasıyla gümrük vergisi uygulayacak, bu şartı kabul eden ülkelerin ise Amerika’nın da istifade ettiği gibi Lozan tarifesinden faydalanmalarına müsaade edecekti. Bu yolla Türkiye’nin izlediği taktiğin işe yaradığı ve nihayetinde Almanya ile bir anlaşmaya varmış olduğu elde edilen başka belgeler üzerinden izlenebilmektedir. Cumhuriyetin ilk yıllarına ait belgelerde Türkiye’nin Almanya ile dostluğunu geliştirmek ve ticari işbirliğini ilerletmek için Almanya ile Türkiye’nin sürekli müzakerelerde bulunduğu açıkça görülmektedir (BCA, 30-18-1-1/9-15-2; 9-18-20; 14-33-6; 14-42-10; 14-33-7; 15-60-2). Ayrıca 1925 yılına ait bir belgede Almanya ile yapılmış olan “*Modüs Vivendi*” yani geçici anlaşma akdinin ihlalinden ve bu nedenle de yok sayılmasından bahsedilmektedir (BCA, 30-18-1-1/16-70-18). 1926 yılına ait iki belgeden ise henüz ticaret anlaşmasının imzalanmadığı, esas ticaret anlaşmasının Türkiye Millet Meclisi’nce kabulüne kadar geçici ticaret anlaşmasının 6 ay daha uzatılması kararı alındığı okunmaktadır (BCA, 30-18-1-1/22-78-4; 30-18-1-1/19-43-2). Bu geçici anlaşmalar ile Almanya ve Türkiye arasında esas ticaret anlaşması imzalanana kadar ticari ilişkilerin düzene sokulmaya çalışıldığı anlaşılmaktadır. Nihayet Başvekâlet Kalem-i Mahsus Müdüriyyetine ait belgede süregelen müzakereler neticesinde anlaşmanın İcra Vekilleri Heyeti tarafından 5 Kanunievvel 1926 tarihli toplantısında kabul edildiği görülmektedir (BCA, 30-18-1-1/22-74-2):

*“Türkiye ve Almanya hükümetleri arasında cereyan iden müzâkerat neticesinde tesbit idilen ve Hey’et-i Murahhasaca “Sahh” çekilen Ticaret ve İkâmet Mu’ahedenâmelerinin imzası, Hariciyye Vekâletinin 5 Kânûnuevvel 926 tarih ve 75740/562 Numrolu tezkiresiyle vuku’ bulan teklifi üzerine İcra Vekilleri Hey’etinin 5 Kânûnuevvel 926 tarihli ictimâ’ında tesvib ve kabul olunmuşdur. 5 Kânûnuevvel 926”*

Belgenin altında sırasıyla Reis-i Cumhur Gazi M. Kemal, Başvekîl İsmet, Adliye Vek. M. Esat, M. Milliye Vek. Recep, Bahriye Vek. İhsan imzada bulunmadı, Dahiliye Vek. M. Cemil, Hariciye

Vek. Dr. T. Rüştü beyefendi hasta, Maliye Vekili M. Abdülhalik, Maarif Vekili M. Necati, Nafia Vekili Bahiç, Ziraat Vek. M. Sabri, Ticaret Vek. M. Rahmi beyefendi imzada bulunmadı, Sıh. ve Mua. İct. Vek. Dr. Refik beyefendi imzada bulunmadı şeklinde tüm vekillerin isimleri sıralanmıştır. Nihayetinde anlaşma 12 Ocak 1927 tarihinde imzalanmıştır (Koçak, 1991: 85).

Bu anlaşmaların müzakerelerinin yapıldığı ve imzalandığı 1924 ve 1927 yılları arasında Türkiye ve Almanya arasındaki ticaretin hareketlendiği görülmektedir. Bu durum Tablo 3 üzerinden incelenebilir:

Tablo 3: Türkiye'nin 1923-1939 Yılları Arasında Almanya ile Olan Ticareti

Yıl	İhracat	İthalat	İhracat-İthalat	Toplam İhracat İçinde Almanya'nın Payı %	Toplam İthalat İçinde Almanya'nın Payı %
1923	7.626.000	9.222.000	-1.596.000	9,0	6,4
1924	20.551.000	19.114.000	1.437.000	12,9	9,9
1925	27.701.000	27.452.000	249.000	14,4	11,4
1926	25.574.000	32.341.000	-6.767.000	13,7	13,8
1927	14.708.000	30.005.000	-15.297.000	9,3	14,2
1928	22.151.000	31.688.000	-9.537.000	12,8	14,2
1929	20.582.000	39.172.000	-18.590.000	13,3	15,3
1930	19.858.000	27.380.000	-7.522.000	13,1	18,6
1931	13.649.000	27.049.000	-13.400.000	10,7	21,4
1932	13.722.000	19.982.000	-6.260.000	13,5	23,2
1933*	18.266.640	19.093.320	-826.680	19,0	25,6
1934*	34.350.120	29.297.520	5.052.600	37,3	33,8
1935*	39.279.240	35.578.620	3.700.620	41,0	40,1
1936	60.042.000	41.742.000	18.300.000	51,0	45,1
1937	50.412.000	48.132.000	2.280.000	36,5	42,1
1938	62.210.000	70.411.000	-8.201.000	42,9	47,0
1939	47.504.000	60.142.000	-12.638.000	37,3	50,9

Kaynak: BCA, 30-10-0-0/160-126-117; 30-10-0-0/24-139-1; 30-10-0-0/24-139-5.

\*1933, 1934 ve 1935 yılına ait rakamlar için (Türkiye İstatistik Kurumu, 2014: 437, 453 ve 461) kullanılmıştır. Dolar cinsinden verilen rakamlar yine aynı eserdeki dolar kuru üzerinden Türk lirasına çevrilmiştir. TÜİK'in diğer yıllar için verdiği rakamlar ile arşivden elde edilen rakamlar arasında çok büyük olmasa da farklılıklar görülmüştür. Ancak Almanya'nın ithalat ve ihracatımızdaki payı birkaç yıldaki küçük farklılıklar dışında hemen hemen aynıdır.

Tablo 3'te diplomatik ve ekonomik olarak Almanya ile yapılan müzakerelerin başladığı 1924 yılından itibaren Almanya ile ticaretin artmış olduğu görülmektedir. Ancak 1927 yılına gelindiğinde Türkiye'nin Almanya'ya olan ihracatının ciddi şekilde düşmüş olduğu dikkat çekmektedir. Berlin Büyükelçiliği'nden gönderilen ve Hariciye Nezareti tarafından İktisat Vekaletine sunulan, 30 Kasım 1932 yılında Alman gazetesi Hamburgische Börsen Halle gazetesinde 1924'ten sonra iki ülke arasındaki ticari ilişkiler üzerine yayınlanmış bir makalede Türkiye'nin bu dönemde yaşadığı ekonomik sıkıntılardan ve bu sıkıntıların dış ticaret üzerindeki etkisinden şu şekilde bahsedilmektedir (TDA, 501-31800-125576-21):

*"Son yıllarda Türkiye ciddi şoklar yaşadı; bir yanda başlıca tarımsal ihracat kalemlerinin fiyatlarındaki düşüş, diğer yanda 1927 ve 1929 yıllarındaki yetersiz hasatlar, tahıl ithalatının yapılmasına neden oldu. Haziran 1928'deki borç*

*antlaşmasında üstlenilen ödeme yükümlülüklerinin yerine getirilmesi gerektiğinden, ticaret dengesi giderek daha pasif hale geldi ve para birimi endişe verici bir şekilde sallandı. Zorunlu döviz kontrolü getirilerek daha fazla paranın değerinin düşüşüne engel olmak için karşı bir girişimde bulunuldu ve aynı zamanda yabancı bir bankadan Türk lirası döviz kurunun savunulduğu bir kredi alındı. Ayrıca, devlet maliyesini dengelemek ve yabancı mal akışını engellemek için önemli ölçüde daha yüksek oranlı yeni bir gümrük tarifi oluşturuldu.”*

Makalede belirtildiği üzere Türkiye'nin bu dönemde yaşamış olduğu iktisadi problemler hem ülke ekonomisini hem de Almanya ile olan dış ticaretini olumsuz etkilemiştir. İthalat rakamlarında çok büyük bir sıkıntı görünmese de ihracat rakamlarının 1930 ve 1931 yıllarında düşmeye devam ettiği görülmektedir. Bunun en önemli nedenlerinden bir tanesi ise ihracatın büyük bir kısmının dayandığı dünya tarımsal ürün fiyatlarının 1929 Krizi nedeniyle düşmesidir.

#### **4. 1929-1939 Yılları Arasında Türkiye-Almanya Ticareti**

##### **4.1. 1929 Büyük Buhranı**

Dünya ekonomisinde 1929 yılında görülen global Büyük Buhrandan birçok dünya ülkesi gibi derinden etkilenen Türkiye'nin krizden nasıl etkilendiği ve çıkış yollarının neler olabileceğine dair 1931 yılında Âlî İktisat Meclisi tarafından bir "Buhran Raporu" hazırlanmıştır (BCA, 30-10-0-0/26-152-10). Ziraata dayalı bir üretim yapısının getirmiş olduğu bir sonuç olarak raporda daha çok zirai üretimdeki durum üzerinde durulmaktadır. O dönemde Türkiye'nin ihracatının %90-95'ini zirai mahsullerin oluşturması nedeniyle, tarım alanında yaşanan sıkıntılar aslında memleketin genel iktisadi durumunu etkilemektedir (BCA, 30-10-0-0/26-152-10:7). Ziraatta hissedilen buhranın sebepleri ise raporda izah edilmektedir. Raporda ilk sebep olarak dünya fiyat buhranının etkisiyle ortaya çıkan uluslararası pazar ilişkileri ile alakalı yaşanan sıkıntılar gösterilmektedir. Bunlara örnek olarak Fransa'nın yumurta, Almanya'nın ve İngiltere'nin halı, Amerika'nın incir ithalatına getirmiş olduğu şartların ihracatı olumsuz etkilemesi gösterilebilir (BCA, 30-10-0-0/26-152-10:7). İkinci neden olarak milli iktisat yapısı ile ilgili sebeplerden söz edilmektedir. Ülke nüfusunun %75'inden fazlasının çiftçi olması nedeniyle, Türkiye'nin dünya buhranının ziraat alanında sebep olduğu olumsuz havadan etkilenmemesinin mümkün olamayacağı dile getirilmiştir. Bu olumsuz etkiler raporda buğday, arpa, pamuk, tütün, kuru meyve, afyon, tiftik, yapağı, zeytin yağı gibi ürünler üzerinden daha ayrıntılı biçimde tartışılmaktadır.

Raporda Türkiye'nin ekonomik bir buhrana sürüklenmesinin sebepleri kısaca şöyle zikredilmektedir (BCA, 30-10-0-0/26-152-10:1-4):

1. Son bir asırda evrensel ve uluslararası etkiler ve hukuki yaptırımlarla Türkiye'nin gelişme imkanları yok edilmiş; Türk ekonomisi, zamanla yarım bir üretim cihazı olmakla yetinmiştir. Türk ekonomisinin dünya ekonomisindeki değişimleri yeterince takip edememesi ve bu değişimlere intibak edememesi, ona yeni bir özellik kazandırmış ve Türkiye dünya ticaretinde sanayi ürünleri için bir dış pazar ve buna karşılık sanayi ülkelerine gıda ve hammadde yetiştiren bir ziraat ülkesi haline gelmiştir.

2. Pamuk, yapağı ve tiftik gibi ürünlerin fiyat dalgalanmalarında ekonomik buhranın yanı sıra malların nitelikleri ve uluslararası piyasaların şartlarına uygun olmaması da önemli ölçüde etkili olmuştur.

3. Teknik olarak gerilik, sermaye ve teşebbüs eksikliği, gerekli örgütlenmenin sağlanamamış olması gibi nedenler de Türkiye'nin iktisadi açıdan gelişimini engellemiş ve bu nedenler Türkiye'yi uluslararası iktisat dünyasının giderek şiddeti artan baskısına maruz bırakmıştır.

1927 yılından itibaren yaşanan şoklar, kriz ve yapısal sıkıntılar Türkiye ekonomisini olumsuz etkilemiş ve bu olumsuz ortam Almanya ile olan dış ticaret rakamlarına yansımıştır. Hamburgische Börsen Halle gazetesinde yayımlanan makalede tüm bu sıkıntılara rağmen Almanya'nın Türkiye ile ilişkilerine devam etmek istediği açıkça görülmektedir (TDA, 501-31800-125576-21). Makalede Batılı ülkelerin daha fazla kapanması nedeniyle Almanya'nın dikkatini Doğu ve Güneydoğu Avrupa ülkelerine çevirmesi gerektiği, yaşanan sermaye sıkıntısı ve eski düşman devletlerin diplomatik yollarla borç verme ve misilleme tehdidi nedeniyle, Almanya'nın onlarca yıldır dostluk ilişkilerinde bulunduğu ülkelere yönelmesine neden olduğu belirtilmektedir. Bu ülkelerin başında Almanya'ninkine benzer bir durumda bulunan ve ekonomik özerkliği Sevr Antlaşması ile ciddi şekilde kısıtlanmış olan Türkiye geliyordu. Makalede 1924 yılından itibaren istikrarlı bir biçimde artan Almanya-Türkiye ticaretine dikkat çekilerek; Türkiye'nin bir tarım devleti olarak şaşırtıcı olmayan bir şekilde hasatlarındaki iniş ve çıkışlardan kaynaklı dalgalanmalara rağmen Türkiye'nin ihracatında Almanya'nın payının yükseldiği ifade edilmektedir. Makaleden ve elde edilen belgelerden de anlaşılacağı üzere eski müttefik olan Türkiye Cumhuriyeti (kuruluşunun hemen akabinde) ve Almanya dostluk ve ticarî ilişkilerini geliştirmek için çaba sarf etmişlerdir.

Türk ve Alman yazarlar tarafından çıkarılan "Alman-Türk Sanayi ve Ticaret Kılavuzu" isimli eserin *Başlangıç* yazısında Almanya ve Türkiye dış ticaretinin hiç aksamadan devam etmesinin nedeni olarak her iki ülkenin birbirinin eksiklerini tamamlaması esasında aramak gerektiği ifade edilmektedir (Tantzen vd., 1935: III BCA, 490-1-0-0/1455-37-3). Burada birbirinin eksiklerini tamamlaması esası ile kastedilenin Türkiye'nin bir zirai ürün ve hammadde ihracatçısı ve Almanya'nın da sanayi ürünleri ihracatçısı olarak birbirlerini tamamladıkları olduğu düşünülmektedir.

1929 buhranının etkileri hala devam ederken Almanya ile Türkiye ticari ilişkilerini geliştirme yönündeki adımlar atmaya devam etmiştir. 27 Mayıs 1930 tarihinde Ankara'da bir "*Ticaret ve Seyrisefain Mukavelesi*" imzalanmıştır (TDA, 501-32087-126651-81). Bu anlaşmaya göre Almanya'ya ithal edilecek Türk ziraat ve zanaat ürünlerinden alınan gümrük resimleri, vergiler ve başka harçlar Almanya'nın herhangi üçüncü bir devletin eşyasından aldığı harçlardan daha yüksek olmayacaktı (Tantzen vd., 1935: 170 BCA, 490-1-0-0/1455 - 37 - 3). Bu anlaşma *en ziyâde mazhar-ı müsaâde* ilkesi ile Türkiye'yi Almanya nazarında en çok gözetilen ülke yapmıştır (Caucig, 1935: 7). Ayrıca bu ticari antlaşmaya müzeyyel diğer iki anlaşma ile birçok Türk malları için hususi gümrük tarifeleri ve muafiyetleri uygulanacaktı (Ayrıntılı listeler için bknz. Tantzen vd., 1935: 271-275 Kaynak: BCA, 490-1-0-0/1455-37-3).

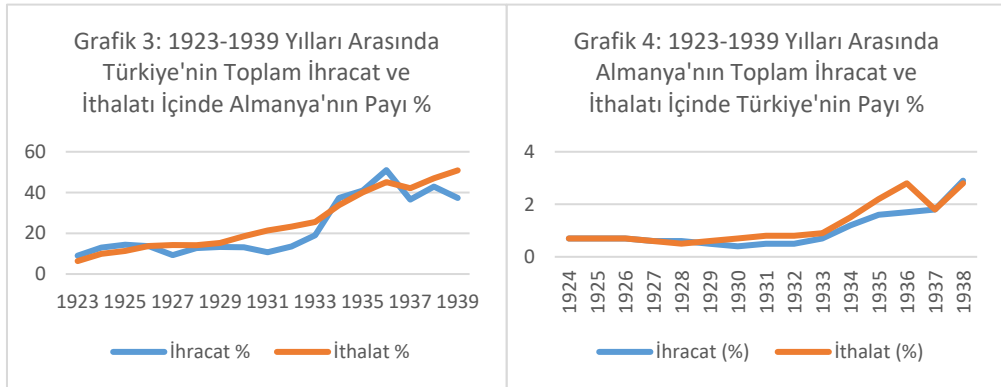
1923 ve 1939 yılları arasında Türk-Alman ticaretinin gelişimi Türkiye'nin ithalat ve ihracatı içindeki Almanya'nın yüzdelik payındaki değişim üzerinden incelenebilir. Tablo 3'te Almanya'nın Türkiye'nin ithalat ve ihracatındaki payının zaman zaman dalgalanmalar olsa da giderek arttığı görülmektedir. Özellikle 1934 yılından itibaren Almanya Türkiye'nin dış ticaretinin en önemli partneri olarak görülmektedir. Ancak Almanya'nın ticaretinde Türkiye'nin payının bu denli ciddi boyutlara ulaşmadığını ve hatta çok küçük bir kısmını oluşturduğunu belirtmek gerekir. Tablo 4'te Almanya'nın dış ticaretinde Türkiye'nin payı yüzde olarak verilmiştir.

Tablo 4: Almanya'nın Toplam İhracat ve İthalatında Türkiye'nin Payı (%)

Yıllar	Almanya'nın Toplam İhracatında Türkiye'nin Payı (%)	Almanya'nın Toplam İthalatında Türkiye'nin Payı (%)
1924	0,7	0,7
1925	0,7	0,7
1926	0,7	0,7
1927	0,6	0,6
1928	0,6	0,5
1929	0,5	0,6
1930	0,4	0,7
1931	0,5	0,8
1932	0,5	0,8
1933	0,7	0,9
1934	1,2	1,5
1935	1,6	2,2
1936	1,7	2,8
1937	1,8	1,8
1938	2,9	2,8

Kaynak: Koçak, 1991: 95, 244.

Her iki ülkenin birbirlerinin ticaretteki payını daha net görebilmek için Tablo 3 ve Tablo 4'teki rakamlar kullanılarak Grafik 3 ve Grafik 4 oluşturulmuştur.



Grafik 3 ve Grafik 4 incelendiğinde Türkiye'nin Almanya'nın toplam ticareti içindeki payı çok düşük düzeyde kalsa da iki ülke ticaretindeki gelişim ve dalgalanmaların paralelliği eş zamanlı olarak grafiklerde görülmektedir. Almanya'nın ticaretinde Türkiye'nin payının bu denli düşük olma nedeninin ortaya koyulabilmesi, Almanya'nın ithal ve ihraç kalemleri ile diğer ticaret partnerleri üzerinden bir değerlendirmeyi gerektirmektedir. Böyle bir değerlendirme için Alman arşiv belgelerinin de incelenmesi elzemdir. Ancak Türk arşiv belgelerine dayalı bu çalışmanın sınırlarını fazlasıyla genişleteceği için bu inceleme çalışma dışında bırakılmıştır.

Büyük Buhranın yaratmış olduğu dalgalanma iki ülke arasında yapılan anlaşmalar aracılığıyla giderilmiştir. Bu anlaşmalara örnek olarak buhran döneminde yapılan karşılıklı gümrük anlaşmaları gösterilebilir. Bu konuya Franz von Caucig yazmış olduğu "*Mevcut mukavelere göre Türkiye ile Almanya arasındaki ticari münasebat*" başlıklı makalesinde değinmiştir. İlgili makalede Türkiye'nin 1933 yılında ithal ürünlerine gümrük vergilerini arttırmasının iki ülke arasındaki ticari ilişkileri olumsuz etkilediği, ancak karşılıklı müzakereler

neticesinde gümrüklerin düşürülmüş olduğundan bahsedilmektedir. Ayrıca Caucig'e göre Hitler'in iktidara gelişinden sonra bazı ülkelerin Alman mallarını boykot etmeye başlaması, Türkiye ve Almanya'nın mevcut kuvvetli dostluk ilişkilerini gözler önüne sermiş ve iki ülke ticareti hiç olmadığı kadar artırmıştır. Caucig'in verdiği rakamlara göre 1933 yılından 1934 yılına gelindiğinde Almanya'nın Türkiye'den yaptığı ithalat 18.950.000 Türk lirasından 33.750.000 Türk lirasına çıkmış; Almanya'dan Türkiye'ye yapılan ihracat ise 18.150.000 Türk lirasından 25.450.000 Türk lirasına yükselmiştir (Caucig, 1935: 9-10). Özellikle iki ülkenin 10 Ağustos 1933 tarihinde Berlin'de imzaladığı ticaret sözleşmesi ve bu sözleşme ile beraber tatbik edilmek üzere Reichsbank ile akdedilen kliring uzlaşmasından (TDA, 501-32117-126783-34) sonra iki ülke ticaretindeki artış çok daha belirgin hale gelmiştir.

Türkiye ve Almanya ticari ilişkilerinde özel bir yeri ve ilgiyi hak eden kliring sözleşmeleri, 1933 yılından itibaren yaşanan bir takım siyasi gerilimlere rağmen, Türkiye'nin Almanya ile olan ticari ilişkilerinin hızla yukarı tırmanmasında oldukça etkili olmuş; bu dönemde Almanya'nın Türkiye dış ticareti içindeki payı oldukça artmıştır. Bu nedenle kısaca Türkiye-Almanya ticari ilişkileri çerçevesinde Kliring kavramı üzerinde durulmasında fayda görülmektedir.

#### 4.2. Kliring (Clearing) Anlaşmaları

Kliring, ticari işlem münasebetine giren iki ülkenin merkez bankalarında bir diğeri adına Kliring A hesapları açılarak, ticari alım-satım yapan kişi ve kurumların bu işlemlere ait ödemelerini kendi ülkelerinin merkez bankalarına yapması yahut malın değeri olan parayı kendi merkez bankalarından alarak, döviz ihracatına gerek kalmadan işlemlerini tamamlayabilme yöntemi olarak ifade edilebilir.

Franz von Caucig'in bahsi geçen makalesinde kliring anlaşmasının işleyişi ayrıntılı bir biçimde şöyle anlatılmaktadır (Causig, 1936: 8, BCA, 490-1-0-0/1455-37-3):

*“... İşbu mukavelename ile müvazeleneli ticaret ve tediye muamelelatı prensibi kabul edilmiştir; Emtia muamelelatı her iki tarafın devlet bankalarında karşılıklı olarak kayıt edilecektir. Bu esaslar üzerine bittabii iki memleketin emtia ve para mübadelesi birbirile sıkı sıkıya bağlanmış ve Clearing (Kliring) mukavelesi adeta tarafeyn münasebatının ilk âmili olmuştur. Bu Kliring mukavelenamesi ahkâmını bir taraftan Türkiye Cumhuriyeti Merkez Bankası, diğer taraftan da Almanya Devlet Bankası tatbik ve ifa etmektedir. Her iki banka karşılıklı olarak hesap açmışlardır ve emtia teslimatına ait fatora bedellerinin hepsi bu hesabı cari üzerinden yürümektedir. Bu suretle ticari muamele yapan ve mal satın alanların hiçbiri doğrudan doğruya satıcıya tediye yapamamakda, bunu buldukları memleketin devlet bankasına ödemekte ve satıcı da malının bedelini bulunduğu memleketin devlet bankasından almaktadır. Bu sayede her iki memleket için de döviz ihracatı mevzubahs olmamaktadır.”*

Krizin tüm dünyada getirmiş olduğu darlıklar ve dış ticarete yaşanan sıkıntılar ülkeleri yeni ticaret anlaşmaları ve usullerine yöneltmiştir. Türkiye bu dönemde kontenjan usulü ile kota uygulamasına geçmiş ve ilki Fransa ile olmak üzere 1932 yılında ikili kliring anlaşmaları imzalamaya başlamıştır (Kazgan, 2004: 65 Aktaran Sarıgüzel, 2021: 7068). Hükümet 29 Mayıs 1932 tarihinde 1993 sayılı Takas Komisyonu Teşkilî Hakkında Kanun çıkararak kliring politikası çerçevesinde İktisat Vekâletine bağlı bir takas komisyonu dahi oluşturmuştur (Sarıgüzel, 2021: 7068). Almanya ile 10 Ağustos 1933 yılında bir kliring itilafı yapıldığı belgelerden

anlaşılmaktadır (BCA, 30-18-1-2/41-92-14). Buna göre kontenjan tatbikatını kolaylaştırmak, gümrük varidatını arttırmak ve Türkiye'nin ihracatını artırmak amacıyla Almanya lehine bazı ilaveler yapıldığı ve oluşturulan yeni listede Amerika'yı yakından ilgilendiren bazı maddelerin hariç tutulduğu ve ileride de birçok maddenin hariç tutulacağı ve bunun nedeninin de Almanya ve Fransa listelerinde ileride yapılması muhtemel değişiklikler olduğu belirtilmektedir.

Ancak 1934 yılına ait bir başka belgede Türk tacirlerin Almanya'da döviz müsaadesi almakta birtakım sıkıntılar yaşadığından bahsedilmekte, yapılan kliring anlaşması çerçevesinde düzenlenen karşılıklı ticari mübadelelerin ödeme usulünün işleyişi açıklanmaktadır. Belgeye göre Türkiye'nin taahhütlerini harfi harfine yerine getirdiği ve Alman tüccarların hiçbir sıkıntı yaşamadan ödemelerini gerçekleştirebildiği bahsedilmektedir (TDA, 501-32138-127058-5):

*"... bu meyanda Alman malları bedellerinin Türkiye'de ödenmesinin döviz kontrolünün uzun ve sıkıcı formalité'lerine maruz tutulmaması ve bu bedellerin automatique bir tarzda Reichsbank'ın Cumhuriyet Merkez Bankası nezdindeki hesabına yatırılması sayesinde, herhangi bir Alman tacirine ait alacağın en ufak bir taahhura uğramaksızın ödenmesini temin edecek surette arızasız işlemektedir."*

Bu iki kaynaktan anlaşılacağı üzere yapılan kliring anlaşması çerçevesinde tacirler yaptıkları ticari mübadelelerin ödemelerini kendi ülkelerindeki merkez bankalarında diğer ülkenin merkez bankası adına açılmış hesaba yerli para cinsinden yapmakta ve böylece dövizle ödemeyi getirmiş olduğu zorluk ve gecikmelerden kurtularak iki ülke arasındaki ticaret (transit ticaret hariç) daha kolay hale gelmekteydi.

Kliring anlaşması çerçevesinde hangi ürünlerin ticarete konu olacağı ve ürünlerin kontenjanları belirlenmekteydi. Bu listelerin hazırlanmasının nedeni Franz von Causig'in makalesinde şu şekilde izah edilmektedir (Causig, 1936: 8-9, BCA, 490-1-0-0/1455-37-3):

*"Ticaret mukavelesi, iki tarafın da iştiralarını kabil olduğu kadar artırmaları esası üzerine kurulmuştur. Her hanki bir suretle satın alan memleketin menfaatleri lehine olmiyan emtiayı hariç bırakmaktadır. Bu son ahkam bilhassa Türkiye'nin evvelce Almanya'dan celp ettiği ve şimdi sanayileşmesinden dolayı idhalat memnuniyetine tabi olan birkaç mamul emtiaya taalluk etmektedir. Bunlar arasında bilhassa şeker, hakiki veya sun, i ipekle, trikotaj ve bunlara mümasil şeyler vardır. Bu sebeplerden dolayı Almanya'dan Türkiye'ye gönderilecek muhtelif emtia gruplarını listeler halinde tesbit etmek lüzumu hasil olmuş ve bu suretle bir (I inci liste) tesbit edilmiştir. Bu listede Almanya'dan serbest her hanki bir Kontinjen nizamnamesile tahdide tabi tutulmiyarak memlekere girebilecek olan eşya gösterilmiştir. (II inci listede) dekontinjene tabi olan ve mikdarları tesbit edilen emtia vardır."*

Metinde görüldüğü üzere Kliring anlaşması çerçevesinde ticareti yapılacak mallar serbest olan ve olmayan şeklinde iki listede belirtilerek şarta bağlanmıştır. Ayrıca metinde dikkati çeken bir husus, bu listelerin oluşturulmasında özellikle Türkiye'nin bu dönemde benimsediği ithal ikameci sanayileşme politikasının etkili olduğu anlaşılmaktadır. Yine metinde bu listelerin ilkinin sadece bir ay içinde hazırlanmak zorunda kalındığı ve 6 ayda bir listelerin yenileneceğinden bahsedilmektedir. Bunun nedenleri ise Almanya ile Türkiye arasındaki ticaretin hareketliliği ve Türkiye'nin sanayileşme planı nedeniyle ihtiyaçlarında meydana gelen



sürekli değişikliklerdi. Bu nedenle eski listeleri düzenlemek yerine yenilerinin hazırlanmasının daha kolay ve uygun olduğu makalede belirtilen hususlar arasındadır.

İki ülke bu dönemde ek (müzeyyel) ticaret ve kliring anlaşmaları imzalamaya devam etmiş, anlaşma ve kliring listelerine ek düzenleme ve sözleşmeler yapılarak iki ülkenin ticari ilişkileri sürekli güncellenmiştir. 15 Nisan 1935 tarihinde Berlin’de 1933 yılındaki anlaşmaya ek olarak bir kliring sözleşmesi daha imzalanmış (BCA, 30-18-1-2/54-32-20), üçüncü müzeyyel ticaret ve kliring anlaşması da 19 Mayıs 1936 tarihinde yapılmıştır (BCA, 30-18-1-2/69-90-5). Müzeyyel anlaşmalarla yeni sözleşmelerden ziyade kliring listelerine sonradan eklemeler ya da protokollerde ilave düzenlemeler yapılmaktaydı (BCA, 30-18-1-2/69-90-5). İlave düzenlemelere örnek verilecek olursa, *19 Mayıs 1936 tarihli Türkiye-Almanya Ticaret ve Kliring Anlaşmasına bağlı (I) numaralı serbest listeye (502) yalnız “Jeaner camı” (Jeaner Glass) ından mamul olup üzerinde bu markayı taşıyanlar kaydının ilavesi istenmiştir* (BCA, 30-18-1-2/69-90-9).

İncelenen belgelerde kliring hesaplarından sadece ticari ödemelerin değil ticari ödemeler dışında kalan birtakım ödemelerin de gerçekleştirildiği görülmektedir. 1933 Kliring anlaşmasına göre Alman Devlet Bankası Türk Merkez Bankası lehine açtığı (A) hesabının yanı sıra bir (B) hesabı daha açmış, bu hesabın(B) her gün (A) hesabına isabet eden hesapların yüzde otuzu kadarını Türkiye’nin Almanya’da serbest bir şekilde kullanılmasına tahsis etmişti (Causig, 1936: 8, BCA, 490-1-0-0/1455-37-3). Ticaret dışı ödeme ve işlemlerde Almanya’da gerekli ödemelerin yapılabilmesi için Kliring (B) hesabının kullanıldığı birçok örneğe belgelerde rastlanmıştır. Örneğin 1935 yılına ait bir belgede Afyonkarahisar maden suyunda incelemeler yapmak üzere Almanya’dan getirilen maden suyu uzmanı Schönebeck a.d. Elbe’ye yapılacak ödemenin Alman Kliring (B) hesabıyla ödenmesinin kararlaştırıldığı görülmektedir (BCA, 30-18-1-2/60-94-17). 1936 yılına ait başka bir belgede 18 aylığına staj için Almanya’ya gönderilecek Yüksek Mühendis Mektebi muavinlerinin maaş, harcırah, laboratuvar ve sair tüm masraflarının yine Alman Kliring hesabından ödenmesinden bahsedilmektedir (BCA, 30-18-1-2/67-66-20). 1937 yılına ait başka bir belgede ise yeni yaptırılacak olan gemilerin inşaatını görmek üzere Almanya’ya gönderilecek olan Denizyolları İşletmesi Fen Heyeti Şefi Server ve Akay İşletmesi İnşaiye Mühendisi Mehmed’e orada kaldıkları müddetçe verilecek aylık 450’şer Markın Kliring B hesabından ödenmesi İcra Vekilleri Heyeti tarafından onaylanmıştır (BCA, 30-18-1-2/74-33-16). Bunlar gibi daha birçok örneğe arşiv taramalarında rastlanmıştır. Özetlemek gerekirse Kliring anlaşmasına göre her iki ülkenin Kliring A hesaplarının karşılıklı denge esası üzerine açılmasından dolayı Türkiye adına açılan Kliring B hesabına karşılık, Türkiye lehine Almanya’ya ihracat cihetinden %30’luk bir fazla meblağ temin edilmiştir (Causig, 1936: 8, BCA, 490-1-0-0/1455-37-3).

Türkiye’nin Kliring veya benzeri anlaşmaya bağlı bulunan ülkelerle 1936, 1937 ve 1938 yıllarına ait ithalat ve ihracat rakamları Tablo 5’te verilmiştir:

Tablo 5: Kliring veya Benzeri Anlaşmaya Bağlı Bulunan Ülkelerle 1936, 1937 ve 1938 Yıllarının İlk 5 Ayına Ait İthalat ve İhracat Rakamları (1.000 TL)

Ülkeler/Yıllar	İTHALAT			İHRACAT		
	1936	1937	1938	1936	1937	1938
Almanya	15.250	16.250	27.664	18.405	23.228	17.612
Avusturya	1.225	691	502	723	865	1.516
Belçika	76	331	1.471	295	2.085	949
Bulgaristan	188	30	76	94	86	122
Çekoslovakya	1.655	688	3.528	1.514	2.836	3.327
Estonya	(X)	(X)	24	(X)	(X)	60
Finlandiya	(X)	426	155	(X)	222	335
Fransa	1.038	488	719	1.061	2.075	2.234
Hollanda	421	441	867	464	526	909
İngiltere	2.655	2.048	6.455	1.237	2.630	1.885
İrlanda	(X)	5	3	(X)	31	11
İspanya	850	117	(X)	470	-	(X)
İsveç	966	1.034	1.245	450	406	360
İsviçre	879	346	403	231	1.274	526
İtalya	195	3.183	2.316	931	2.409	9.526
Polonya	174	98	734	93	407	425
Letonya	(X)	(X)	46	(X)	(X)	55
Macaristan	226	444	484	324	182	367
Norveç	(X)	308	394	(X)	126	246
Romanya	365	638	305	220	93	688
S.S.C.İ.	(X)	(X)	2.539	(X)	(X)	737
Yugoslavya	148	150	193	16	45	139
Yunanistan	250	205	257	647	858	1.072
Japonya	334	516	300	668	3344	714
Toplam	26.895	28.437	50.680	27.843	40.728	43.815

Kaynak: BCA, 30-10-0-0/162-134-7, Dosya Ek: 172.

\*İlgili yıllarda bir ülke ile Kliring anlaşması yapılmadıysa (X) ile ifade edilmiştir.

Tablo 5'te hem Türkiye'nin bu üç yılda kliring anlaşması yapmış olduğu ülkeler, hem de bu ülkelerin kliring ile yapılan ticaretteki payı görülmektedir. Türkiye'nin toplam ticareti içindeki payı yüksek olan Almanya'nın kliring anlaşmalı ülkeler içinde de Türkiye ithalat ve ihracatındaki payı oldukça yüksektir. 1936, 1937 ve 1938 yıllarının ilk 5 ayına ait bu rakamlara göre Almanya'nın kliring ile yapılan ithalattaki payı sırasıyla %56,7; 57,1 ve 54,6 iken ihracattaki payı ise %66,1; %53,1 ve %40,2 şeklinde gerçekleşmiştir.

#### 4.3. Berlin Türk Ticaret Odasının Katkıları

Kliring anlaşmalarının yanı sıra Berlin'de 1928 yılında kurulan Türk Ticaret Odası'nın faaliyetleri iki ülke ticari ilişkileri açısından önem taşımaktadır. Almanya Türk Ticaret Odası'nın nizamnamesinde belirtildiği üzere odanın amacı Türkiye ve Almanya arasındaki iktisadi ve bilhassa ticari ilişkilerin artırılmasını sağlamaktır. Nizamnamede odanın görevleri dört madde şeklinde belirtilmektedir (TDA, 534-37677-151626-10):

1. Her iki ülkeyi ilgilendiren her türlü iktisadî meseleden bahsedip, tetkik etmek,
2. Her iki ülkedeki ilgililere genel malumat ve açıklamalarda bulunmak, ayrıca bir ülkenin ticaret erbabının diğer ülke müesseseleri ve resmi daireleri ile ilişki kurmalarına yardımcı olmak ve yol göstermek,
3. Üyelerin ticaret ve sanayideki menfaatlerinin korunması ve geliştirilmesi,
4. İki tarafın ticari ilişkilerinde meydana gelen ihtilafların dostane bir biçimde çözülmesi.

Odanın 12 İkinditeşrin/Kasım 1936 tarihli raporunda 1934 yılından itibaren Almanya ile Türkiye ticaretinin artışının sebeplerinden birinin odanın çalışmaları olduğu ifade edilmektedir (BCA, 30-10-0-0/164-148-11). Gerek odanın neşrettiği haberler ve haftalık bültenler ve gerekse katıldığı panayırılar ile Türk-Alman ticaretinin artışına destekte bulunduğu ifade edilmektedir. Berlin Türk Ticaret Odası'nın 1936 yılında Almanya'da Leipzig sergisinden sonra gelen Breslau ve Königsberg Panayırlarına, bütün masrafları kendileri karşılayarak, Türkiye adına katıldıkları yazmaktadır. Bu panayırılarda içlerinde halı ve elişleri gibi Türk mallarının da bulunduğu çeşitli Türk ürünlerinin numunelerinin getirilip tanıtıldığı ve ayrıca Königsberg'de yine Türk ürünlerine ait olmak üzere 20.000'den fazla broşürün dağıtıldığı yazmaktadır. Raporda görüldüğü üzere Berlin Türk Ticaret Odası'nın önceki yıllara göre giderek artan talep ve baskı sayısı ile hem yayınları hem de panayır ve sergilere katılımları aracılığıyla Almanya'da Türk ürünlerinin tanıtılması ve ticaretinin artırılması için çalıştığı anlaşılmaktadır.

#### 4.4. 1936 Yılından İkinci Dünya Savaşına

Almanya ile Türkiye ilişkilerdeki olumlu hava 1936 yılından sonra değişmeye başlamıştır. 1936 yılından itibaren Almanya ve Türkiye arasında yaşanan siyasi gerilimler iki ülkenin ticaretini olumsuz etkilemeye başlamıştır. Politik açıdan Almanya ile ilişkilerde değişimin başlangıcını aslında Nazi Partisi'nin iktidara gelmesine kadar götürmek mümkündür. Çünkü Almanya'da Nazi Partisi'nin iktidara geliştikten sonra iki ülkenin dış politika hedef ve yöntemlerinde ciddi farklılıklar meydana gelmeye başlamıştır (Koçak, 1991: 248). Bu süreçte Almanya'nın İngiltere-Türkiye ilişkilerine olumsuz bakışı, yine Almanya'nın Balkan Paketi'ne ve Müntrö Antlaşması'na karşı olumsuz tutumu, İtalya'nın Habeşistan'ı işgaline Almanya'nın destek vermesinden Türkiye'nin rahatsız olması gibi nedenler Türk-Alman ilişkilerinde Münih Antlaşması'na kadar devam eden bir soğukluğu beraberinde getirmiştir (Koçak, 1991: 248).

Yaşanan problemlere rağmen Türkiye'nin ticaretinde en önemli payın hala Almanya'ya ait olduğu görülmektedir. Türkiye'nin 1936, 1937, 1938 yıllarında ithalat yaptığı ülkeler Almanya, Arnavutluk (1936 hariç), Avusturya, Belçika, Bulgaristan, Çekoslovakya, Danimarka, Estonya, Finlandiya, Fransa, Hollanda, İngiltere, İrlanda, İspanya, İsveç, İsviçre, İtalya, Polonya, Letonya, Litvanya (1937 hariç), Macaristan, Malta, Norveç, Portekiz, Romanya, Rusya, Yugoslavya, Yunanistan, Çin, Filipin, Filistin, Hicaz (1936 hariç), Hindistan, İran, İtalya Adaları (Ege) (1937 ve 1938 hariç), Irak, Japonya, Kıbrıs (1936 hariç), Seylan, Siyam (1936 ve 1937 hariç), Suriye, Cenubi Afrika (1936 ve 1937 hariç), Fas (İspanya) (1936 hariç), Mısır, Amerika M. M., Arjantin (1936 hariç), Brezilya, Kanada (1936 hariç), Küba (1938 hariç), Avusturalya (1937 hariç) ve belgede belirtilen diğer memleketler ve meçhul olarak adlandırılmış iki kalem şeklindedir. (BCA, 30-10-0-0/24-139-1). Tüm bu ülkeler arasından Almanya'dan yapılan ithalatın oranı 1936, 1937 ve 1938 yılları için sırasıyla %45,1; %42,1 ve %47 şeklindedir (Diğer ülkelerle yapılan ithalat rakamları için bkz. Ek 2).

Aynı yıllarda ihracat yapılan ülkeler ise Almanya, Arnavutluk (1936 hariç), Avusturya, Belçika, Bulgaristan, Çekoslovakya, Danimarka, Estonya, Finlandiya, Fransa, Hollanda, İngiltere, İrlanda, İspanya, İsveç, İsviçre, İtalya, Polonya, Letonya, Litvanya (1936 ve 1937 hariç), Macaristan, Malta, Norveç, Romanya, Rusya, Yugoslavya, Yunanistan, Çin (1936 ve 1938 hariç), Filistin, Hicaz (1936 hariç), Hindistan, İran, İtalya Adaları (Ege) (1937 ve 1938 hariç), Irak, Japonya, Kıbrıs (1936 hariç), Seylan, Suriye, Yemen (1937 hariç), Cenubi Afrika (1936 ve 1937 hariç), Fas (İspanya) (1937 ve 1938 hariç), Mısır, Amerika M. M., Arjantin (1936 hariç), Brezilya, Kanada (1936 hariç), Küba (1938 hariç), Meksika, Avusturalya (1937 hariç), Yeni Zelanda ve belgede belirtilen diğer memleketler ve meçhul olarak adlandırılmış iki kalem

şeklinde (BCA, 30-10-0-0/24-139-1). Tüm bu ülkeler arasından Almanya'ya yapılan ihracatın oranı 1936, 1937 ve 1938 yılları için sırasıyla %51; %36,5 ve %42,9 şeklinde gerçekleşmiştir (Diğer ülkelerle yapılan ihracat rakamları için bkz. Ek 2).

Son olarak Almanya ile yapılan ticarete ele alınan dönemde Almanya ile ticarete konu olan ürünler hakkında arşivden elde edilen bazı veriler Tablo 6 ve Tablo 7'de verilmiştir:

Tablo 6: 1924 Yılında Almanya İthalat ve İhracatındaki İlk Beş Ürün

Almanya'ya İhrac Edilen İlk Beş Ürün			Almanya'dan İthal Edilen İlk Beş Ürün		
Ürün Adı	Miktar (100 kg)	Değer (1000 mark)	Ürün Adı	Miktar (100 kg)	Değer (1000 mark)
Ham Tütün	105.023	27.964	Kumaşlar ve Diğer Dikilmiş Ürünler**	11.167	12.003
Tropikal Meyveler	219.074	16.573	Demirden Üretilen Emtia	192.222	9.313
Meyve	21.466	3.349	Kâğıt ve Kâğıt Ürünleri	63.895	2.664
Kereste, Kabuk ve Parçaları	74.901	1.477	Diğer Kimyasal ve İlaç Ürünleri	9.967	2.318
Kırık, eski, hurda, alaşımlar*	8.720	969	Buharlı Lokomotif, Tender	20.251	1.988

Kaynak: TDA, 501-32129-126798-29.

\*Bu kalemin alt kalemlerinde demir, bakır, kurşun, kalay, çinko, alüminyum ve diğer bazı metaller bulunmaktadır.

\*\* Bu kalemin alt kalemlerinde ipek ve suni ipek, yün ve hayvan kılı, pamuk, keten kenevir, jüt vb. bulunmaktadır.

Tablo 7: 1937 ve 1938 Yılları İkinci Kânun ve Mayıs Ayları Arasında Türkiye'den Almanya'ya İhrac Edilen Maddeler, Miktarları (Kilo) ve Kıymetleri (Lira)

Madde İsimleri	Miktar (Kilo)	Kıymet (Lira)	Miktar (Kilo)	Kıymet (Lira)
Tütün (Yaprak)	3.897.580	3.652.132	4.738.918	5.041.234
Fındık (Kabuksuz)	4.419.187	3.061.288	6.665.108	2.480.374
Üzüm (Çekirdeksiz)	4.731.925	949.222	11.526.471	2.389.941
Üzüm (Çekirdekli)	1.054.696	124.560	-	-
Buğday	40.438.835	2.615.683	28.485.583	1.802.637
Çavdar	28.456.013	1.615.017	-	-
Ham Deri	740.409	541.409	1.026.836	651.530
Portakal	2.762.784	319.798	3.305.866	366.712
Bakla	3.945.605	212.227	5.344.078	276.480
Kereste	2.113.976	318.075	2.415.682	419.778
Palamut Hülâsası	755.177	113.926	1.982.971	330.848
Krom Cevheri	30.269.047	608.662	22.803.000	552.577
Tiftik	550.597	795.528	132.116	207.346
İncir	1.499.801	100.590	2.147.921	182.172
Palamut	5.863.194	304.147	5.649.823	340.515
Arpa	27.051.111	1.267.627	3.230.000	163.544
Barsak	75.420	204.263	21.753	146.463
Nohut	1.624.531	101.762	1.556.402	94.107
Kuşyemi	453.495	56.964	822.377	71.879
Darı	1.366.509	61.809	865.831	54.422
Sünger	2.199	11.448	4.173	50.170
Afyon	8.002	61.023	10.020	78.139
Keçi Kılı (Kırlı)	44.991	18.196	95.721	58.841
Ceviz (Çekirdeksiz)	193.448	79.782	131.768	59.349
Meyan Bali	54.433	12.313	250.731	57.316

Tablo 7 Devam: 1937 ve 1938 Yılları İkinci Kânun ve Mayıs Ayları Arasında Türkiye'den Almanya'ya İhraç Edilen Maddeler, Miktarları (Kilo) ve Kıymetleri (Lira)

Madde İsimleri	Miktar (Kilo)	Kıymet (Lira)	Miktar (Kilo)	Kıymet (Lira)
Fındık (Kabuklu)	-	-	146.450	23.681
Fasulye	1.984.144	219.406	380.895	22.098
Meyan Kökü Hülâsası	-	-	79.926	23.623
Balmumu	16.482	15.141	22.601	20.018
Koza	-	-	19.710	14.585
Kitre	31.677	50.639	21.136	18.132
Badem (Kabuksuz)	6.930	5.516	18.977	12.592
Zımpara	608.600	8.330	850.000	11.425
Zeytinyağı	478.476	260.100	18	6
Taze Balık	17.200	7.977	15.561	8.881
Av Derileri	7.419	59.952	9.528	45.739
Pamuk	4.495.149	2.332.877	410.026	150.070
Pamuk Döküntüleri	16.162	8.458	-	-
Kepek	6.041.760	201.322	82.244	2.974
Halı	43.108	190.153	-	-
Ceviz (Kabuklu)	39.359	7.255	5.517	2.622
Gülyağı	26	5.510	5	1.505
Meyan Kökü	60.071	8.219	35.677	2.170
Küspe	4.585.203	178.797	537.413	23.511
Kara Arpa	5.821.096	270.013	-	-
Haşhaş Tohumu	81.199	12.355	-	-
Keten Tohumu	284.917	27.300	-	-
Adi Yün (Kırlı)	1.593.131	1.158.457	18.809	12.156
Adi Yün (Yıkanmış)	134.049	131.437	-	-
Badem (Kabuklu)	988	847	-	-
Yumurta	257.090	100.651	189.450	55.274
Yulaf	-	-	3.179.434	140.969
İpek ve Döküntüleri	1.792	3.109	13.314	20.729
Antimuan Cevheri	22.000	1.760	-	-
Diğer Maddeler	5.753.971	755.446	3.620.023	1.122.380
<b>Toplam</b>	<b>194.854.964</b>	<b>23.228.478</b>	<b>112.869.863</b>	<b>17.611.514</b>

Kaynak: BCA, 30-10-0/162-134-7: 32-33.

Ele alınan dönemde Türkiye'nin Almanya'ya ihracatının en büyük bölümünü tarımsal ürünlerin, Almanya'dan ithalatının en büyük bölümünü ise sanayi ürünlerinin oluşturduğu görülmektedir. Her ne kadar 1930'lu yıllarda sanayileşmeye ağırlık verilse de çalışmanın ele alındığı dönemde, Türkiye'nin Almanya ile ticaretinde tarımsal ürün ihracatçısı ve sanayi ürünü ithalatçısı pozisyonunun değişmediğini söylemek yanlış olmayacaktır.

## 5. Sonuç

Türkiye gibi Almanya da I. Dünya Savaşı sonrasında Avrupa'da yalnızlığa terk edilmişti ve bu nedenle hem diplomatik hem de ekonomik ilişkiler kurma çabası içindeydi. Türkiye'nin Lozan Antlaşması ile bazı konularda ödün vermesi ve Almanya'nın hem iç hem de dış politikasına Versay Antlaşmasıyla yapılan müdahaleler ve baskılar, geçmişte müttefik olan iki ülkeyi diplomatik ve ticari olarak yakın ilişkiler kurmaya yöneltmiştir.

3 Mart 1924 yılında imzalanan Türk-Alman Dostluk Antlaşması ile savaş sonrasında neredeyse kopma noktasına gelen diplomatik ilişkiler resmi olarak yeniden başlamıştır. Ticaret anlaşması için de sürekli müzakerelerde bulunan iki ülke arasında 1926 yılında yapılacak olan esas ticaret antlaşması imzalanana kadar beklenmemiş, iki ülke arasındaki ticari ilişkilerin hızla kurulması adına bu süreçte Modüs Vivendi yani geçici anlaşmalar imzalanmıştır. Yavaş yavaş Türkiye ticaretindeki payı artmaya başlayan Almanya ile Türkiye arasındaki ticari ilişkilere ait istatistikler incelendiğinde 1927 ve 1929 yıllarında yaşanan kötü hasat ve 1929 krizi nedeniyle 1920'li yılların sonları ve 1930'lu yılların başlarında bazı dalgalanmalar yaşansa da iki ülke ticari anlaşmalar çerçevesinde ilişkilerini ayakta tutmayı başarmıştır. Türkiye'nin bu ilişkide zirai ürün ve hammadde ihraç eden ve sanayi ve mamul mallar ithal eden bir ülke olması nedeniyle 1929 Kriziyle düşen dünya tarımsal ürün fiyatlarının olumsuz etkisi kaçınılmaz olmuştur. Bu dönemde 1930 ve 1933 yıllarında imzalanan anlaşmaların yanı sıra, 1930'lu yıllarda Büyük Buhranın ticaret üzerindeki olumsuz etkisinin azaltılması için birçok ülkenin başvurduğu Kliring adı verilen takas sisteminin en güzel örneklerinden bir tanesi olarak gösterilebilecek Almanya-Türkiye kliring ticareti ile krizin olumsuz etkisi önemli ölçüde azaltılmıştır. 1936, 1937 ve 1938 yılına ait rakamlar incelendiğinde Türkiye ticaretinde giderek payı artan Almanya ile ticaretin üçte birinin Kliring usulü ile yapıldığı görülmektedir. Bu sistemle iki ülke merkez bankaları arasında bir köprü kurulmuş ve döviz alım satımından kaynaklanan sıkıntılar bertaraf edilerek ticaret daha kolay hale getirilmiştir. Ayrıca kliring ile birlikte uygulanan kontenjan usulü 1930'lu yıllarda daha korumacı bir politika benimseyen Türkiye'nin ithal ikameci politikalarına daha uygun olmuştur.

Dönem boyunca siyasi, ekonomik ya da iklimsel birtakım sıkıntılar nedeniyle iki ülke ticareti zaman zaman dalgalanmalar yaşasa da Türk arşivlerinden elde edilen Türkiye'ye ait ticaret rakamları incelendiğinde, dönem boyunca Almanya'nın Türkiye ticaretindeki yeri, payı ve öneminin arttığını söylemek yanlış olmayacaktır. Özellikle bu artış 1930'lu yıllarda çok daha belirgin hale gelmiştir. Almanya ticaretinde Türkiye'nin payının çok yüksek oranlarda olmamasına rağmen belgelerden Almanya'nın da Türkiye ile olan ilişkilerine ve ticaretine önem verdiği, çok yüksek artışlar olmasa bile Türkiye'nin Almanya ticaretindeki payının zamanla yükseldiği söylenebilir.

## Kaynakça

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- 30-18-1-1 / 9-15-2

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- 30-18-1-1 / 14-33-7

- 30-18-1-1 / 15-60-2

- 30-18-1-1 / 17-70-18

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- 30-18-1-1 / 19-43-2

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*T.C. Cumhurbaşkanlığı Devlet Arşivleri Dışişleri Bakanlığı Türk Diplomatik Arşivi (TDA)*

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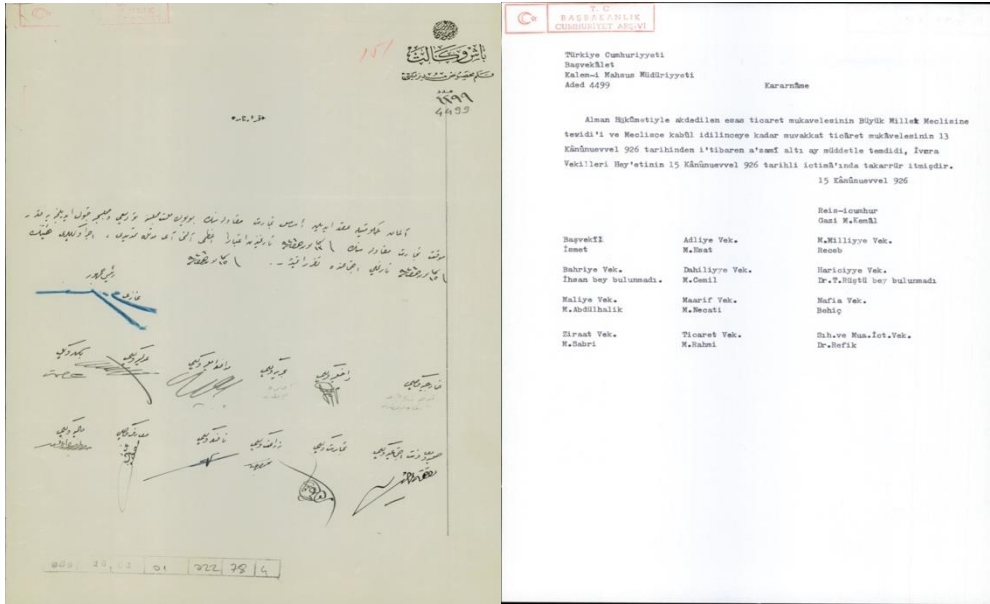
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**EK 1: Almanya ile İmzalanan Geçici Ticaret Sözleşmesinin 6 Ay Süreyle Uzatılması**



Kaynak: T.C. Cumhurbaşkanlığı Devlet Arşivleri Cumhuriyet Arşivi (BCA), Kararlar Daire Başkanlığı (1920-1928), 30-18-1-1 / 22-78-4.

**EK 2: Türkiye'nin 1936, 1937 ve 1938 Yıllarına Ait Ülkelere Göre İthalat ve İhracat Kıymetleri**

**DIŞ TİCARET DURUMU**  
B. Memleketler itibarile ithalat ve ihracat kıymetleri (1000 Türk Lirası)

Memleketler	İthalat						İhracat						
	1936			1937			1936			1937			
	1936	1937	1938	1936	1937	1938	1936	1937	1938	1936	1937	1938	
Almanya	70.411	58.132	54.752	62.210	50.512	60.041	Filistin	—	—	—	—	—	—
Arnavutluk	2	—	—	61	3	3	İleaz	544	935	374	329	650	600
Avusturya	772	1.897	2.535	1.711	2.799	1.572	Hindistan	2.292	2.460	572	176	820	1.135
Bekica	2.545	1.308	250	2.597	6.633	1.657	İran	6	71	2	30	32	18
Bulgaristan	581	476	514	472	565	322	İtalya Adaları (Ege)	—	—	1	163	264	186
Cekoslovakya	5.776	3.066	3.627	5.999	6.093	5.012	İnk.	19	17	109	161	39	50
Danimarka	10	25	258	253	12	112	Japonya	972	940	1.673	282	963	1.572
Estonya	75	80	77	123	113	66	Kuba	29	19	—	38	105	18
Feridandya	601	1.063	1.962	627	142	355	Seylan	165	133	122	8	154	6
Fransa	1.972	1.240	2.335	4.738	5.269	3.828	Siyon	2	—	—	—	—	—
Hollanda	1.794	1.917	935	2.109	1.671	1.318	Suriye	630	838	589	1.087	2.254	1.637
İngiltere	16.795	7.115	6.103	5.593	9.787	6.556	Yemen	—	—	—	1	—	1
İrlanda	20	17	2	74	153	118	Genubi Afrika	1	—	—	51	55	26
İspanya	29	188	1.291	2	1.023	—	Fas (İspanya)	4	1	—	—	—	2
İsviç	2.300	2.158	2.057	1.774	1.921	1.462	Mısır	1.078	2.551	1.136	1.261	1.559	1.050
İsviçre	1.012	787	2.067	1.632	2.163	1.151	Amerika M. M.	15.680	11.255	8.993	17.765	12.201	13.110
İtalya	7.120	6.085	2.024	16.363	7.266	5.353	Arjantin	171	46	—	162	36	21
Polonya	2.660	361	432	2.202	2.261	525	Brezilya	1.752	2.006	1.647	550	317	670
Letonya	74	53	57	234	80	119	Honduras	—	—	—	—	—	—
Litvanya	9	—	60	—	—	—	Kanada	13	1	—	688	565	215
Macaristan	1.544	1.045	659	1.039	550	512	Küba	—	1	2	25	23	11
Malta	83	2	31	434	680	304	Meksika	—	—	—	—	—	—
Norveç	669	673	860	704	509	385	Peru	—	—	—	—	—	—
Portekiz	19	1	2	—	—	—	Portoriko	—	—	—	—	—	—
Romanya	1.720	1.574	1.507	3.293	1.025	520	Sih	—	—	—	—	—	—
Rusya	5.891	7.072	5.035	3.199	4.588	3.944	Avustralya	68	—	2	120	171	124
Yugoslavya	423	542	779	419	169	120	Yeni Zelanda	—	—	—	79	59	87
Yunanistan	753	577	774	2.851	1.962	2.026	Diğer memleketler	412	314	1.185	1.352	1.877	1.877
Çin	84	41	35	—	1	—	Meşhur	18	23	6	284	578	389
Filipin	403	464	421	—	—	—	YERÜN	1	—	—	82	—	—
159.837 116.719 90.531 144.964 127.584 117.735													

Kaynak: T.C. Cumhurbaşkanlığı Devlet Arşivleri Cumhuriyet Arşivi (BCA), Muamelat Genel Müdürlüğü, 30-10-0-0 / 24-139-1.

### Extended Summary

#### Trade Relations between Turkey and Germany from 1923 to 1939 according to the Turkish Archive Documents: War, Crisis and Agreements

Although the beginning of Turkish-German commercial relations could not be clearly revealed, one can say that the close relations between the Prussian and Ottoman Empires began in XVIII. century which was the time of Frederick the Great. At the time of Wilhelm II Germany aimed to establish colonial territories in Africa and increase its influence in the near east. It can be said that Germany increased its relations with the Ottoman Empire within the framework of its policies to increase its contact with the Near East. However, these relations were interrupted due to the start of World War I and the defeat of both countries. After World War I two countries were left alone and tried to recover under the pressure of the Lausanne and Versailles Agreements. Afterward, Turkey and Germany started negotiations to revive political and economic relations with each other. This study first summarizes the pre-republican commercial relations between the two countries. Then it analyses Turkish- German commercial relations from the establishment of the Republic of Turkey to the beginning of World War II. In this regard, the Presidency Republic Archive and the Ministry of Foreign Affairs Turkish Diplomatic Archive has been extensively used to reveal the commercial relations between the two countries.

Officially diplomatic relations between the two countries started with the Turkish-German Friendship Treaty signed on March 3, 1924. With this treaty, diplomatic relations, which were almost at the breaking point after the war, were officially resumed. Germany and Turkey signed Modus Vivendi, in other words temporary trade agreements that prevented suspending commercial relations until the main trade agreement was signed in January 1927. One can observe that trade with Germany has increased since 1924 with the start of negotiations with Germany. However, in 1927 Turkey's exports to Germany have fallen seriously. According to the findings obtained in this study, the reason for this decrease was the bad harvest in Turkey during this period. Although it tended to recover in the years following 1928 and 1929, the German-Turkish foreign trade began to take on an even more negative outlook with the outbreak of the 1929 crisis, which shook almost the whole world. While it doesn't appear to be a big problem in the import figures, it is seen that the export figures continued decreasing in 1930 and 1931. One of the most important reasons for this decline was the fall of agricultural product prices in the world due to the 1929 Crisis which constitute the majority of Turkey's exports. When one looks at the goods subject to trade between Germany and Turkey during the period, it is seen that Turkey is an exporter of agricultural products and raw materials and an importer of industrial and manufactured goods in this relationship.

With the end of the bindingness of the Lausanne Treaty in 1929, Turkey adopted more protectionist policies and started to implement an import substitution industrial policy in order to eliminate the negative effects of the crisis and also to support the domestic economy and production. In this context customs duties were increased in 1933, but due to the negative impact on trade with Germany, customs duties were reduced as a result of negotiations between the two countries. After Hitler came to power some countries started to boycott German goods, which was causing Germany to get closer to Turkey. Finally, after the trade agreement signed in Berlin on 10 August 1933 and the clearing agreement signed with the Reichsbank to be implemented together with this trade agreement the increase in the trade between the two countries accelerated.

The economic contraction brought on by the crisis all over the world and the problems experienced in foreign trade led the countries to new trade agreements and procedures. In this period Turkey started to apply the quota method and started to sign bilateral clearing agreements the first of which was with France in 1932. The government even established a clearing commission affiliated to the Ministry of Economy within the framework of the clearing policy by enacting the law no. 993 on 29 May 1932. Turkey also signed a clearing agreement with Germany on 10 August 1933. The two countries continued to sign trade and clearing agreements with additional regulations throughout the 1930s, and the commercial relations between the two countries were constantly updated. Especially after the clearing agreements, Germany has become the most important partner of Turkey's trade throughout the 1930s. During this period, the Turkish Chamber of Commerce, which was established in Berlin in 1928, took initiatives to facilitate the trade between the two countries and to help the merchants.

Starting from 1936, political tensions between Germany and Turkey have begun to affect negatively the trade between the two countries. However, despite the problems experienced, it is seen that the most important share of Turkey's trade still belonged to Germany. For the years 1936, 1937, and 1938, the percentage of imports from Germany was respectively 45.1%, 42.1%, and 47%; the percentage of exports was respectively 51%, 36.5%, and 42.9%. Although the trade between the two countries fluctuated from time to time due to some political, economic, or climatic problems during this period according to the trade figures of Turkey obtained from the Turkish archives are examined it would not be wrong to say that the place, share, and importance of Germany in Turkey's trade

increased throughout this period. This increase became much more evident in the 1930s. Although Turkey's share in Germany's trade is not very high, it can be said from the documents that Germany attaches importance to its relations and trade with Turkey and that Turkey's share in Germany's trade has increased over time, even though there are not very high increases.

In summary, according to the documents examined, one can say that Turkey has applied commercial agreements and clearing agreements in order to improve its foreign trade with Germany and that overall, these methods had a positive effect on the trade with Germany and Turkey's export figures.

## Construction of Acceptable Citizenship Through Primary School Textbooks in Iran\*

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Rukiye Tinas<sup>2</sup>

<b>İran'da İlkokul Ders Kitapları Aracılığıyla Makbul Vatandaşlık İnşası</b>	<b>Construction of Acceptable Citizenship Through Primary School Textbooks in Iran</b>
<b>Öz</b> Bu makale, İran İslam Cumhuriyeti'nin 1979 Devrimi'nden sonra ortaya çıkan vatandaşlık anlayışına ilkökul ders kitaplarını inceleyerek ışık tutmayı amaçlamaktadır. Bunlar 14 ortak ders kitabıdır: Farsça, Kuran-ı Kerim Öğretimi, Gökyüzünün Hediyesi: İslami Eğitim ve Öğretim ve Sosyal Bilgiler. İncelemenin neticesinde, İran devletinin makbul vatandaşlardan oluşan ideal toplumunu yaratan vatandaşlık anlayışının ümmet fikrinden beslendiği ve Şii-Müslüman ve Şii-İran unsurlarına uygun olarak hem mezhepsel hem de etnik kimliklere dayalı olduğu ortaya çıkmıştır.	<b>Abstract</b> This article aims to shed light on the Islamic Republic of Iran's conception of citizenship that emerged from the 1979 Revolution by analyzing primary school textbooks. Those are 14 books of common courses: Persian, Teaching the Qur'an, Heaven's Gifts: Islamic Education and Training and Social Studies. At the end of this analysis, it was revealed that the conception of citizenship, which creates the ideal society of the Iranian state consisting of acceptable citizens, is fed by the idea of the ummah and based on both sectarian and ethnic identities in accordance with the Shiite-Muslim and Shiite-Iranian elements of the state.
<b>Anahtar Kelimeler:</b> İran, Şia, İslam Devrimi, Makbul Vatandaş, İlkokul Ders Kitapları	<b>Keywords:</b> Iran, Shiism, Islamic Revolution, Acceptable Citizen, Primary School Textbooks
<b>JEL Kodları:</b> D74, I21, Z12	<b>JEL Codes:</b> D74, I21, Z12

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	İki yazarın makaleye katkısı eşittir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

\* Article extracted from the master thesis titled "Construction of the Palatable Citizen in the Republic of Iran: Analysis of Primary School Textbooks", written by Esin Erginbaş under the supervision of Dr. Rukiye Tinas in the Department of Political Science and Public Administration in the Institute of Social Sciences of Eskişehir Osmangazi University.

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## 1. Introduction

Citizenship, as Aristotle puts it, is one of the identities experienced by the individual as a *zoon politikon* and a dynamic concept that has been defined in different ways throughout history. This concept, as the subject of democracy, mainly refers to the membership of an individual to the political community and the sum of relations one establishes with the state. After the emergence of nation-states, citizenship has taken an identity form in which the individual is assigned a role in every medium, including the public and the private spheres, an identity that aims to influence the individual through various mechanisms. The citizen, who knows his/her responsibilities to the state and is conscious of fulfilling his/her duties with a sense of loyalty, and whose identity is integrated with the state identity, constitutes the prototype of the acceptable citizen.<sup>3</sup> The concept of acceptable citizenship becomes operational through individuals who share a sense of belonging thanks to this awareness of responsibility and identity (Balibar, 2016: 90). This sense of belonging shapes the other along with the acceptable. The definition of the concept of the other is principally based on the criteria of the me-us culture, and it refers to the people who are below and lacks this culture (Schnapper, 2005: 25-27).

Following the 1979 Revolution, Iran adopted the Islamic Republic as its administrative model and aimed to construct citizenship in line with the new ideology of the state. The citizenship that the new regime has aimed to construct on the basis of the concept of *Velayat-e Faqih* (Islamic Government), which was developed by Supreme Leader Khomeini, has been defined in line with the *Ithna-'ashariyyah* (The Twelve Imams) branch of Shiism – which Iran accepts as the official sect in the Constitution (Article 12) – and the marginalization of the former regime, the Pahlavi Dynasty.

Defining the Pahlavi Dynasty, the representative of the former regime and the recent past, based on the concept of the other, is significant for the formation of this identity. The Pahlavi administration, which started with Reza Shah's reign in 1925 and lasted until the 1979 Revolution against the rule of his son Mohammed Reza Shah, was identified with the concepts of centralization, Westernization, secularization, modernization, and national unity (Abrahamian, 2018: 110-118). Thus, the Pahlavi administration left the legacy of a nation-state structure and a citizen prototype built on the basis of this structure for the Islamic Republic.

Even though the official name of the new regime includes the word Islam, Iran aimed to establish the allegiance of citizens to the state with the ideological tools used by modern states. This article examines the common parameters which construct both Persian and Muslim (Shiism) Iranian identity for students in Iran through the primary school textbooks in the school, as an institutional apparatus of the modern state, during the period 1396-1397<sup>4</sup> in the Islamic calendar. The sample of the research consists of 14 books<sup>5</sup> of common

<sup>3</sup> The Turkish version of this concept is used for the first time in 2004 by Füsün Üstel in her book titled "Makbul Vatandaş'ın Peşinde, II. Meşrutiyet'ten Bugüne Vatandaşlık Eğitimi". Üstel reveals the citizen profile that the Turkish State aims to construct by examining citizenship education through textbooks and education programs.

<sup>4</sup> It is because of the fact that current Iranian Supreme Leader Ali Khamenei put forward a new vision by declaring that the *Second Phase of the Revolution* had been started in his speech on Bahman 22, 1397 (February 11, 2019) on the occasion of the 40th anniversary of the Islamic Revolution (Khamenei, 1397). Considering that the education programs and textbooks were renewed in this respect, this study examines the education period of 1396-1397.

<sup>5</sup> PDF formats of these books are available on the official website of the Ministry of Education of Iran. See Iranian Ministry of Education, (no date), <http://chap.sch.ir/school-books> (Accessed: 14.01.2023).

courses: Persian, Teaching the Qur'an, Heaven's Gifts: Islamic Education and Training, and Social Studies. These textbooks were examined through the document analysis method, a qualitative research technique. The study aims to make a contemporary contribution to the social sciences literature by analyzing the concept of acceptable citizenship, which occupies a significant place in the Political Science discipline, through the example of Iran, which has been examined via different approaches since the Revolution.

This article will first define the conceptual framework of the study by examining the concepts of ideal/other in the West and Islam and discuss the school as an ideological institution for the formation of citizens. On this basis, the impact of the 1979 Revolution and Supreme Leader Khomeini on the formation of the citizen prototype of the Islamic Republic will be analyzed. Finally, the article will present findings of the analysis of the selected primary school textbooks concerning the Shiite-Muslim and Shiite-Iranian Citizen conception of the Islamic Republic of Iran.

## **2. The Concept of Citizenship in the West and Islam**

The concept of citizenship, whose foundations are drawn from the tradition of ancient Greece, will be discussed first in the West, primarily meaning political commitment to a community and a state and having gained new meanings over time. Next, the concept will be analyzed in the Islamic tradition, where it is shaped by religious teachings.

### **2.1. The Emergence of the Concept of Citizenship in the West**

The concept of citizenship first emerged in the polis, which was a form of social and political organization in ancient Greece. In these city-states, citizenship took form on the basis of participation in public affairs, equality, loyalty, partnership, public life, privilege, and prerogative. Examining the concept of citizenship in Athens through the ideas of Ancient Greek philosophers reveals that Plato (2019: 132) classifies citizens into three categories as guardians, auxiliaries, and producers, and distinguishes mass and elite citizens while attaching importance to raising elite citizens for the establishment of the state order (2019: 237). Another philosopher, Aristotle (1975: 8), on the other hand, differentiates the rulers and the ruled and states that it is natural for the ruler class to come to the fore with their intelligence while the slaves come into prominence with their physical strength. Ultimately, citizenship in ancient Greece started to mean sharing in the polis and acquired a form that represents the totality of official obligations, privileges, as well as feelings, and common attitudes (Manville, 1997: 210). Although the number of active citizens participating in public life was limited, individuals assumed the role of active citizenship by representing belonging to the political partnership and participating in public life.

Contrary to the citizenship culture of ancient Greece, which appealed to a limited group, citizenship in Rome gained a universal dimension during the Imperial Period. Following the expansion of the borders, in 212 AD, Emperor Caracalla issued an edict recognizing the right of citizenship of the free people living in the empire. Thus, citizenship acquired a legal and legitimate basis. As a result, individuals gained the right to citizenship without voting and political participation (Bellamy, 2008: 39). Therefore, it is possible to say that the concept of active citizenship had been eroded in ancient Greece, while a new perception of citizenship emerged as a right given to the masses instead of citizenship as participation in active political life.

The concept of citizenship in the Middle Ages, on the other hand, is related to its relationship with Christianity and the emergence of the concept as a status in cities (Heater, 2007: 67). The influence of religion made the devotion to the society and the state seen in the ancient age transform into a *Gemeinschaft* based on fraternity which emphasizes the spirit of individuals (Riesenberg, 1992: 88-89). Indeed, Christian theology, which conveys that the indicator of being a good person is possible by participating in worship, has assigned a role to individuals in line with the aim of being a good person. In addition, since each of the cities had local laws, legislative systems, and administrations of their own in the medieval city-states, they acted as states. As a result, local citizenship culture developed in these city-states. The citizen freedom movement and communal administration, which started primarily in Italian city-states, constitute important examples of this culture (Bookchin, 1999: 140-145). However, the fragmented status of the city-states and the search for political unity paved the way for the era of absolute monarchies. The reduction of local citizenship to the status of being a subject of the state with the obligations of loyalty, subjection, and obedience created the basis for the concept of state citizenship in the absolute monarchies, aiming at political unity.

The rise of the modern nation-state and the emergence of national consciousness in societies correspond to the acquisition of political and legal content of the concept of citizenship. The concepts of nation and state began to be used together as nation-states after the revolutions of the late 18th century. Indeed, the Enlightenment<sup>6</sup> preceding the revolutions had a great impact on the emergence of these concepts. The political pillar of the Enlightenment, centered on the individual and the consent of the individual, paved the way for governments that derive their legitimacy not from God but from a worldly political order. The supporters of the social contract played an important role in this transition (see Thomas Hobbes, John Locke, Jean-Jacques Rousseau). Thus the state is transformed into a modern form that privileges political unity, the individual as a citizen and the citizen as people. In the 19th century, the definition of the modern state in general terms was consciously and often clearly shaped in connection with nationalism. Under the principle of territorial integrity, the modern state is surrounded by militarily defensible geographical borders, has a single currency, a single national language superior to local languages and a single legal system (Poggi, 2019: 114). From the beginning of the 20th century, a series of views have emerged that assess the concepts of nation, nationalism and the modern state, as well as changes in social and cultural realms within the framework of political interest. For example, Ernest Gellner and Benedict Anderson, while explaining the concepts of nation and nationalism, emphasized social and cultural change. According to Gellner, the concepts of “industrial society” and “homogeneous standardized culture” formed the basis of the modern approach

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<sup>6</sup> The foundation of Enlightenment philosophy is based on rationalism, empiricism, scepticism and human-centered ideas, which are based on the betterment of society and the life of the individual and seek intellectual progress. It refers to a process of development that took shape in France, Germany and Scotland in the 18th century, but is not tied to any specific historical period or place. Among the thinkers of the Enlightenment are Jean le Rond D’Alembert, Denis Diderot, David Hume and Emmanuel Kant. Enlightenment thought is most associated with political revolutions and ideals. The 1789 French Revolution is the clearest example of this (Bristow, 2007). The French Revolution played a central role in the theory and practice of the concept of citizenship and its evolution into modern citizenship. It revived the active political citizenship approach of the classical age and brought direct state membership to the citizens by inventing both the nation-state and the national citizenship ideology (Brubaker, 2009: 74). Moreover, it paved the way for a form of society as a result of modernity, a new type of common identity, and the interstate order (Smith, 2013: 69). It also witnessed the birth of the French nation in the form of the French Republic.



to national identity and the nation. Nations are a new phenomenon that emerged with the process of industrialization in the modern age as a product of faith, loyalty and solidarity created by people (2018: 78). In this context, nationalism transformed the cultures brought by the historical heritage and created nations by resorting to “reviving dead languages” and “inventing traditions”. In other words, it is nationalism that created nations (2018: 138). Anderson, who defines nations as limited and sovereign “imagined communities”, sees nations and nationalism as particular cultural constructs (2020: 23). According to him, the nation entails a sense of communion or “horizontal comradeship” between people who often do not know each other or have not even met and for which countless people have willingly sacrificed themselves (2020: 24-26).

On the other hand, arguing that nationalism preceded nations like Gellner, Eric Hobsbawm considers nationhood and nationalism as concepts of recent times and evaluates them within the framework of political interest. He points out that nations are formed by artificiality, invention and social engineering (1995: 24). Thus, belonging to the modern period, the concept of nation draws its legitimacy from rituals and symbols that are linked to the past and from certain values and norms of behavior that are continuous, namely “invented traditions” (Hobsbawm, 2006: 2).

Another approach is the ethno-symbolist approach of Anthony D. Smith, whose main argument is the respect for ethnic identities and histories in the birth of modern nations. The British thinker assumes that ethnic components are found in many national communities and draws attention to the existence of ethnic elements which constitute the cement of modern nations. According to Smith, ethnicity is made up of common ancestral myths and similarities, shared memories, cultural traits, ties to the homeland, and solidarity among elites (2013: 26). Moreover, referring to the relationship between nationalism and religion, Smith sees nationalism as closer to the concept of “political religion”, rather than seeing it as merely a worldly culture. Indeed, the ceremonies commemorating the “glorious dead” or the “martyrs” who sacrificed their lives for countries exemplify this understanding, which is shaped by the concepts of death and immortality, while these places build the “sacred communions of citizens” (2013: 56-57). In this respect, we see that the opinions of Anderson and Smith are similar. Coming back to Anderson, the proximity of the nationalist imaginary to the religious imaginary is explained through the concepts of death or immortality, as evidenced by the tombs of the Unknown Soldier (2020: 28).

Parallel to Smith and Anderson, Carlton J. H. Hayes asserts that modern nationalism has acquired a religious character. The effect of nationalism on the masses as a substitute for religious belief has been shaped by the construction of national practices that supersede universal Christian religious practices and carry Christian heritage. Indeed, the attribution of the ideal of immortality to nation-states, the acceptance of the nation as enduring, and the magnificence of the immortality of the individuals forming the nation were inspired by Christian heritage. Furthermore, modern nationalism has created a set of ritual practices through national symbols. Hayes illustrated the symbols of these rituals with national flags (greeting, held halfway up their masts, hoisted), which became objects of worship. Moreover, national anthems, temples, holidays and heroes have been defined as the “religious attractions” of modern nationalism (2010: 192).

The ideas of nation and nationalism are also important in the revelation of the feminine condition of the time. The nation was the construction of the male imagination, and women

could not go beyond being symbolic objects (Sancar, 2014: 54). On this point, Nira Yuval-Davis stated that the nationalist discourse treats women as carriers of the community with the role of motherhood and as individuals of the national community. She adds that the role of producers of nations biologically, culturally and symbolically is given to women (2010: 19). Joane Nagel, on the other hand, said that masculinity and nationalism are articulated with each other. By definition, nationalism is closely tied to the state and its institutions, and most state institutions (like the army) have historically been dominated by men (1998: 248-249). Thus the role of protectors of the nation is attributed to men. Similarly, according to Tamar Mayer:

*“The nation is comprised of sexed subjects whose “performativity” constructs not only their own gender identity but the identity of the entire nation as well. Through repetition of accepted norms and behaviors – control over reproduction, militarism and heroism, and heterosexuality – members help to construct the privileged nation; equally, the repetitive performance of these acts in the name of the nation helps to construct gender and sexuality.”* (2000: 5).

In short, the concept of the citizenship, which has been shaped since antiquity and has become more clear with the emergence of nation-states with definite borders, has gained the meaning of belonging to the community of citizens through homogeneities such as language and race. The concept still maintains this meaning today.

## **2.2. The Concept of Citizenship in Islam**

While citizenship has been defined in terms of political identity and loyalty in the West, its primary definition in the Muslim world has been shaped by religion (Lewis, 1998: 18). Citizenship in the Islamic states has not been based on the distinction between citizen-foreign but Muslim and non-Muslim. Although Islam does not define a state with definitive style and borders in its holy book, the Quran, it has revealed the basic principles of an Islamic government or state in line with its teaching that the purpose of the creation is not only for worldly life (Surah Ali 'Imran 3/104). Indeed, the first Islamic state was established in the form of a city-state in 622, and Mohammed, the Prophet of Islam, assumed the duty of the head of state by using political authority in addition to preaching the religion of Islam (Lewis, 2013: 68).

Written in the first Islamic State with the collective participation of the local people, the Constitution of Medina is significant in terms of showing that the citizenship status in Islam goes back to 622. This text, also known as the first written legal agreement of all times that envisages political participation on the basis of equal rights, was signed between Muslims, Jews, and polytheists. It legally guaranteed pluralism by recognizing religious, legal, and cultural autonomy (Bulaç, 1995: 11). The Prophet of Islam used an egalitarian discourse in his duty to preach Islam and did not make any discrimination among people as the Qur'an requires (Ash-Shura 42/15 and Al-Anbiya 21/109). Indeed, Muslim believers, who formed the basis of the unity of the faith, are accepted as a single ummah<sup>7</sup> (Surah Al-Anbiya 21/92). Islam acknowledges the taqwa as the criteria of privilege deny race, color, or hereditary characteristics as a source of superiority (Surah Al-Hujuraat 49/13), and does not grant a privilege to any community. In this respect, according to the general perception, tribalism

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<sup>7</sup> The Arabic word ummah (أُمَّة) means nation.

strengthens ideologies that threaten the political unity of Islam and causes internal conflicts among Muslims (el-Mevdudi, 2016: 317-318).

As in modern states, there are rules that regulate the relationship between the ruler and the ruled in the Islamic administration. For example, the duties of loyalty and submission to the administration are important for the stability of the state (Kamali, 2013: 161-162). The Qur'an commands us to obey Ulu l-Amr<sup>8</sup> as well as Allah and the Prophet (An-Nisâ 4/59) and defines this obedience as the duty of the citizen in the establishment of the Islamic order. The ruler of an Islamic state must believe in and adhere to the Islamic order in order to rule according to Islamic rules. According to the arguments, a person who does not possess these qualifications cannot become the head of state or government (el-Mevdudi, 2016: 727). It is also underlined that citizens do not have to obey an illegitimate government that violates the provisions of the Qur'an (Asad, 1980: 76). It is recognized that citizens have the right to warn the ruler if the ruler deviates from Islamic procedures. In this scope, this duty obliges citizens to supervise the administration and remind the ruler of the limits imposed by the law in case the administration deviates from Islamic principles (el-Benna, 2018: 39-43). In addition to these duties, citizens also have military service obligations. This obligation is related to the concept of jihad in the Islamic state (Asad, 1980: 70). As the subject of many verses in the Quran; this concept has several meanings, such as fighting against non-Muslims, one's nafs (ego) and military, economic and cultural wars. Therefore, the state and citizenship in Islam are shaped by the principles of the religion of Islam and determined by the inseparable coexistence of Islam and state administration, as well as the Quranic principle of "Enjoining (what is) right and forbidding (what is) evil" (Tawba 9/71).

The status and rights of women in Islam should also be addressed under the heading of citizenship in Islam. Although the question of women is considered according to the Quranic verses and the hadiths of the Prophet Muhammad, it is shaped according to different approaches.<sup>9</sup> For example, according to the approach that defines women within the family and according to feminine nature, the main duty of the Muslim woman is child rearing and household maintenance. Muslim women should be educated in accordance with her gender, work in commercial fields that suit her gender, should neither compete with men in outside jobs nor do such jobs (el-Benna, 2017: 376; el-Mevdudi, 2016: 633; Vecdi, 2007: 53-54). Moreover, she doesn't have the right to hold public office and should not be involved in politics. According to the opposite approach, based on the Quranic principle quoted above (Tawba 9/71), both man and woman are responsible for this common duty without being favored (Karaman, 1997: 277). Furthermore, according to the evidence presented by the scholars of the Ahl as-Sunnah, there are no obstacles for women to gain access to public office (Hamidullah, 1980: 387).

The criteria of the hijab and the manner of veiling determine the place of women in society. For example, it is explained that the Qur'an (Surah An-Nur 24/31) prescribes women to cover their hair and neck (Ateş, 1998: 16). The hijab is seen as a "material" obstacle that ensures the independence of Muslim women and protects them from evil and masculine

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<sup>8</sup> Ulu l-Amr means those who have the authority to give orders and who are in this position, that is, the chiefs.

<sup>9</sup> The place of women in Islam is explained with different approaches on various grounds ranging from the hijab to her place in the family and society, from inheritance, divorce, testimony to education and public rights. Due to the limitations of this study, issues falling within the scope of Islamic law such as inheritance, divorce and testimony will not be mentioned.

domination (Vecdi, 2007: 132). On the other hand, the verse in question traces the general lines of the hijab; it is also argued that the details regarding the hijab are fully bound up with customs and traditions, that the word hair is not included in the surah that the Qur'an prohibits men and women from exposing their sexuality and that both genders must protect themselves against the opposite sex (Bilgin, 1997: 38). Finally, contrary to the view that the hijab protects woman from evil (see Vecdi, 2007), it is claimed that the hijab causes the isolation and exclusion of woman from society in many areas, from education to economics (Haddad, 2007: 148-151).

### **3. Construction of the Acceptable Citizen in Primary School Textbooks**

The construction of acceptable citizens takes place when students, who are seen as the guarantee of the regime, receive citizenship education in schools. Educational policies on the basis of the ideology of the state and the school where these policies are implemented are at the center of the construction of the acceptable citizen community loyal to the state.<sup>10</sup> The school is an institution that has a unique culture in which a sense of we prevails, and it imposes the ideology of the state through its educational curricula, especially since the emergence of the modern state (Schnapper, 1998: 150). It reflects a political community space where students are treated equally as citizens of the state (Waller, 1932). In this context, the school assumes the role of the transmitter of the state ideology through its citizenship education for the construction of citizens targeted by the state, and in this sense, it represents one of the ideological apparatuses of the state, according to Louis P. Althusser (1991: 44-45). Similarly, Michel Foucault (2014: 71) also explains educational institutions as the places where the power process (like reward and punishment) is developed through communication (orders, advice) organized between the student and the teacher.

Claiming that the former system was under the influence of Western culture, the Revolution regime reorganized all levels of the educational system, from primary school to university, on the basis of the religious curriculum and ended the co-educational practices in Iran (Bayat, 2015: 100). In accordance with the ideology of the Revolution, the Ministry of Education has based the education program on the following grounds: Teaching the fundamentals of the religion of Islam and Ithna-'ashariyyah, ensuring adherence to Islamic rules, raising moral and virtuous students in line with Islamic values, creating political awareness based on the principle of Velayat-e Faqih in order to contribute to the country's politics in various fields, developing a sense of unity among Muslims, protecting the family institution in line with the Islamic teachings, and raising individuals who obey and respect the law (Özlük, 2017: 733-735). The findings of the examination of the textbooks, which are taught to students who started their education life at the age of six and will receive education at the primary school for six years, will be discussed under the titles Shiite-Muslim Citizen Conception and Shiite-Iranian Citizen Conception.

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<sup>10</sup> This role of education and school is based on the construction of the modern child in the Age of Enlightenment and the understanding of the child as a citizen. With the genesis of the modern state, the link between education and citizenship is established and children are considered by the state as the citizens of the future. According to Rousseau, who formulates this thought very clearly, the school is the place where the rules of society operate and where the spirit of equality and fraternity spreads (Heater, 2007: 110). The pedagogical theory of the French thinker is also linked to the gender dimension of citizenship. While stating that men and women are not and should not be the same in character or temperament, Rousseau points out that men and women should receive education specific to their own sex. In his book *Emile*, the man Emile brings home the bacon, while Sophie learns to be a good wife and a good mother (Tannenbaum, 2021: 259).

### 3.1. Shiite-Muslim Citizen Conception

According to the teachings of the textbooks, an individual in Iranian society must primarily be a person who obeys Islamic rules both in his private life and the public sphere. In addition, one should also have a Shiite-Muslim identity which requires being aware of the basic teachings of Ithna-'ashariyyah, taking the lifestyles and words of the imams as well as Prophet Mohammad as an example, and comprehending who Ahl al-Bayt were.

The first finding classified under this title is related to the construction of the Muslim individual in line with the main religious knowledge. In accordance with what have been stated previously – the Qur'an commands citizens of the Muslim community to obey Ulu l-Amr as Allah and his Prophet and it is their duty to establish an Islamic order – the books teach concepts such as the holy book of Islam and Muslimhood, emphasize being a good and moral individual who cares about the rules of etiquette, represent the Prophet of Islam as a role model, and underline that the Prophet was not only a person who preached religious teachings as the messenger of Allah but also a role model that should be taken as an example in all areas of life (Grade 5, Heaven's Gifts Islamic Education and Training: 30-34). Furthermore, as noted before, Muslim citizens have military service obligations related to the concept of jihad, which is a war against military, economic and cultural invasion or exploitation and, above all, against one's nafs. Thus, students are taught how to dress and spend their spare time in line with the main religious knowledge. Suggested leisure activities include attending religious ceremonies, attending Qur'an courses, helping people, visiting relatives, and taking responsibility in institutions such as the Basij Organization (Grade 6, Social Studies: 72). A text titled The Clothes We Wear Should Be Conforming to Our Religion indicates how to dress by stating that *"clothing should provide proper cover for a Muslim man or woman. Obedience to the hijab and chastity is an indication of one's solemnity and dignity."* (Grade 6, Social Studies: 85). Ultimately, it is also emphasized that a Muslim individual always sees the power of Allah in historical narratives. For instance, the roles of Allah and the prophets are often highlighted while teaching the development of the first villages and cities as well as the improvement of humanity:

*"Today, when we look at artifacts from thousands of years ago, we realize that people did not have the tools they have today, and therefore, they faced many difficulties in life. However, they were able to overcome the difficulties because Allah has bestowed great blessings on humans compared to other living things. He has endowed people with intelligence so that they can find solutions to the difficulties they face. God has created humans with capable hands. In addition, prophets were sent to guide people to a better way of life."* (Grade 4, Social Studies: 32).

The second finding regarding the Shiite-Muslim citizen conception is the family, which is obliged to set an example for their children and continue the citizenship education that the students receive outside of school. The textbooks put an emphasis on the family on the basis of Islam, mention the relationship of respect and love between family members, and report that grown-ups become role models for students by reading the Qur'an and praying (Grade 3, Social Studies: 45).

The third finding is the construction of the acceptable woman after the conceptualization of the ideal family that starts in the third grade of primary school. 9-year-old and third-grade girls are considered to have reached the age of worship, so *Jashn-e Taklif* ceremonies are held at schools for them. In the text regarding these ceremonies, there are many elements that

encourage girls to wear a hijab. For example, to celebrate the girls who turn the age of worship, school principals send a greeting card in which they state: *“Children, look at each other. See how beautiful and cute you seem in these hijabs. Allah loves you very much when he sees you in these beautiful clothes and hears your words at the time of prayer.”* (Grade 3, Heaven’s Gifts Islamic Education and Training: 39). This training, which continues at home, is reinforced by the image of a girl named Parvane covering her hair with a colorful scarf (Image 1). In Image 1, the message that Islam commands women to veil is clearly given. Moreover, within the framework of Islamic teachings, the mother assumes the role of bringing up her daughter within the family in accordance with religious precepts. The texts also clearly teach the main principles of wearing a hijab and the concepts of mahram and non-mahram.<sup>11</sup>

Image 1: Parvane Wears a Hijab and Smiles at Herself in the Mirror



Source: (Grade 3, Heaven’s Gifts Islamic Education and Training: 66, <http://chap.sch.ir/books/4834>)

The lives of female figures, who are significant in Islam and Shiism, are also presented to girls as role models. In particular, the texts describe Zaynab, who is an important figure, especially in the Shiite mourning literature, as a headstrong person against Yazid (Grade 3, Heaven’s Gifts Islamic Education and Training: 30), who represents the cruel administration after the Battle of Karbala. It gives the message to the students that women should not remain passive against such administrations. The female prototype, who is faithful to her faith and actively fights against the tyrant and irreligious people, has also been associated with the recent history of Iran. For example, it is possible to see narratives and images in the books that show the backstage helps of women and girls who were not on the frontlines in the war with Iraq (Image 2). Image 2 also presents the state’s perspective on the relationship between gender and nationalism. In the war on Iraq, women are coded as figures doing the work in the background, rather than as warriors and subjects protecting the state. This corresponds perfectly to the approach of feminine nature, which attributes to women roles only within the home and according to their nature. It is also this same approach that keeps women away from possible dangers coming from the opposite sex or a non-Muslim and anti-Shiite enemy against which they could not fight because of this nature issue. This also agrees with what Yuval-Davis (2010) and Nagel (1998) announced above, respectively that the nationalist discourse treats women as carriers of the community with the role of motherhood and as

<sup>11</sup> *“Girls, it is obligatory to cover your mahram parts. But you don’t need to cover your face. Likewise, you do not need to cover the area from wrists to fingers. People such as grandfathers, fathers, brothers, and uncles are not mahram. But men such as your sister’s husband, uncle’s son, and aunt’s son are not mahram for girls.”* (Grade 3, Heaven’s Gifts Islamic Education and Training: 68).

individuals of the national community and that the role of protectors of the nation is attributed to men as masculinity and nationalism are articulated with each other.

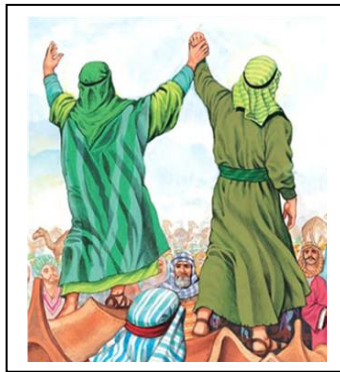
Image 2: Backstage Helps of the Girls and Women During the War



Source: (Grade 6, Social Studies: 123, <http://chap.sch.ir/books/4849>)

The fourth finding under this title is related to Ali's prominent position and exalted personality in Islamic society in line with the basic teaching of Shiism. The Prophet Mohammad's statement that "verily he whom I am a leader over, Ali is his/her leader" is among the proofs presented by Shiites to show that Ali was determined as the heir of the Prophet in the event of Ghadir Khumm<sup>12</sup>, which took place on Dhu al-Hijjah 18, 10 (March 17, 632). This event has been the subject of textbooks many times, and presented with an image showing the Prophet raising the hand of Ali (Image 3).

Image 3: The Prophet Raising the Hand of Ali in Ghadir Khumm



Source: (Grade 5, Heaven's Gifts Islamic Education and Training: 59, <http://chap.sch.ir/books/4843>)

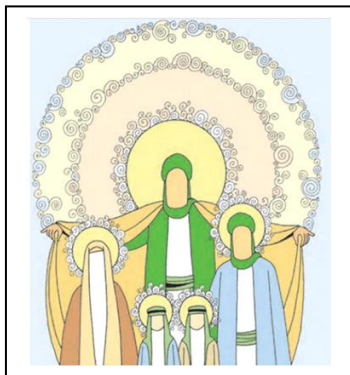
In addition to presenting many examples supporting Ali's right to the caliphate<sup>13</sup>, several texts teach students about Prophet Mohammad's fondness for Ali and Ali's wife, Fatima, as

<sup>12</sup> Shiites show evidence that Ali was appointed by the Prophet as an imam and interpret this evidence, which composes of *hadiths* and verses. One of these pieces of evidence is the belief that the Prophet stopped at a place called Ghadir Khumm while returning from the Farewell Pilgrimage and gathered the Muslims and appointed Ali as his deputy (Tabatabai, 2004: 121).

<sup>13</sup> In another text, it is stated that: "The Prophet of Islam introduced his successors and suggested leaders to the people many times: We read in a hadith that: After me, my successor is Ali, and after him my two grandchildren,

well as his grandchildren, Hasan and Husayn. For instance, another text titled Conquerors Without an Army is one of the narratives which tells that the Prophet went to exchange he made with Christian scholars from Najran with his favourites and relatives, namely Ali, Fatima, and his grandchildren Hasan and Husayn (Grade 6, Teaching the Quran: 70-73). This event is illustrated by an image in which the Prophet took them under his cloak (Image 4).

Image 4: Prophet Mohammad Taking Ali, Fatima, Hasan, and Husayn Under His Cloak



Source: (Grade 6, Teaching the Quran: 72, <http://chap.sch.ir/books/4848>)

The text emphasizes that although the Prophet appointed Ali as his deputy in Ghadir Khumm, Abu Bakr, the first caliph according to Ahl as-Sunnah, received allegiance from a group of people, and it was an injustice done to Ali. Moreover, it is stated in the texts that during the administration of Umar, the third caliph, according to the Ahl as-Sunnah, the people were subjected to oppression by some rulers, whereas Ali lived a simple life and governed with justice (Grade 5, Social Studies: 92.) This reminds us of the words of el-Mevdudi (2016): The ruler of an Islamic state must believe in, adhere to and ensure the Islamic order. The citizens of the Muslim community do not have to obey a leader or a government that violates the provisions of the Qur'an (Asad, 1980) and therefore does not demonstrate fair administration. This once again justifies Ali's right to the caliphate at the expense of the supposedly unjust caliphs.

The fifth finding examined under the Shiite-Muslim citizen prototype is the glorification of Ahl al-Bayt and imams. Students thought about the member of the Ahl al-Bayt, and what the Prophet said about Ali, Fatima, Hasan, and Husayn: *"My God, these four people are my Ahl al-Bayt. Their friends are my friends, and their enemies are my enemies."* (Grade 2, Heaven's Gifts Islamic Education and Training: 46). There are many stories that tell the characteristics of the members of the Ahl al-Bayt and the imams to students. The themes of the texts also include how the nine imams after Ali, Hasan, and Husayn, who were the three imams according to the Imamate, showed the true path to the people and guided them with their wisdom, and connected with their followers. These examples indicate the connection between imamate and nubuwwat, that is, the teaching that imams have characteristics similar to the prophets sent by Allah.

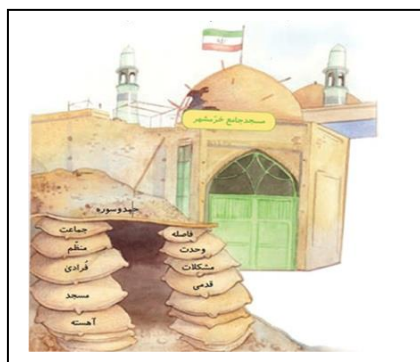
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*Hasan and Husayn. Then, Husayn's nine children are his successors, respectively. The last of them is the Mahdi, who is invisible to people."* (Grade 6, Heaven's Gift Islamic Education and Training: 36).



The last finding under this title is the mosque, which plays the role of the central unit of the neighbourhood, where the sense of us is constructed and preserved. The textbooks do not portray the mosque only as a place of worship but also as a place where members of the society come together for political, cultural, and social activities, as well as for discussing common problems (Grade 4, Social Studies: 6). It has also been an indicator of independence against the external enemy created by the regime. In Image 5, it is seen that the mosque, which is a place of religious worship, has also become a national symbol with the flag flying over it. In a narrative about the pen pals, Palestinian student Khalid and Iranian student Mustafa talk about the mosques of their countries, and Palestinian Khalid makes the following statements in his letter: “(...) Masjid al-Aqsa is occupied by the enemies of Islam today. (...) They do not allow Muslims to pray and worship in this mosque. (...) In your letter, you wrote that there is a prayer room in your school. This is very nice, but unfortunately, our school was destroyed by the enemies of Islam.” (Grade 4, Heaven’s Gifts Islamic Education and Training: 20).

Image 5: Jameh Mosque of Khorramshahr



Source: (Grade 4, Heaven’s Gifts Islamic Education and Training: 26, <http://chap.sch.ir/books/4839>)

This text points out the sense of unity and solidarity among Muslims through its emphasis on *occupier Israel* and by using the motives of threat and danger. Immediately after this text, the book shows an image of the Jameh Mosque of Khorramshahr with the Iranian flag waving on the top (Image 5). This image refers to Iranian struggle for independence against Iraq through the mosque.

### 3.2. Shiite-Iranian Citizen Conception

After the principles of the religion and sect to which they belong, the national historical narratives are used in order to teach the Iranian identity to primary school students. The national history narratives, enriched with Shiite elements, also reveal the conception of the acceptable and the other through examples from the history of Iran before and after the adoption of Islam. We will see in the findings below that the other, namely the enemy determined by the Islamic regime, is, among others, sometimes Israel, sometimes Yazid or even the Pharaoh, Shah’s regime, the opponents of the official ideology, in other words, the non-believers. All these potential enemies are comparable according to the regime. Furthermore, the unity of national and religious symbols in Persian-Shiite nationalism is striking. Thus, the phenomenon of “political religion” expressed by Smith (2013) emerges in the example of Iran.

The first finding under the title of Shiite-Iranian citizen conception is that the Battle of Karbala has become a paradigm in terms of Michael Fischer’s theory (2003: 21-22). The textbooks cover the Battle of Karbala, which was caused by the question of whose caliphate was legitimate, Muawiya or Ali, within the framework of the theme of Husayn, who followed the path of the Prophet and fought against the irreligious and undesirable ruler Yazid: *“The Imam and his followers stood against countless enemy soldiers in Karbala with their faith. The war, which started in the morning, continued until the afternoon. That day, Imam Husayn and his great followers fought bravely until their last breath. Their courage in this war is unmatched in world history.”* (Grade 5, Social Studies: 94-95).

The textbooks explain that the Battle of Karbala, which took place on Muharram 10, turned into a ritual in which martyrs are commemorated with mourning ceremonies every year, and it is presented with the image of children wearing headbands with the Oh Husayn writing on them and carrying a banner with the phrase that: *“We (Ahl al-Bayt of the Prophet) do not deserve to be humiliated and despised”*. (Image 6).

Image 6: Children Carrying a Banner with Humiliation is Far From Us (هیهات منا الذله) Writing on It



Source: (Grade 3, Heaven’s Gifts Islamic Education and Training: 29, <http://chap.sch.ir/books/4834>)

Commemoration of this Battle every year transfers feelings of victimization, anger, and martyrdom from generation to generation. This is an example of “invented tradition” as called by Hobsbawm (2006) to bind a nation together. Also, the feeling of being excluded due to the oppression as well as the emphasis on the common struggle against Yazid of every era, gets stronger.

Another finding in the textbooks is the expectation of the people in the narratives for a savior, like Mahdi and Khomeini. After the narration of the eleven imams, the Twelfth Imam Mahdi, who has not appeared yet, is particularly emphasized through images, stories, and poems. The texts depict Mahdi as a savior expected by the whole world, and his arrival is identified with the start of spring, especially for the suffering children who have no home or who are in war zones (Image 7).

Image 7: The Start of Spring and the Happiness of Children When Mahdi Arrives



Source: (Grade 4, Heaven's Gifts: Islamic Education and Training: 83, <http://chap.sch.ir/books/4839>)

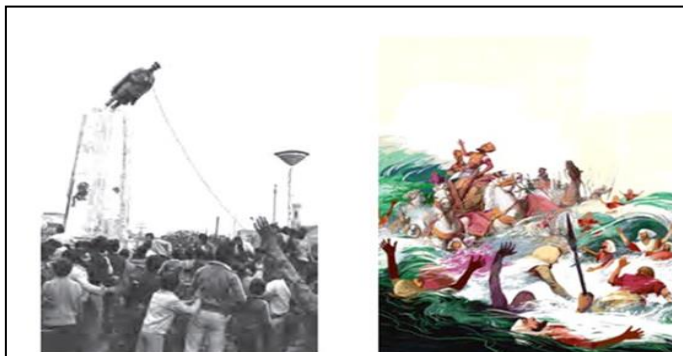
This narrative, which is based on the belief in the Mahdi, is embodied in the depiction of Khomeini as the leader who overthrew the Shah's anti-people and anti-religious government (Grade 6, Heaven's Gifts Islamic Education and Training: 48), which is parallel to the assumption that Mahdi will rid the world of evil and cruel administrations.

The third finding, classified under this title, is related to the concept of other and the similarity established between the history of Islam and the history of Iran through this concept. The formation of the other against the acceptable, supported by the official ideology of Iran, has been discussed in the books through the actors who do not believe in God or do not observe God's orders during different periods. Accordingly, prophets of the monotheistic religions, such as Abraham, Moses, and Mohammad occupy the center of this narrative as acceptable citizen role models. The imams of the Ithna-'ashariyyah sect, including Ali, Hasan, and Husayn, in addition to Khomeini, the leader of the Islamic Revolution, are also presented as the representatives of the acceptable. When we look at the concept of the other, on the other hand, there is the cruel ruler Nimrud, who threw Prophet Abraham, the idol-breaking hero, into the fire, and there is also the God-King Pharaoh against the Prophet Moses, who created miracles with his staff. The end of both Nimrod and Pharaoh is the same: Both of these two cruel and rebellious rulers believed in Allah at the end of the text by stating that "Truly Abraham has a great and mighty God who saved him." (Grade 2, Teaching the Quran: 100), and "It seems that the God of Moses is right. I must believe in him." (Grade 5, Teaching the Quran: 92). While the lives of the imams are presented after the lives of the prophets, their troubles and deaths are also included in the books. Moreover, the texts also emphasize the teaching that imams, who were subjected to stalking and oppression throughout history, did not give up in the face of the other, and they were martyred.<sup>14</sup> The Shah and the regime, on the other hand, represent the other of the recent past:

<sup>14</sup> For example, for Ali's death, it is stated that "Amir al-Mu'minin was martyred by one of the enemies of Allah's religion while he was praying in the mosque" while the death of Hasan is described as follows "Our second Imam fought against the oppressors and was eventually martyred by them." Likewise, for the death of Husayn, it is emphasized that "There was an oppressive government called Yazid during the reign of Imam Husayn. He was persecuting Muslims and disobeying the orders of Islam. Our third Imam fought Yazid and was martyred on the day of Ashura." (Grade 2, Heavens's Gifts Islamic Education and Training 60-70). It has been stated that before the Twelfth Imam Mahdi is born, he is perceived as a threat by the Abbasid caliph, and therefore attempts were made to prevent

*“The Shah and his soldiers had always said that the Iranians are not capable of doing great jobs and cannot be independent. As if we should always depend on other powerful states! The traitor Shah always took orders from the USA and powerful countries. The Shah did not even allow us to practice Islamic rules in public. (...) There was no news about the religion of Islam and the teachings of the Qur’an on radio and television. (...) No attention was paid to religious values, and instead of promoting hijab and moral values, corruption and exhibitionism were advertised.” (Grade 5, Heaven’s Gifts Islamic Education and Training: 93).*

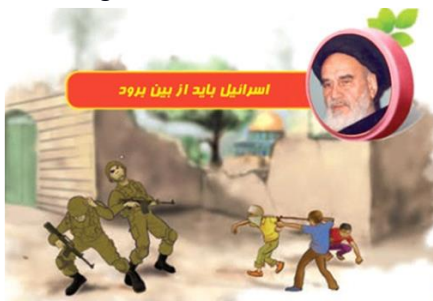
Image 8: Comparison of the Bringing Down of the Shah’s Statue and the Drowning of the Pharaoh and His Soldiers



Source: (Grade 6, Teaching the Quran: 84, <http://chap.sch.ir/books/4848>)

The books marginalize the representatives of the regime before the Islamic Republic, the Shah, and his regime, on two grounds: While the former regime could not be independent since it made Iranians dependent on foreign powers and took orders from them, the administration was irreligious because it did not observe the principles of the religion. The faithlessness of the Shah is put into the same category as the Pharaoh. Accordingly, the images showing that the statue of the Shah is brought down and that the Pharaoh is drowning are presented side by side, reinforcing the message that the Pharaoh and people like him ended up in the same place (Image 8).

Image 9: Khomeini’s Statement That Israel Must Be Destroyed and Palestinian Children Throwing Stones at Israeli Soldiers



Source: (Grade 5, Heaven’s Gifts Islamic Education and Training: 96, <http://chap.sch.ir/books/4843>)

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birth. The Abbasid caliph is likened to the Egyptian pharaoh. (Grade 5, Heaven’s Gifts Islamic Education and Training: 82).

On the other hand, Khomeini appears in the books as a leader who is full of faith, knowledgeable, brave, not afraid of the Shah and world powers, and breaks idols (Grade 5, Heaven's Gifts Islamic Education and Training: 95). In addition to the internal enemies representing the former regime, it is seen that the subject of external enemy is also discussed in the books. Israel is underlined frequently with regard to the external enemy, and Khomeini's statement that "*Israel must be destroyed*" is included in texts with an image (Image 9).

The fourth finding regarding the identity of the Shiite-Iranian citizen is the identification of the month of the 1979 Revolution with spring in the textbooks, on the axis of liberation from the difficult and painful years and the enemy. This theme has been presented to students since the first grade with a spring image stating that "*The Imam has come*" which represents the return of Khomeini to Iran (Image 10). In this context, Bahman 22<sup>15</sup>, as a national holiday and a tool for the construction of a new society, has an important place in the integration of individuals with the targeted social identity.

Image 10: The Airplane with Which Khomeini Returned to Iran Scattering Flowers



Source: (Grade 1, Persian: 97, <http://chap.sch.ir/books/4970>)

Another finding found in the textbooks is that the theme of national independence, which is taught through the subjects of the process leading to the revolution and the Iran-Iraq War, glorifies a death-loving martyrdom cult (Khosrokhavar and Roy, 2013: 14) with references from the Quranic verses and Islamic history. The path and struggle of Imam Husayn, especially on the basis of the protection and survival of the holy land, is blessed and presented to the students as an acceptable model: "*The martyrs followed the path of Imam Husayn and defended our Islamic country until the last drop of their blood. They have great rewards in the*

<sup>15</sup> One of the example texts concerning the anniversaries in the textbooks is as follows: "*I took the microphone and started my work. Sayid took his camera and came with me. I asked a boy, who is my age: 'What day is it today?' (...) 'Day of declaring hostility to tyrant and oppressing states and fighting Israel and the USA.'* A smiling elderly man was holding a large picture of the Supreme Leader in his hand. I approached him and asked him why he was smiling. '*Seeing all this enthusiasm, excitement, peace, and unity reminded me of the unity and solidarity of the people in Bahman 1357.'* (...) A veteran sitting in a wheelchair caught my attention, and I went to him and asked him: '*Why did you come to this march in your difficult situation?' 'To show that I am ready to announce to the whole world that I always listen to the orders of the Supreme Leader and that I am here.'* I said to a lady who is moving with a baby carriage: '*Why did you come here in this cold winter weather?' She put her hands to her heart and said, 'Because the revolution is in our hearts!' A mother with a framed photograph of a martyr in her hand saw us and came towards us and said: 'I dedicated my son to Islam and the revolution. Thank God, millions of believing and hardworking young people continue his way today.'*" (Grade 5, Heaven's Gifts Islamic Education and Training: 104-105).

sight of Allah. They gave their lives so that the Islamic homeland could stand. Their sacrifice humiliated the enemies of Islam. We visit them to remember and learn from them.” (Grade 6, Heaven’s Gifts Islamic Education and Training: 86-87).

Furthermore, the images showing the Conquest of Mecca and the Liberation of Khorramshahr are shown in books side by side. Both struggles share a common theme in the books that they took place against irreligious people in the name of Islam and that Allah helps the Islamic warriors (Image 11).

The emphasis on national independence is also intensely covered in the books through subjects of revolution led by Khomeini against the colonial states and the Iran-Iraq War. The narrative that the war was imposed on Iran, and the attacks were launched by Iraq is discussed in the textbooks with the concepts of Imposed War and Holy Defense. This war is discussed with an emphasis on martyrdom, struggle against the oppressor, and independence. As Anderson (2020) pointed out, children are persuaded to die for the good of the country in accordance with the national hero symbol. These concepts are also supported by texts in which child martyrs are introduced and presented as exemplary models. For example, 13-year-old Mohammad Hossein Fahmideh aimed to neutralize the Iraqi forces tank by throwing himself under the tank with a grenade in his hand in Khorramshahr (Grade 3, Persian: 51). He was martyred while his body was dismembered. As seen in the given examples, it is aimed to construct an identity that is greatly enriched with Shiite motives in the textbooks, and this identity construction is expected to serve patriotic feelings by associating it with modern history.

Image 11: Comparison of the Liberation of Khorramshahr and the Conquest of Mecca



Source: (Grade 6, Teaching the Quran: 14, <http://chap.sch.ir/books/4848>)

The last finding under this title is the main elements that construct the national identity in the conception of Shiite-Iranian citizenship. For example, the primary emphasis in the narrative of the pre-Islamic historical period is that Iran has a long history dating back 4000 years. The text underlines the Aryan race and states that “Iran means the land or region of the Aryans. Aryans are noble and royal. The Aryans are three groups: Medes, Persians, and Parthians.” (Grade 4, Social Studies: 46-47). Thus, as Smith (2013) pointed out, we see that the Iranian state aims to build a nation by referring to ethnic identity and the past.

The narrative of post-Islamic Iranian history points to a new era after Iran joined Islamic lands. In this narrative, Iranian states are highlighted with activities in the fields of culture, science, and art. For example, Rudaki, known as the father of Persian poetry, is mentioned as

one of the poets of the Samanid period, which was one of the Iranian states that gave importance to the Persian language (Grade 5, Social Studies: 101). While covering the scientific developments of Muslims, it is emphasized that Iranians have contributed most to the field. In this scope, Zakariya Al Razi and Abu Ali-Sina are highlighted as Iranian Muslims who contributed to the field of medicine, while Khwarizmi and Khayyam come into prominence in the field of mathematics, and Abu al-Biruni in the field of astronomy (Grade 6, Social Studies: 47-50). The prominent indication of this perception is seen when Prophet Mohammad's hadith, which emphasizes a virtuous and chosen people in the sight of Allah, is given as an example in the books: *"If knowledge is in the star of Soraya, people from the land of Pars will go and find it."* (Grade 6, Teaching the Quran: 55).<sup>16</sup>

In addition to these, the notion of homeland and what it means to be Iranian are explained by referring to national signs. In this context, information about the constitution, national anthem, flag, official language, and the calendar are taught to first-grade and second-grade students at the basic level. The construction of the eternal nation with symbols such as the national anthem, the national flag and the official language shows us (see Hayes, 2010) that modern nationalism replaces religious practices. In the following grades, the importance of the mentioned insignia is emphasized. By stressing unity and solidarity through all these symbols, the Iranian nation is identified with family members living in a large family called Iran. It is highlighted that being Iranian means unity and solidarity despite regional differences: *"Iran is our homeland. We love our Islamic homeland. Our country is large, and it has seas, wide mountains, and plains. We love the people of our country. The people of our country, wherever they are, are Iranians. We love Iran and Iranians."* (Grade 1, Persian, p: 79). The emphasis on the superiority of the nation, seen especially in modern nation-states, comes forwards with reference to the founding elements of national identity, such as national symbols, national holidays, and official language.

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<sup>16</sup> Also, to the left side of this verse and hadith, there is a picture of a nuclear missile.

#### 4. Conclusion

In the courses where the textbooks entitled *Heaven's Gifts* and *Teaching the Qur'an* are taught, basic religious information is given to students, namely the teaching of a student profile who knows Allah and realizes the blessings He has created in nature, reads the Qur'an and knows the virtues of the surahs, recognizes the prophets and understands their miracles, recognizes the imams and love and respects them, and acknowledges their behavior as a role model. The Social Studies and Persian textbooks, on the other hand, design an acceptable individual that will ensure the survival of the Islamic Republic, recognize its homeland with these teachings, learn its glorious history, take pride in the achievements of its nation in the past, and take the struggles of the martyrs as an example. These elements in the books are narrated through texts in the form of instructive annotations, stories, and poems for which the rote-based technique is used.

The framework of the acceptable citizen prototype on the basis of Shiite-Muslim and Shiite-Iranian identities comes forward through prophets and imams witnessing the miracles of Allah, and the Supreme Leader Khomeini, who followed their path, while it is also shaped by the emphasis of being Persian. In this context, common signs that construct a nation are covered in the books, and death is encouraged as a sacred act, both nationalistically and religiously, by frequently referring to the concept of martyrdom. The other of both identities is not limited to the history of Islam and Iran. Instead, it is defined on a legitimate basis dating back to the rulers who stand against the prophets of the monotheistic religions.

Therefore, Iran's construction of acceptable citizenship includes many modern approaches, considering the period from ancient Greece to the modern state. The concept of citizenship, which is enriched by the concept of *ummah* in Islam, has been a notion that preserves both its sectarian and ethnic identity in Iran. In this context, the strongest bond between the Supreme Leader and the citizens is religion and sect under the umbrella of religion. According to the findings, it is possible to state that the citizen of the Revolution, the acceptable citizen of Iran, is faithful to the belief of the Twelve Imams, sets an example to the oppressed Muslims with his/her own struggle and courage, fulfils his/her civic duties to the extent desired by the regime in order to ensure the legitimacy of the regime, becomes a member of the society who is closely connected to the other members under the umbrella of common values by serving the ideology of the Revolution, instead of being an individual on the basis of rights.



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## Debates Over the Trilemma and Dilemma Hypotheses within the Framework of Monetary Policy Independence Following the 2008 Crisis

Nagehan Keskin<sup>1</sup> 

<b>2008 Krizi Sonrasında Para Politikası Bağımsızlığı Çerçevesinde İmkânsız Üçleme ve İkilem Hipotezine İlişkin Tartışmalar</b>	<b>Debates Over the Trilemma and Dilemma Hypotheses within the Framework of Monetary Policy Independence Following the 2008 Crisis</b>
<b>Öz</b> <p>Bu çalışma, literatürde süregelen üçleme-ikilem tartışmaları ile ilgili ampirik çalışmaların bulgularından hareketle, tartışmaya genel bir bakış açısı sağlamayı ve gelecekteki araştırmalara ışık tutmayı amaçlamaktadır. Üçleme hipotezinin geçerliliğini araştıran çalışmalardan bazılarında, üçleme hipotezinin geçerliliğini koruduğu sonucuna ulaşılırken, bazı çalışmalarda ikilem hipotezini destekleyen kanıtlar elde edilmiştir. Sınırlı sayıda çalışmada ise üçleme ve ikilem hipotezinin kısmen geçerli olduğuna ilişkin bulgular ortaya konulmuştur. İncelenen ampirik çalışmaların sonuçları bir bütün olarak değerlendirildiğinde; esnek döviz kurları çevre ülkelere daha fazla parasal bağımsızlık sağlamaya devam etmekle birlikte, günümüzde giderek artan finansal entegrasyonla birlikte döviz kurunun şok emici rolünün zayıfladığı söylenmek mümkündür.</p>	<b>Abstract</b> <p>Based on the findings of empirical studies examining the trilemma-dilemma debate, this study aims to offer a general overview of this debate and light the way for future studies. We note that although some studies investigating the validity of the trilemma hypothesis conclude that it is still valid, others have found evidence in support of the dilemma hypothesis. Furthermore, a limited number of studies report that both hypotheses are partially valid. Examining the findings of these empirical studies as a whole, we can say that although flexible exchange rates continue to provide peripheral countries with more monetary independence, the steady increase in financial integration is weakening the shock-absorbing role played by the exchange rate today.</p>
<b>Anahtar Kelimeler:</b> İmkânsız Üçleme, İkilem, Para Politikası Bağımsızlığı, Küresel Finansal Döngü, Döviz Kuru Rejimi	<b>Keywords:</b> Trilemma, Dilemma, Monetary Policy Independence, Global Financial Cycle, Exchange Rate Regime
<b>JEL Kodları:</b> E52, F3, F41	<b>JEL Codes:</b> E52, F3, F41

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Çalışma yazar tarafından hazırlanmıştır.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

The financial markets have become significantly more integrated since the 1990s following deregulation, financial liberalization, and innovations, resulting in a considerable increase in cross-border capital flows (Cordemans et al., 2019: 1,4). The gradual increase in international financial integration has resulted in the monetary and financial conditions in developing countries becoming more dependent on global financial conditions and the monetary policy practices in developed countries. The expansionary monetary policies of the developed countries starting with the United States (US) in the wake of the 2008 Global Financial Crisis exposed the developing countries to larger scale and more volatile capital flows, generating a risk in terms of financial stability. These developments prompted debates over the ability of developing countries to isolate themselves from global financial shocks and the monetary policy changes in center countries such as the US, and called the validity of the trilemma (impossible trinity) hypothesis into question (Obstfeld et al., 2019:279; Kharroubi and Zampolli, 2016: 194).

The trilemma hypothesis is a central principle of open macroeconomics. It argues that it is not possible for a country to have a fixed exchange rate regime, free movement of capital, and an independent monetary policy at the same time, and that the policymakers will only be able to achieve two of these objectives by refraining from the third. To illustrate, according to the trilemma hypothesis, adopting a floating exchange rate regime by refraining from a fixed exchange rate regime under the free flow of capital will allow countries to apply an independent monetary policy (Georgiadis and Mehl, 2015: 1). But Rey (2015) called into question the classical trilemma hypothesis by asserting that the free flow of capital restricts monetary policy autonomy<sup>2</sup> even under a floating exchange rate. According to Rey (2015), the gradual increase in international financial integration gave rise to a strong global financial cycle as characterized by large the co-movement among the countries of gross capital flows, asset prices, leverage, and credit growth. Rey (2015) found evidence that US (center country) monetary policy is being transferred to other countries (peripheral countries) through global financial cycles, regardless of the exchange rate regime applied, suggesting that in all cases where capital moves freely, central banks outside the US cannot implement independent monetary policy, even in the presence of flexible exchange rates (Rey, 2015).

In this case, the classical trilemma hypothesis, as independent from the exchange rate regime, transforms into a dilemma in which the countries have to choose between the free flow of capital and monetary policy independence. In other words, a country has to choose between preserving its monetary independence by restricting capital flows, or forgoing monetary independence by permitting the free flow of capital. Rey (2015) argues that countries other than the center country are required to control their capital flows or adopt macroprudential policies to reduce their sensitivity to the global financial cycle and secure monetary policy autonomy.

The debates over the trilemma and dilemma hypotheses help policy-makers formulate the right policy by taking into account international capital flows and financial fragility. If the trilemma hypothesis is valid, policy-makers should focus on finding the optimal construct of actual capital flow and the choice of exchange rate regime to pursue an independent

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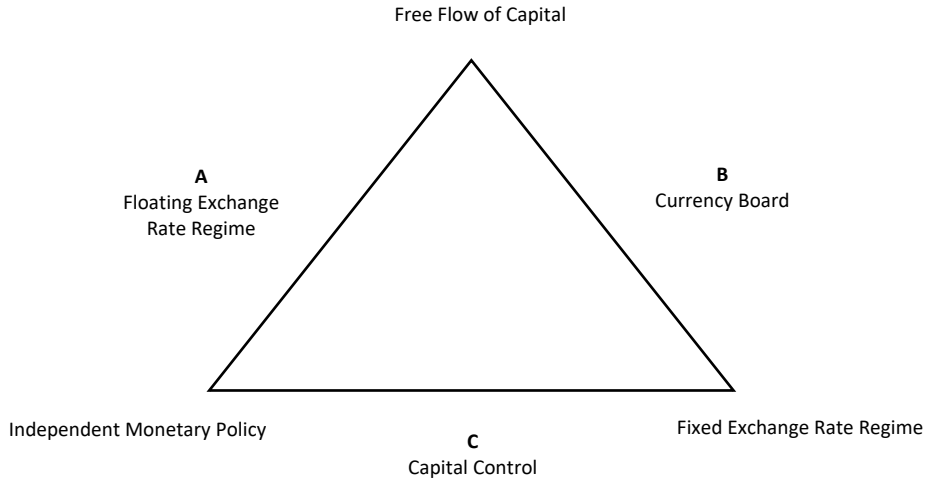
<sup>2</sup> In this study, the concepts of "monetary policy independence" and "monetary policy autonomy" are used interchangeably.

monetary policy. But if the dilemma hypothesis is valid, policy-makers should discuss the effectiveness of capital flow management policies such as capital controls and macroprudential regulations (Ligonniere, 2017: 4; Majumder and Nag, 2020:2). After Rey (2015) put forward her dilemma argument, numerous studies were made asking whether the trilemma hypothesis was still valid or not, and a growing literature formed on the subject. Based on the trilemma/dilemma debates in the literature, this paper has been written to provide an overall perspective on the debate and to shed light on future studies by examining empirical studies on the subject using the descriptive analysis method. To this end, the trilemma hypothesis is explained in part 2 and the global financial cycle and dilemma hypothesis are explained in part 3. Part 4 covers the policy options suggested for overcoming the dilemma hypothesis, namely, capital controls and macroprudential measures and their effects. Part 5 is a detailed review of the empirical literature on trilemma-dilemma debate. The final part of the study presents inferences and evaluations on the subject presented based on the reviewed empirical literature.

## **2. The Trilemma Hypothesis**

The trilemma or impossible trinity hypothesis is based on the work by Mundell (1963) and Fleming (1962) and posits that a fixed exchange rate regime, free flow of capital, and an independent monetary policy cannot be applied at the same time. It states that policy-makers have to opt for two of these three objectives. The trilemma hypothesis is generally depicted using the triangle in Figure 1. Each corner of the triangle represents one of the three available policy options. A country can opt for only two corners of the triangle, and this state implies forgoing the option in the third corner. In other words, a country can only choose a policy combination represented by one of the edges of the triangle. Accordingly, if a country opts for free flow of capital and a fixed rate of exchange, it must forgo having an independent monetary policy in favor of adopting a currency board (side B). A country that opts for a fixed exchange rate regime and independent monetary policy will have capital control (side C). A country that opts for an independent monetary policy and free flow of capital must forgo a fixed exchange rate and allow a floating exchange rate (side A) (Feng and Cheng, 2016:5; Klein and Shambaugh, 2015:34).

Figure 1: Trilemma Hypothesis



Source: Klein and Shambaugh, 2015:34.

The trilemma hypothesis offers a significant analytical framework for policy choice in open macroeconomics and reflects the scarcity of policy instruments relative to policy objectives in general (Aizenman, 2018: 3). Throughout history, countries have adopted different policy combinations in an attempt to overcome the trilemma. During the gold standard period, countries abandoned monetary policy independence in favor of fixed exchange rates and the free flow of capital. During the Bretton Woods era, the free flow of capital was abandoned in favor of a fixed exchange rate regime and an independent monetary policy. Different practices were adopted in the post-Bretton Woods period, however. Many countries preferred free capital flows and an independent monetary policy, abandoning the goal of a fixed exchange rate and adopting a floating exchange rate regime (Feng and Cheng, 2016:5-6; Obstfeld et al., 2019: 279).

One of the most significant developments in the post-Bretton Woods period was the financial liberalization experienced throughout the world. Financial liberalization began in developed countries toward the end of 1970s, then expanded to cover the developing countries with the support of such international financial institutions as the IMF in the 1980s, with many countries removing restrictions on capital flows. The volume of capital flows to developing countries aiming to overcome capital inadequacies with financial liberalization policies increased steadily and reached significant proportions in the 1990s (The Central Bank of the Republic of Turkey-TCMB, 2015a: 9). The liberalization of capital flows contributed to economic growth (Aizenman et al. 2022:6) by paving the way for more efficient allocation of sources, by assisting the transfer of technological or managerial information, and by increasing domestic savings. But the sudden inflows and outflows of capital flows, referred to as hot money, made the developing countries more vulnerable to shocks emanating from the finance market, hence the crises<sup>3</sup>, that began to occur more frequently as of 1990s and that

<sup>3</sup> 1994 Mexico and Turkey, 1997 Asia, 1998 Russia, 1999 Brazil, 2001 Turkey and Argentina.

spread easily from one country to another. These crises prompted high-level debates on the effects of capital flows on the developing countries. Arguments claiming that capital flows were the single most important dynamic in economic crises began to gain importance (TCMB, 2015a: 9; Insel and Sungur, 2003: 6). Aizenman (2018) asserts that the crises that affected the developing countries in 1990s added financial stability to the three policy goals framed by the original trilemma. Many developing countries thus tended to accumulate international reserves to insure themselves against the risk of sudden stops or reversals of capital flows, resulting in massive increases in their stocks of reserves (Aizenman, 2018: 8-11).

Another development that came to the fore in the 2000s in the post-Bretton Woods period was the spillover effect of the monetary policies implemented by developed countries, especially the United States, on developing countries after the Global Financial Crisis of 2008. The global liquidity surplus created as a result of the unconventional expansionary monetary policies implemented by the central banks of developed countries after the 2008 Crisis increased capital flows to developing countries. As these capital flows were high volume and short-term, they posed a risk to financial stability by causing such problems as rapid credit growth, appreciation of local currency, and increase in current deficit. Moreover, the possibility of sudden stops and reversals in capital flows increased the concerns over financial stability. The expansionary monetary policies implemented by developed countries brought macroeconomic and financial risk to developing countries through capital flows. This in turn called the impossible trinity hypothesis into question and led to capital flows playing a determining role in the monetary policy approaches of developing countries in the post-2008 Crisis period. Against this backdrop, many developing countries extended their policy instruments by adopting capital controls and macroprudential measures to reduce the risks from capital flows as well as ensure price stability (TCMB, 2011: 27; Barlas and Kaya, 2013: 1-4; TCMB, 2015b: 2).

### **3. Global Financial Cycle and the Dilemma Hypothesis**

Although today's steadily increasing financial integration has demonstrated the importance of external shocks to national economic conditions, economists and policymakers alike agree that the trilemma hypothesis was valid up until the 2008 Crisis. But in the period after the 2008 Crisis, through the studies conducted particularly by Rey (2015, 2016) and co-authors (Miranda- Agrippino and Rey, 2015; Passari and Rey, 2015), it started to question more and more whether exchange rate flexibility alone was enough for an independent monetary policy (Anaya, 2016:1-2). According to the dilemma argument suggested by Rey (2015), in the presence of strong global financial cycles, monetary policies implemented by the center countries (generally the US) are transmitted to peripheral countries regardless of the exchange rate regime. This renders invalid the traditional trilemma hypothesis of an open economy that holds that in a world where capital flows freely, independent monetary policies are only feasible when there is a floating exchange rate.

In her study using the data of 53 countries from 1990 to 2012, Rey (2015) initially examined the relationships between gross capital flows in different geographical regions and of different types. She determined that the gross capital flows move strongly together in terms of both types of capital flows and geographical regions. She also found a negative



correlation between the movements in the gross capital flows and the VIX index<sup>4</sup>, a measure of uncertainty and risk aversion. Capital flows increase when VIX is low and decrease when VIX is high. She also found similar correlations with VIX for asset prices, leverage of global banks, and credit growth. They all had a negative correlation with VIX. Rey (2015) found extensive common movement between countries in gross capital flows, asset prices, the leverage rate of global banks, and credit growth, and characterized this status as the “global financial cycle.” She indicated that VIX is one of the main driving powers of global financial cycle, and then investigated the relationship between US monetary policy and the global financial cycle. The results of VAR analysis revealed that US monetary policy is a significant determinant of the global financial cycle acting along with VIX. An expansionary US monetary policy shock decreases the uncertainty and global risk perception, and accordingly increases the leverage rates of global banks, extends international capital flows, accelerates credit growth, and increases asset prices. She reported that monetary conditions are transferred from the center country to the rest of the world via capital flows and credits due to the presence of global financial cycle regardless of the implemented exchange rate regime and asserted that this invalidated the classic “trilemma” hypothesis. According to Rey (2015), whenever capital is freely mobile, the global financial cycle restricts the national monetary policies independently of the exchange rate regime, and so the classic “trilemma” (“impossible trinity”) hypothesis turns into to a “dilemma” (“irreconcilable duo”). In this case, independent monetary policies are only possible when the capital account is managed, directly or indirectly, regardless of the exchange rate regime. In other words, according to the dilemma hypothesis, countries have to choose between monetary policy autonomy and capital account openness, and not among the three policy objectives of the trilemma. A similar study was made by Passari and Rey (2015). The study covered the period from 1990 to 2012 and used a sample consisting of 53 developed and emerging market economies. Their analysis showed that cross-border capital flows, asset prices, and global leverage rates were moving together between countries regardless of the implemented exchange rate regime, and presented evidence of the global financial cycle. They then investigated whether the sensitivity to the global financial cycle (represented by VIX) of the countries’ local stock prices and local credit growth was affected by the exchange rate regime, and found that the correlation of stock prices and credit growth with the global financial cycle was systematically not altered by the implemented exchange rate regime. They then analyzed the spillover effects of US monetary policy shocks on the United Kingdom, a country that has adopted the floating exchange rate regime and an inflation targeting regime. They found indication that US monetary policy was significantly affecting the United Kingdom’s external financing premium (measured by mortgage margin).

Miranda-Agrippino and Rey (2015) examined in more detail how the presence of the global financial cycle affected the financial spillovers of US monetary policy. The authors first considered 858 different price series covering the asset prices, corporate bond indices, and the prices of commodities traded on all the major global markets (North America, Europe, Asia Pacific, and continental Australia). Using a dynamic factor model, they converted the

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<sup>4</sup> VIX is the Chicago Board Options Exchange Volatility Index. It measures the implied volatility in the S&P 500 index options.

movement in the returns of these assets into a single global factor. They determined that this global factor they had formed was by itself forming more than 20% of the common variability in the prices of risky assets in all the continents, and that it was indicating high co-movement. Their study also indicated that this global factor, shaping the co-movement of risk asset prices, had a negative correlation with VIX, which is defined as one of the main driving forces of the global financial cycle. Using the Bayesian VAR method, the authors then analyzed the effect of US monetary policy shocks on the global financial cycle. They obtained evidence indicating that US monetary policy shocks were causing strong movements on international financial variables representing the global financial cycle. Their results indicated that the monetary tightening in the United States was followed by a decrease in the leverage rates of global banks, an increase in risk aversion, a tightening in asset prices' global factor, a regression in global credit, and a decrease in international capital flows. The authors reported that these results were also valid for countries with a floating exchange rate and emphasized that this finding supported Rey's (2015) dilemma argument. Rey (2016) obtained similar results when she tested the dilemma argument for the developed countries, too. In her study in 2016, Rey examined the effects of US monetary policy shocks on those developed countries that employed inflation targeting under a floating exchange rate regime and that had large financial markets (Canada, New Zealand, Sweden, and the United Kingdom). The analysis results revealed that US monetary policy shocks were greatly affecting domestic financial conditions (output, inflation, and asset prices) via international credit and risk-taking channels.

#### **4. Policy Suggestion for the Dilemma Hypothesis: Capital Controls and Macroprudential Measures**

Rey (2015) recommends using capital controls or macroprudential measures to decrease non-center economies' sensitivity to the global financial cycle and maintain monetary policy independence. Capital controls are measures designed (generally price-based or administrative) to restrict capital flows by allocating the borrowing instruments on the basis of residence. Macroprudential measures are prudential instruments designed to limit the systemic financial risk and preserve the stability of the financial system (IMF, 2012:21; Landi, 2017:5). The reasons for applying capital controls can be listed as decreasing the volume of capital flows, changing the combination of capital flows (from short-term to long-term), decreasing the pressure on exchange rates, and allowing an independent monetary policy. Capital controls is a subject that has been addressed over and over again in different periods either by policy-makers or academicians. While theoretical models assert that capital controls are beneficial, the discussions regarding the effectiveness and cost-benefit of capital controls in policy making are not yet concluded (Magud et al., 2018:2-3, 23). Interest in capital controls as an alternative policy instrument that may be used to ensure macroeconomic and financial stability renewed following the 2008 Crisis when opinions against capital controls changed in the international environments with leading international institutions and central banks adopting a more open-minded attitude regarding the use of capital controls. The IMF's attitude here is particularly remarkable. Historically, the IMF, which is a strong supporter of free capital mobility, revised its institutional opinion on this subject in 2012 (Rebucci and Ma, 2019: 2). In this context, IMF accepted that free capital flows posed risks to countries in addition to the significant benefits they provided, and suggested using capital controls to complement macroeconomic policies under specific conditions (IMF, 2012). In the period

after the Global Crisis, Brazil, Peru, Colombia, Thailand, and South Korea implemented various capital control measures to decrease the risks posed by capital flows (TCMB, 2010: 47).

While capital controls and macroprudential measures are generally perceived as similar policy instruments, their primary purposes do not always overlap. While capital controls are generally intended to affect the volume or composition of capital flows, macroprudential measures seek to control the accumulation of systemic financial risks under control regardless of the source of risk, be it domestic or foreign (IMF, 2012:21). Moreover, when compared with capital controls, macroprudential measures can be implemented in a more targeted fashion, and their use requires fewer legal restrictions than capital controls (Friedrich et al., 2020: 25). Macroprudential measures include a broad set of policy instruments aimed at keeping systemic vulnerabilities in check and strengthening the resilience of the finance sector. Various macroprudential regulations that increase bank capital and liquidity, limit foreign exchange risks, and target risky credit types can help increase the resilience of the finance sector against global financial shocks, thus ensuring macroeconomic stability (Bergant et al., 2020:4-6). As macroprudential measures can help smooth out excessive cyclic movements in financial markets such as rapid growth in credit and liquidity, thus preventing systematic risk accumulation and formation of financial risk, they can help countries maintain their monetary independence. Macroprudential measures are relatively new policy instruments compared with capital controls. They started being noticed and discussed after some developing countries used them to counter the large and volatile capital flows caused by the expansionary monetary policies implemented by the central banks of developed countries in the wake of the 2008 Global Finance Crisis. For example, following the 2008 Crisis, some developing countries such as South Korea, Brazil, Indonesia, Russia, and Thailand implemented various macroprudential measures to develop resistance against reversal of capital flows and other related financial risks (Aizenman et al., 2020: 2-3,18).

##### **5. Empirical Literature on the Trilemma and Dilemma Hypothesis Debates**

After Rey (2015) put forward her dilemma argument, numerous studies were made investigating whether the trilemma hypothesis was still valid, and a growing literature formed on the subject. As the subject has different interconnected and intertwined dimensions, it is hard to make a classification by separating the studies from each other with defined limits according to the topics examined. Nevertheless, the current studies can be evaluated by dividing them roughly into two groups. The studies in the first group questioned the validity of the trilemma hypothesis. Many of them investigated whether the trilemma turned into a dilemma. As monetary policy independence is defined as the freedom to set policy interest rates independently of other countries, the studies conducted to test whether the trilemma turned into a dilemma generally tried to measure to what extent the local interest rates and domestic financial conditions were being directed by the interest rates of the center country (usually the US). When making these measurements, a distinction is usually made between countries that do apply capital controls and those that do not, as well as those that apply a fixed or floating exchange rate regime, taking into account the exchange rate regime of the country being analyzed and the openness of its capital account. Some of the studies questioning the validity of the trilemma hypothesis focused on the role of the global financial cycle and sought to determine how sensitive capital flows, domestic financial conditions, and monetary policy were to the global financial cycle. The studies in the second group consisted

of research contributing to the trilemma and dilemma debate in the context of capital controls and the effects of macroprudential regulations. Rey (2015) recommends using capital controls and macroprudential measures to overcome the effects of the global financial cycle and dilemma. In this context, other studies investigated whether capital controls and macroprudential measures help countries to reduce their sensitivity to the global financial cycle and increase their monetary policy independence (Georgiadis and Mehl, 2015:3; Kharroubi and Zampolli, 2016:195; Friedrich et al., 2020:5).

### 5.1. Studies Investigating the Validity of the Trilemma Hypothesis

Most of the studies questioning the validity of the trilemma hypothesis following Rey's (2015) claim sought to answer the question as to whether the trilemma had transformed into dilemma. Some studies reported findings that supported the validity of the trilemma hypothesis and others had findings in support of the dilemma hypothesis. A limited number of studies reported findings showing that both hypotheses were partially valid.

Georgiadis and Mehl (2015) used a sample of 61 developed and developing countries to examine whether the trilemma hypothesis transformed into a dilemma due to financial globalization for the period 1999-2009. The findings of the study, made using the VAR model, indicated that flexible exchange rates continued being crucial for monetary policy autonomy with capital mobility, which meant the trilemma hypothesis remained valid. One of the studies supporting the validity of the trilemma hypothesis was conducted by Obstfeld (2015) who examined the effect of exchange rate regimes in the transmission of US monetary policy to developing countries. His findings revealed that the co-movement of long-term interest rates under floating exchange rates was very high and not statistically different from that of fixed exchange rates. By contrast, they found that the co-movement of short-term interest rates continued to depend on the exchange rate and that floating exchange rates allowed for greater monetary policy independence. The author emphasized that while floating exchange rate provided more monetary autonomy, the exchange rate flexibility would not be enough by itself to insulate economies against external financial and monetary shocks. Klein and Shambaugh (2015) investigated whether exchange rate flexibility and capital controls allow for monetary policy independence in a study of more than 100 developed and developing countries from 1973 to 2011. The authors concluded that not only floating exchange rates but even a limited amount of exchange rate flexibility increase monetary policy autonomy, especially in developing countries. They also reported that partial capital controls did not usually deliver more monetary autonomy than open capital accounts unless these controls were quite extensive. The authors stated that while some countries were implementing long-standing, extensive capital controls ("walls"), a significant group of countries was implementing periodical limited controls ("gates")<sup>5</sup>, and noted that the walls were more effective than the gates in limiting the increases in asset prices and the fluctuations in the real exchange rate. In the light of their findings, the authors emphasized that the simplest and most precise way of ensuring monetary autonomy without firmly closing the capital account was to allow the fluctuation of exchange rate, and thus they supported the trilemma hypothesis. Aizenman et al. (2016) investigated how sensitive financial variables (real effective exchange rates, stock exchange prices, and policy rates) in developing and emerging market economies (peripheral countries) were to financial conditions and policy changes in

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<sup>5</sup> Klein (2012) calls long-standing capital controls "walls" and periodically applied capital controls "gates."

center countries (US, Japan, Euro Zone, and China), and the factors affecting this sensitivity. In the study covered 100 countries from 1986 to 2012 and concluded that the connection between peripheral countries and center countries was very high in the past two decades for both policy interest rate and real effective exchange rate. It also found that the policy interest rates in peripheral countries were more sensitive to global financial shocks (VIX index) during the crises that occurred in the 1990s and after the 2008 Global Finance Crisis. The authors analyzed the factors affecting the sensitivity of peripheral countries to financial conditions in center countries, and reported that the policy regulations such as the exchange rate regime and financial openness implemented in peripheral countries directly affected sensitivity to center countries. They also found that those countries pursuing higher exchange rate stability and financial openness had stronger connections with the center countries. In the light of their findings showing that countries with more stable exchange rates were more sensitive to changes in center countries' monetary policies, the authors concluded that the trilemma hypothesis was still valid.

Using data from 161 countries from 1970 to 2013, Lignoniere (2017) investigated whether the trilemma transformed to dilemma by using the unbalanced panel model. The results of the study showed that the global financial cycle, as represented by the VIX index, reduces monetary policy autonomy. However, the effect of policymakers' decision regarding financial openness and exchange rate regime arises from emergence of global financial cycle through global players (global investors and global banks) rather than VIX. The author found that sensitivity to the global financial cycle depends on the presence of global players in the local economy and not financial fluctuations. He reported that the trilemma weakened with the increasing role of global investors and global banks in the local economy, then the trilemma was weakening, but did not disappear. In other words, there is no gradual transition from trilemma to dilemma taking place. In this context, the study drew attention to the importance of global players within the financial system, and called for more macroprudential regulation to reduce sensitivity to the global financial cycle. Bekaert and Mehl (2019) investigated whether the trilemma transformed into a dilemma by using an alternative financial integration criterion they had developed using the stock return data of 17 countries for the period 1985-2014. The findings of the study were consistent with the trilemma hypothesis and showed that the transitivity from center country interest rate to both short- and long-term domestic interest rates depended on the implemented exchange rate regime. According to this, higher financial integration for countries applying a fixed exchange rate regime increases interest rate transitivity and decreases monetary policy autonomy. On the other hand, in countries with a flexible exchange rate regime, interest rate transitivity is very limited and is not affected by the level of integration of the financial markets. Moreover, the results indicated that even in cases of increased financial integration, the positive relationship between exchange rate flexibility and monetary policy autonomy remains. According to the authors, when the exchange rates are flexible, the central banks outside the United States have more control over domestic interest rates despite the potential presence of the global financial cycle driven by US monetary policy. Obstfeld et al. (2019) used a sample of 43 emerging market economies from 1986 to 2013 to investigate whether the type of exchange rate regime matters in transmitting global financial shocks. The authors analyzed the reaction of a series of local real and financial variables such as credits, prices of risky assets (housing and stock), banking system leverage (credit-deposit rates), and economic activity level against global financial conditions (represented by the VXO index). As

the financial conditions in developing countries are strongly correlated with cross-border capital flows, they investigated whether the sensitivity of capital flows to global financial shocks differs between exchange rate regimes. Their findings indicated that countries with a fixed exchange rate regime are more vulnerable (rapid increase in local credit and housing prices, and increase in bank leverage) to global financial shocks than countries with a floating exchange rate regime. Therefore, exchange rate elasticity decreases the magnitude of the transmission of global financial shocks to domestic credit growth, housing prices, and bank leverage. They also determined that capital flows react more to global financial conditions in fixed exchange rate regimes rather than in flexible exchange rate regimes. The main finding obtained from the study, contrary to Rey's (2015) claim, was that the type of exchange rate regime applied still matters in the transmission of global financial conditions to other countries.

Habib and Venditti (2019) examined the driving powers of global financial cycle and the effect of this cycle on global capital flows using data from 18 developed and 32 developing economies covering the period from 1990 to 2017. The authors created the Global Stock Market Factor (GSMF) as a global risk measure that summarizes the movement of stock returns in 63 economies together to represent the global financial cycle. They pointed out that the GSMF is strongly correlated with the global financial cycle suggested by Miranda-Agrippino and Rey (2015) and that it affects global capital flows. They noted that the most significant driving power of global risk is financial shocks, and that financial shocks play a more significant role in directing global risk than US monetary policy. The authors also examined how capital account openness and exchange rate regime affect the transfer of global risk to different types of capital flows. They stated that countries that are more open financially and adopt a fixed exchange rate, are more sensitive to global risks, and that it implies confirmation of the trilemma hypothesis. When they examined the subject in terms of different types of capital flows, they reported that the "trilemma" is directed by other investments and to a large extent by bank credits from among the capital flows. They added that this finding confirms the prominent role of global banks in the transmission of global shocks. Georgiadis and Zhu (2019) investigated the validity of the trilemma hypothesis by estimating the reaction functions of Taylor-rule type monetary policy. Their study included data from 47 developed and emerging market economies for the period 2002-2018. The authors supported the trilemma hypothesis by concluding that both exchange rate flexibility and capital controls reduce the peripheral countries' sensitivity to center country's policy rate, which means they strengthen monetary policy autonomy. In addition, the authors reported that an economy's net foreign exchange deficit in its external balance sheet limits the flexible exchange rates' potential to ensure monetary policy autonomy. This conclusion gains strength particularly when the foreign exchange deficit comes from portfolio debt and bank loans and when the center country tightens its monetary policy. The authors point out that the underlying reason for the periphery countries to mimic the centre country's monetary policy tightening may be the concern of policymakers about the depreciation of the local currency because local currency depreciation can increase the cost of payment and conversion of foreign currency debts and bank loans to a level that will jeopardize financial stability. In his study covering 30 small open economies (14 developed and 17 developing countries), Demir (2019) examined the effect of the applied exchange rate regime on US monetary policy spillover to local interest rates. The study covered the period 2000-2015 and used the panel VAR method. It found that exchange rate flexibility sharply decreased US

interest rate spillover to local interest rates in line with the trilemma hypothesis. The study also concluded that in countries with a floating exchange rate, the degree of monetary spillover increases with the degree of capital account openness. The study also sought to answer the question as to which factors were effective in enabling local monetary authorities to gain greater monetary autonomy in the face of US monetary policy expansions. It provided evidence showing that reliable monetary and fiscal policies, lower financial dollarization levels, and the adoption of macroprudential policies provide a higher degree of monetary autonomy. Loipersberger and Matschke (2022) investigated the effectiveness of floating exchange rates and capital controls in decreasing the effect of global financial shocks on local financial variables and the real economy. The study used data from 55 developed countries for the period 1995-2016 and found that floating exchange rates and capital controls significantly decreased the spillover effects of global financial shocks on local economies. According to the results of the analysis, floating exchange rates and capital controls were almost equally effective in insulating local economies from international spillovers. The authors also investigated whether a two layered insulation, namely, the use of capital controls and floating exchange rates, provided additional benefit for those developing countries exposed to global shocks, and concluded that they did not. Therefore, to have monetary independence, policymakers may make a choice between a floating exchange rate or capital controls and thus maintain open capital accounts or fixed exchange rates.

In the literature, there are studies that conclude that flexible exchange rates continue to be correlated with greater monetary policy independence, and that the trilemma hypothesis is still valid as well as studies that assert the transformation of trilemma to dilemma. One significant study supporting the dilemma hypothesis was made by Edwards (2015). The author investigated whether countries with flexible exchange rate regimes can pursue an independent monetary policy by analyzing the extent to which US central bank policy changes are transferred to the policy interest rates of local central banks. The study used data from three Latin American countries (Chile, Colombia and Mexico) that adopted the inflation targeting regime, had a relatively high degree of capital mobility, and a flexible exchange rate regime for the period 2000-2008. The results indicated that for all three countries, there was significant spillover from the US policy interest rate to their policy interest rates, meaning that these countries tended to import the FED policies. In this case, flexible exchange rates could not ensure the complete independence of monetary policy as anticipated in the conventional trilemma hypothesis. Edwards drew attention to the fear of floating as a possible explanation for this result. According to the models in Mundell-Fleming tradition, if capital mobility is less than excellent, an increase in the global interest rate will result in external deficit and depreciation of the local currency. In this case, if there is a fear of floating, local policymakers will resort to tightening their own monetary stance to stop the currency from weakening. Hofmann and Takats (2015), using a sample consisting of 22 developing countries and 8 small open developed countries for the period 2000-2014, examined to what extent US interest rates were affecting local interest rates. Their analysis showed that short and long-term US interest rates demonstrated significant spillover effects on both developing countries and small open developed countries, and this was true for both fixed and floating exchange rate regimes. This finding supports Rey's (2015) opinion that exchange rate flexibility will not protect countries from external monetary spillovers. The authors point out that even under flexible exchange rates, central banks find it difficult to implement a monetary policy that, while technically feasible, is based entirely on domestic factors and ignores monetary

developments in advanced economies. They emphasized that the most important factors directing developing countries and small developed countries to consider US interest rates in their monetary policy decisions are risks arising from capital flows and concerns about exchange rate volatility. Central banks may want to prevent high interest rate differences with the United States to stop the exchange rate from appreciating, which may result in a loss of commercial competitive power, or because they are worried about the risk to financial stability posed by large-volume short-term capital.

Anaya et al. (2015) examined the monetary spillover effects of unconventional monetary policies implemented by the US following the 2008 Crisis on 19 developing countries. The study covered the period 2008-2014 and found that the unconventional monetary policy shock of the US with respect to large-scale asset procurement significantly increased portfolio outflows from the US accompanied by an increase in portfolio inflows to developing countries. Real output levels and stock returns increase with the increase in portfolio investments directed at developing countries, while the local currency appreciates in real terms. This finding suggests that the unconventional monetary policies implemented by the US are driving the financial conditions in developing countries through portfolio investments. Another of the study's findings is that the developing countries are reacting by decreasing their policy interest rates in response to the expansionary monetary policy of the US regardless of the implemented exchange rate regime. This finding suggests that flexible exchange rate regimes do not insulate developing countries from the spillover effects of US monetary policy, and fits the dilemma hypothesis instead of the trilemma hypothesis. Using a broad sample consisting of 22 developed and 38 emerging market economies from 1990 to 2016, Gülşen and Özmen (2017), questioned the validity of the trilemma hypothesis under different exchange rate regimes in the periods before and after 2008 Global Finance Crisis. Their main finding was that domestic interest rates were being set by the global financial cycle as represented by the FED's interest rate and VIX even in floating exchange rate regimes for the whole sample in line with Rey's (2015) dilemma suggestion. This means that the exchange rate flexibility is not effective in insulating the peripheral countries' central bank policy actions from US monetary policy. According to the results of the analysis, the FED's interest rates affect developing countries more than developed countries, and developing countries with managed floating exchange rate regimes are more sensitive to the global financial cycle than those with floating exchange rate regimes. Under a floating exchange rate regime, the spillover effect of the FED's interest rate increased significantly in both developed and developing countries after the 2008 Crisis. Another study that found evidence in favor of the dilemma hypothesis was that conducted by Dees and Galesi (2019). The authors examined the international spillover of US monetary policy on 33 developed and developing countries for the period 1994-2016. The study used the global VAR (GVAR) method and concluded that the US expansionary monetary policy shock contributed to the emergence of the global financial cycle, and that economies with floating exchange rate regime were not fully insulated from US monetary policy shocks. The study also found that the spillover effects of US monetary policy increase as countries become more globally integrated. Using a sample consisting of 15 developed countries, 15 developing countries, and the Eurozone for the period 1990-2018, Degaspero et al. (2021) examined the spillover effects of US monetary policy shocks using the VAR method. Their first finding was that US monetary policy shocks had caused large and very homogenous spillovers onto both developed and developing countries. The second finding was that US monetary policy affected these countries



regardless of the implemented exchange rate regime, and that flexible exchange rate regimes did not provide complete insulation from US monetary policy shocks. Flexible exchange rate regimes are not sufficient by themselves to ensure monetary autonomy even in developed economies and the Eurozone. These findings support the idea of the trilemma becoming a dilemma.

In addition to studies with findings in favor of the trilemma and dilemma hypotheses, a limited number of studies found evidence documenting the partial validity of the trilemma and dilemma hypotheses. Using data from 28 countries for the period 1999-2014, Han and Wei (2016) examined the role of exchange rate regime and capital controls in the transmission of international monetary policy shocks from developed countries to emerging market economies. Their findings characterized neither a complete trilemma nor a dilemma, and instead reflected a situation between trilemma and dilemma (2.5-lemma). According to the authors, a flexible exchange rate regime provides asymmetric or insufficient insulation from external monetary policy shocks such that for those peripheral countries not implementing capital control, a flexible exchange rate regime ensures slight monetary autonomy when the center country tightens its monetary policy. But when the center country loosens its monetary policy, the “fear of appreciation” steps in, and even if the local Taylor rule indicates the opposite, peripheral countries adopt a looser monetary policy echoing that of the center country. The study also found that capital controls helped insulate the peripheral countries from external monetary policy shocks even if the center country lowers the interest rate. Vanegas (2019) tested the validity of the trilemma hypothesis for Colombia, Chile, Mexico, and Peru for the period 2003-2017. The findings indicated that the trilemma remains valid in low credit periods, but that it became a two-goal dilemma in periods of relatively high credit growth. This dilemma took the form of monetary independence and capital mobility in Chile, Mexico, and Peru, and monetary independence and exchange rate stability in Colombia. The author noted that while this finding does not align completely with Rey’s (2015) opinion regarding the insignificance of exchange rate regimes, it does support the idea of a significant change in the structure of trade-offs between policy objectives in periods of excessive borrowing. Cheng and Rajan (2020) tested the dilemma hypothesis against trilemma hypothesis across a wide sample consisting of 88 countries for the period 1973-2014. Overall, the authors provide evidence that the trilemma hypothesis still holds true and that a flexible exchange rate does insulate countries from the effects of international monetary policy transmission. The first of their findings was that while fully flexible exchange rates do allow monetary autonomy, moderately flexible regimes do not. The second finding was that when the center countries loosen their monetary policies, flexible exchange rates allow monetary policy autonomy to a certain extent for those peripheral countries not implementing capital control. But when the center countries implement tight monetary policies, those peripheral countries with high reserve levels do not tend to go along with the center country in terms of interest rates, but those peripheral countries with low reserves closely pursued the center countries’ interest rates and tightened their monetary policies. This finding indicates the presence of an asymmetric pattern between the trilemma and dilemma similar to the results of Han and Wei (2016). However, according to Han and Wei (2016), the peripheral country maintains monetary policy autonomy when the center country adopts a tight monetary policy. According to Cheng and Rajan (2019), the peripheral country maintains its monetary policy autonomy when the center country implements a loose monetary policy. So, according to the findings of the study, this asymmetric reaction to the

center country's monetary policy occurs in countries with low reserve level. The authors asserted that this is due to concerns about reversal of capital flows or reserve loss in countries with low reserve level, and they drew attention to the fact that higher reserve levels help maintain monetary policy autonomy.

As the global financial cycle and its effects constitute a part of Rey's (2015) original analysis, the effects of global financial cycle were also addressed in some of the above-mentioned studies investigating whether the trilemma turns into a dilemma. In addition, despite fewer in number compared to studies, investigating whether the trilemma turns into a dilemma, there are also studies, investigating the sensitivity of domestic financial conditions, capital flows and monetary policy to global financial cycle. One such study was made by Cerutti et al. (2017). The authors questioned the importance of the global financial cycle for capital flows by using data on capital flows disaggregated by direction and type for 85 countries between 1990 and 2015. The main finding of the study was that the role of the global financial cycle in determining capital flows was limited and smaller than the one implied in the literature. As the result of analysis based on a series of factor model estimations, the authors concluded that the global financial cycle was unable to explain more than 25% of the change in capital flows. They reported that most of the changes in capital flows did not appear to be the consequence of common shocks, or they were not caused by observable incidents in a center country such as the US. Davis et al. (2019) examined the effect of the global financial cycle on gross and net capital flows using a sample of 20 developed and 38 developing countries for the period 1996-2015. They reported that the effect of the global financial cycle on both gross and net capital flows was stronger in countries with larger net external liabilities. Moreover, the authors included many variables in the analysis which could affect the sensitivity of capital flows to global factors, and revealed that the policy variables such as capital controls, exchange rate regime, corporate quality, and reserve accumulation did not have a significant explanatory power in limiting the effect of the global financial cycle on capital flows. These findings drew attention to the fact that financial sector regulations limiting the size of net debt liabilities were more effective than capital controls in limiting the sensitivity to global financial cycle.

Cordemans et al. (2019) investigated the Eurozone countries to determine whether the local financial conditions were being directed by the global financial cycle. The study created a financial conditions index representing local financial conditions and used the Global Stock Market Factor (GSMF) developed by Habib and Venditti (2019) to represent the global financial cycle. The results showed that the financial conditions in the Eurozone were strongly correlated with the global financial cycle. Another significant finding was that sensitivity to the global financial cycle depended significantly on the countries' net international investment position. Those countries with net liabilities were reacting to the global financial cycle twice as strongly as countries with net assets. Moreover, those countries with net liabilities, particularly the ones financing themselves with other investments (essentially the banks' debt financing), were more vulnerable to the boom/bust periods of the global financial cycle. The authors pointed out that such a strong correlation between the financial conditions in the Eurozone and the global financial cycle tended to indicate a financial dilemma for Eurozone similar to the one posited by Rey (2015). Such a dilemma implies that the monetary and financial conditions in the country are directed mainly by global factors rather than an independent monetary policy as long as the capital account is open. In their

study, Friedrich et al. (2020) developed a criterion representing the global financial cycle by estimating a factor model changing the regime for cross-border stock flows in a sample consisting of 61 countries. Using this criterion, they investigated the effect of global financial cycle on monetary policy autonomy for a sample consisting of 9 developing countries and 7 small, open, developed countries. Their first finding was that the power of the global financial cycle changed over time, and that this change exhibited significant heterogeneity among the countries. Analyses of the independence of monetary policy showed that the central banks of developing and developed economies experienced lower degrees of monetary policy independence when the power of the global financial cycle was high. The authors reported that the central banks of these countries would tighten their policy rates in response to unexpected increases in the inflation gap when the power of the global financial cycle was low, but would not react to the same unexpected changes in the inflation gap when the power of the global financial cycle was high (i.e., they did not pursue a model consistent with the Taylor rule).

## **5.2. Studies Investigating the Effects of Capital Controls and Macroprudential Measures**

Many empirical studies evaluating the effectiveness of capital controls and questioning whether capital controls and macroprudential measures help reduce countries' sensitivity to the global financial cycle and increase their monetary policy autonomy were conducted after the 2008 Crisis. Some studies analyzed the effects of either capital controls or macroprudential measures while other studies analyzed both.

Farhi and Werning (2014) examined the optimal use of capital controls within the framework of the New Keynesian model, and obtained results that were similar to and different from the trilemma hypothesis. In line with the trilemma hypothesis, they found that the exchange rate regime matters and that the optimal management of capital flows depend significantly on the exchange rate regime. In addition, contrary to the trilemma hypothesis, they concluded that capital controls were still beneficial even with floating exchange rates. The study found that capital controls play a significant macroeconomic stability role in ensuring monetary autonomy in a fixed exchange rate system. It also found that under a floating exchange rate regime, capital controls help reduce i) the depreciation in the exchange rate and terms of trade, ii) the decrease in consumption, and iii) capital outflows. Pasricha et al. (2015) used the panel VAR method to examine both the effects of capital controls on the local country and the spillover effects to other countries in 17 emerging market economies before and after the 2008 Global Crisis. The results revealed that capital controls have a very limited effect on net capital inflows, monetary policy autonomy, and the exchange rate. The effects, being very limited before the Global Crisis, had weakened more in the period after the Crisis. The study also examined the spillover effects of capital controls to other countries and found that the capital controls implemented by the BRICS countries (Brazil, Russia, India, China, and South Africa) spread significantly to other developing countries. It also found that such spillover effects stemmed particularly from actions restricting the capital inflows, mainly through cross-border bank loans, and became stronger after the Global Financial Crisis. Based on these findings, the authors pointed out that caution should be exercised when using them as a tool for macroeconomic management as the effects of capital controls were limited and situation-specific and may have spillover effects to other countries. One of the most extensive studies on macroprudential policies was performed by Cerutti et al. (2015). The study used data from 119 developed and developing countries in the period 2000-2013 to analyze the

use and effect of macroprudential policies. The data used in the study was obtained from the survey called Global Macroprudential Policy Instruments (GMPI), which is the most extensive database of macroprudential policies, covering 18 different instruments (12 of which were used in the study) and conducted by the IMF. The findings indicated that macroprudential policies were more frequently used in developing countries than developed countries, and that foreign exchange-based policies were more frequently preferred by developing countries. The authors concluded that macroprudential policies operated better in the bust periods of financial cycles rather than the boom periods, and that these policies were much more effective in mitigating credit booms, more so in developing countries than in developed countries. Davis and Presno (2017) used the dynamic general equilibrium model to investigate the relationship between monetary policy independence and capital controls in small, open economies with a flexible exchange rate. The authors used Klein and Shambaugh's (2015) data and concluded that the use of capital controls in countries with flexible exchange rate regime allows for higher monetary policy autonomy. Their findings showed that capital controls allow the monetary policy to focus less on the foreign interest rate and more on local variables such as inflation and outflow.

One of the most exhaustive studies of capital controls and the one that compiled the current evidence regarding the extent to which controls would be successful in practice was made by Magud et al. (2018). That study was based on a meta-analysis of the current literature with respect to capital controls. It standardized the results of about 40 empirical studies by forming two capital control indexes (Capital Controls' Effectiveness Index, and Weighted Capital Controls' Effectiveness Index). The study drew attention to the change of capital controls' effectiveness by time, country, and type of measures used, and found that the controls were less beneficial in practice than suggested by theoretical models. While the findings showed that capital controls on inflows increase monetary policy autonomy and change the combination of capital flows, the evidence showing that controls reduce pressure on the exchange rate was weak and controversial. The study also concluded that controls on the inflows were not effective in decreasing the volume of capital flows. Rebucci and Ma (2019) evaluated the theoretical and empirical contributions to the literature by examining studies on capital controls in the post-2008 Crisis period. Going by the theoretical and empirical evidence they reviewed, the authors stated that capital controls could at best only complement the exchange rate flexibility but could never replace exchange rate policy. The authors stated that the longest-standing and best-understood motivation for using capital controls is to maintain monetary policy independence. They noted that the available evidence suggests that capital controls are necessary to escape the trilemma under fixed exchange rates but that the evidence regarding capital controls under flexible exchange rates is much weaker and that more research is needed to assess the dilemma hypothesis. Coman and Lloyd (2019) indicated that prudential policies were effective in decreasing the US monetary policy's macro financial spillover effects, and so prudential policies may be significant and beneficial instruments for developing countries that want to preserve the monetary policy autonomy in the face of the global financial cycle. Their study looked at 29 developing countries over the period 2000-2017, and analyzed data measuring the prudential policy actions such as sectoral capital buffers, loan-to-value ratio limits (LTV), required reserves, interbank credit limits, and concentration rate limits. The main finding was that the prudential policies implemented in developing countries reduce the spillover effects of US monetary policy. The authors found that the most effective prudential policy instruments are required reserves and LTV ratio

limits. They reported that required reserves significantly reduced the spillover effect of US monetary policy on domestic credit supply, particularly through bank loans, and that LTV ratio limits reduce the spillover effect on housing prices.

Zehri (2020) used the panel VAR method to examine the effect of capital controls on 24 developing countries in the period 2009 to 2016. The results indicated that capital controls reduced capital inflows, allowed for greater monetary policy autonomy, and reduced pressure on the exchange rate. The author pointed out that the developing countries accumulated excessive international reserves after the 2008 Crisis. Investigating the relationship between capital controls and international reserve accumulation, the author found that the capital controls implemented by the developing countries do not prevent reserve accumulation. The study also found evidence to suggest that capital controls may cause negative spillover effects onto other countries, and stressed that policy coordination among the countries is required to mitigate such negative effects. One of the studies examining the effects of macroprudential policies was made by Aizenman et al. (2020) for the period 1986-2015. The study focused on the link between center and peripheral countries through policy interest rates, and investigated whether this link is affected by a number of macroprudential instruments. To this end, the study first examined the effect of the monetary policies of center countries (US, Japan, and Eurozone) on peripheral countries (146 developing countries), and found that the center countries' policy interest rates do affect peripheral countries. The study then investigated whether macroprudential policies affect the financial link between the center countries and peripheral countries, i.e., whether macroprudential policies are effective in achieving peripheral countries monetary policy autonomy. The study used the macroprudential policy dataset first used by Cerutti et al. (2015). Empirical results show that when the expansionary monetary policy implemented by center countries results in capital inflow to peripheral countries, extensive macroprudential policies are effective in ensuring peripheral countries monetary policy autonomy. The study pointed out that the effectiveness of macroprudential policies varies depending on the policies and macroeconomic conditions in the peripheral countries implementing the same, and concluded that the macroprudential policies are being more effective when the peripheral countries have a current account deficit and lower international reserves and experience an increase in net portfolio flows and credit expansion.

Bergant et al. (2020) investigated whether the macroprudential regulations and capital controls were effective in reducing the effects of global financial shocks on developing markets for the period of 2000-2016 using a sample of 38 emerging market economies. The results showed that macroprudential regulations significantly reduced the effect of global financial shocks on developing markets, but that a similar effect was not the case for capital controls. Considering the periods in which the countries included in their analysis implemented a floating exchange rate regime and thus retained their monetary autonomy, the authors investigated whether macroprudential regulations and capital controls allowed for a more cyclical response by monetary policy to global financial shocks. The analysis results showed that the central banks in developing countries, even after getting the anticipated inflation under control, are generally unwilling to lower policy rates when the global financial conditions tighten. One possible reason for this could be concerns that large exchange rate depreciation or large capital outflows could endanger financial stability. Macroprudential regulations mitigate these concerns and can help the monetary policy to

focus on macroeconomic stability more clearly. Empirical evidence shows that at low macroprudential regulation levels, the central banks in emerging markets tend to respond cyclically by raising the policy rates when the global financial conditions tighten, whereas at higher levels of macroprudential regulation, the monetary policy response becomes counter-cyclical and includes a reduction in policy rates when the global financial conditions tighten. The findings regarding capital controls indicated that tighter capital controls do not support the monetary policy's more cyclical reaction to the global financial conditions. According to the authors, to maximize the benefits of macroprudential measures, the policy-makers should consider using a wide range of measures instead of focusing on a narrow toolset. Imposing capital controls to limit cross-border financial transactions does not appear to be a valid alternative to adopting a robust macroprudential framework. In their study, Friedrich et al. (2020) first investigated the effect of the global financial cycle on monetary policy independence and examined the effects of capital controls, macroprudential policies, and floating exchange rates -- different policy options that countries may use to reduce their sensitivity to global financial cycle -- on monetary policy autonomy. The authors found that all three policy options examined increased monetary policy independence. They observed that while capital controls were the most effective of the three policy instruments in the entire sample, this policy was only effective in emerging market economies, not in developed countries. They also found that the positive effect of floating exchange rates was mainly valid for developed economies, and that the macroprudential policies were the only instrument equally applicable in both country groups, but that their effect was lower than the other two policy instruments. In their study covering 27 developing countries in the period 1996-2017, Batini and Durand (2021) examined the sensitivity of gross capital inflows to the global financial cycle as well as the effect of capital controls and macroprudential policies on such sensitivity. The authors reported that the capital inflows were affected by the global financial cycle, and that higher level capital controls and macroprudential policies reduced sensitivity to the global financial cycle.

## 6. Overall Evaluation and Conclusion

According to the trilemma hypothesis, when capital flows are free, a floating exchange rate regime will allow countries to implement independent monetary policies for local purposes. Rey (2015) found evidence of the existence of a global financial cycle in which the monetary policy of the centre countries is transmitted to the peripheral countries regardless of the applied exchange rate regime, suggesting that as long as capital flows are free in a financially integrated world, even countries that have adopted a floating exchange rate cannot implement an independent monetary policy. This transmission mechanism cannot be prevented by the flexibility of exchange rate, and transforms the trilemma hypothesis into a dilemma that forces countries to make a choice between an independent monetary policy and free capital flows.

The question of whether the trilemma hypothesis is still valid began being asked after Rey's (2015) dilemma suggestion, and many empirical studies were made on the subject. This study used descriptive analysis to examine the findings of empirical studies made on the trilemma-dilemma debate. Most of the studies that concluded that the trilemma hypothesis is still valid also noted that floating exchange rates reduce peripheral countries' sensitivity to the center country's (usually the US) interest rate by reducing the spillover effects of the center country's interest rate, resulting in greater monetary autonomy than that provided by

fixed exchange rates. Some studies reported findings indicating that local financial conditions and capital flows are more sensitive to global financial conditions in countries that adopted a fixed exchange rate than countries that adopted a floating flexible exchange rate system. They noted that exchange rate flexibility still matters in the transmission of global financial conditions to peripheral countries, and stated that this means confirmation of the trilemma hypothesis. Some of the studies that found evidence the trilemma hypothesis was still valid pointed out that factors such as increased financial openness, high foreign currency debt, and the presence of global banks would increase the peripheral countries' sensitivity to global financial conditions and the center country's monetary policies, and weaken the monetary policy independence.

The studies with findings supporting the dilemma hypothesis reported that exchange rate flexibility alone is not sufficient to ensure monetary independence and presented evidence that the center country's interest rates have significant spillover effects on peripheral countries with floating exchange rate regimes and that these peripheral countries tend to follow US monetary policies. Some of these studies found that the spillover effects of center country's monetary policy applied not only to developing countries but also to developed countries. Studies confirming the validity of the dilemma hypothesis highlighted such factors as fear of floating, avoiding appreciation of the domestic currency, and the risks posed by capital flows to financial stability as possible causes directing the peripheral countries to follow the policies of the center country in their monetary policy decisions.

In addition to those studies with findings in favor of the trilemma and dilemma hypothesis, a limited number of studies found evidence confirming the presence of an asymmetric pattern between the trilemma and dilemma. Their results showed that the monetary autonomy that floating exchange rate regimes give to peripheral countries changes depending on whether the center country pursues a loose or tight monetary policy. These studies cited worries about local currency appreciation, the risk of reversal of capital flows, and fear of losing reserves as possible causes of such an asymmetric response by the peripheral countries to the center country's monetary policy. Other studies investigating the validity of the trilemma hypothesis focused more on the role of the global financial cycle. Those studies investigating the effects of the global financial cycle looked more into the impact on capital flows and domestic financial conditions. Their results showed that the global financial cycle does impact domestic financial conditions and capital flows. They also reported that the global financial cycle affected countries with higher external liabilities more.

Capital controls and macroprudential measures are chief among the policy options suggested by Rey (2015) for decreasing the sensitivity of peripheral countries to global financial cycle and increasing the monetary policy independence. In the wake of the 2008 Crisis, many developing countries adopted various capital control measures and macroprudential regulations to prevent the risks to financial stability caused by large-scale capital inflows. Following the Crisis, the risks caused by international capital flows in terms of developing countries reawakened the debates over the use of capital controls as a complementary policy instrument to cope with large and variable capital flows. Some of the empirical studies examining the subject in the context of capital controls present evidence that capital controls reduce the spillover effects of global financial conditions and US monetary policy on peripheral countries and increase monetary independence. Other such studies, albeit fewer in number, report that capital controls have limited effectiveness. A few

studies have reported that capital controls have no effect. Those studies that found that the effects of capital controls were limited pointed out that the effects of capital controls changed depending on the time, the country, and the type of measure used, and noted that they could result in negative spillover effects on other countries. Macroprudential measures are a relatively new policy instrument compared to capital controls and encompass a range of measures for ensuring financial stability. Studies examining the effects of macroprudential measures found evidence that macroprudential measures can help reduce the spillover effects of US monetary policy and help peripheral countries to maintain their monetary policy independence in the face of the global financial cycle. The studies we examined indicated that macroprudential measures are significantly effective in mitigating the negative effects of credit expansions caused by capital flows, especially to developing countries. When the results of studies addressing the effects of capital controls and macroprudential measures are evaluated together, it is possible to say that there is increasing acceptance in the literature that macroprudential measures may be a more beneficial instrument than capital controls when it comes to reducing the transmission of global financial shocks to peripheral countries, and increasing monetary policy autonomy.

Although the debates over the trilemma and dilemma hypotheses are not over, it is possible to make some inferences on the subject based on the findings of the current studies. When the results of all the empirical studies examined are evaluated together, we can say that while exchange rate flexibility is still important in allowing peripheral countries to insulate themselves from global financial shocks and monetary policy changes in center countries, and thus implement a more domestic-oriented monetary policy, its role as a shock absorber is becoming weaker as the financial system becomes increasingly integrated. Global financial conditions and the monetary policies implemented by centre countries, particularly the US, are transmitted to peripheral countries through international capital flows. Therefore, unless the capital flows are completely restricted, global financial shocks and the monetary policies implemented by centre countries will be able to affect the monetary policies of peripheral countries through capital flows. But the increased integration of the global financial system today is making it increasingly difficult for peripheral countries to implement a wholly domestic-oriented monetary policy despite having a floating exchange rate regime. Completely restricting capital flows to allow monetary policy independence does not appear to be a policy option that many countries would choose today. Considering the dependence of developing countries on external financing, this situation is much harder for these countries. In this context, due to decrease of the shock absorber role of exchange rate, it is important for the peripheral countries to use more than one policy instrument to reduce the spillover effects on the domestic economy of financial shocks and changes to the centre countries' monetary policies, and to increase their own monetary policy autonomy. Indeed, the expansionary monetary policies implemented by the central banks of developed countries in the wake of the 2008 Crisis threatened the financial stability of developing countries through capital flows. This led to many countries bolstering their monetary policy approaches with capital controls and macroprudential measures, resulting in an increase in the use of such policy instruments.



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# A Multi-Criteria Decision-Making Framework Based on the MEREC Method for the Comprehensive Solution of Forklift Selection Problem<sup>1</sup>

Nuh Keleş<sup>2</sup> 

<b>Forklift Seçim Probleminin Kapsamlı Çözümü için MEREC Yöntemine Dayalı Çok Kriterli Bir Karar Verme Çerçevesi</b>	<b>A Multi-Criteria Decision-Making Framework Based on the MEREC Method for the Comprehensive Solution of Forklift Selection Problem</b>
<b>Öz</b> Forklift araçları, yüklerin kaldırılması, indirilmesi, yüklenmesi ve taşınması için kullanılır. Bu çalışmanın amacı, çok kriterli karar verme (ÇKKV) yöntemlerinin bir kombinasyonu ile forklift seçimi yapmaktır. 6 kriter, 13 alternatif ve MEREC yöntemi kullanılmıştır. Bu çalışma ayrıca, alternatiflerin daha uygun ve istikrarlı bir şekilde sıralanmasına katkıda bulunmak için bir çift normalleştirme (DNMEREC) sunmaktadır. Alternatiflerin değerlendirilmesinde 21 farklı yöntem kullanılmıştır: ARAS, CODAS, COPRAS, CoCoSo, ELECTRE, MABAC, EDAS, VIKOR, TOPSIS, SAW, WASPAS, PROMETHEE, MOORA, MOOSRA, MAIRCA, OCRA, PIV, GRA, ROV, MARCOS, PSI. Farklı yöntem sıralamaları, Borda ve Copeland yöntemleri kullanılarak entegre edilmiştir.	<b>Abstract</b> Forklift vehicles are used for lifting, lowering, loading, and transporting loads. Aimed of this study is the selection of a forklift vehicle with a combination of multi-criteria decision-making (MCDM) methods. It was used six criteria, 13 alternatives, and the MEREC method. This study also presents a double normalization (DNMEREC) to contribute to a more convenient, and stable ranking of alternatives. 21 different methods were used to evaluate the alternatives: ARAS, CODAS, COPRAS, CoCoSo, ELECTRE, MABAC, EDAS, VIKOR, TOPSIS, SAW, WASPAS, PROMETHEE, MOORA, MOOSRA, MAIRCA, OCRA, PIV, GRA, ROV, MARCOS, PSI. The different methods rankings are integrated using the Borda, and Copeland methods.
<b>Anahtar Kelimeler:</b> MCDM, MEREC, DNMEREC, Forklift	<b>Keywords:</b> MCDM, MEREC, DNMEREC, Forklift
<b>JEL Kodları:</b> C02, C44, L90, R41	<b>JEL Codes:</b> C02, C44, L90, R41

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Yazarın makaleye katkısı %100'dür.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

In logistics, inner transport is a very crucial part of logistics activities, because that connects most of the components, including the relocation of goods within the facilities of the logistics company. Logistics activities have some important parts that warehouse operations cannot be considered without transport-manipulative units (Průša et al., 2018:390). Various loading vehicles are used when loading materials in warehouses, production facilities, and vehicles. There are a great many needs for forklifts in production factories, warehouses, and transportation. Transporting an item (raw material, semi-finished and finished product, etc.) from one point to another with a forklift may be used in a shorter time, quickly, and easily. Selection of manufacturing-transporting-warehousing system equipment is a problem that requires assimilating various knowledge while including an important number of criteria and objectives. Various criteria indicate the existence of varied approaches and models for formulating and solving it (Bogićević et al., 2015:87). Loading equipment selection requires various alternatives and criteria. Evaluating alternatives according to criteria emerges as a real-life problem using MCDM methods. MCDM methods help people in lots of real-life problems. Decision making, which can occur at any moment of human life, shows its existence in many problems. In order to make a decision, the criteria and the methods to be used should be determined. Over the past three decades, a wide variety of criterion weight determination methods have found great application in almost many research studies where more than one criterion is used to evaluate alternative performances of attributes (Pekkaya and Keleş, 2021:6).

The decision problem envisaged to be addressed is solved by considering the existing alternatives and criteria together. Determining the criterion weights in the first place becomes an important problem to be solved (Keleş, 2022:231). In this study, multiple different methods were used and evaluated from many different perspectives. The MEREC method, which has calculation steps based on removing the effect of criteria on total performance one by one, was introduced to the literature as an objective criterion weight determination method by Keshavarz-Ghorabae et al. (2021). Although double normalization, which is a combination of linear and vector normalization, was used in some studies in the literature (Ecer and Hashemkhani Zolfani, 2022; Hezam et al., 2023), in this study, criteria maximization was also used in addition to the original minimization normalization of the MEREC method with a different framework. A variety of methods were also used to rank the alternatives. The motivation of this study is not only the forklift vehicle selection with a narrow framework but also the forklift vehicle selection with more than one available decision-making method. Another motivation is to examine how decision-making methods yield results in different frameworks. This study aimed to the selection of a forklift vehicle with a combination of comprehensive MCDM methods.

The remainder of the study is organized as follows. Section 2 introduces the literature belonging to the material selection and methods. Section 3 describes all methods and related materials. Section 4 presents the obtaining results of the study. Section 5 provides conclusions from the study, with some suggestions for future studies.

## 2. Literature review

Logistics, which exists everywhere where there is production and consumption, has a very old foundation, started to be handled in a systematic and organized way in the last century, and logistics has perhaps never been as important as it is today. Various equipment and systems can be used in the logistics sector. The right choice of material handling equipment/systems (MHE) has significant effects on the overall efficiency of the production environment. Considering this important effect, it is necessary to develop a systematic approach to the MHE system selection problem (Tuzkaya et al., 2011:144). Various studies have been carried out for MHE system selection. The procedure of MHE selection (especially forklifts) is a crucial problem for decision-maker in manufacturing, distribution, transportation, and warehousing. Studies used in the selection of MHE (forklifts) in the literature are presented in Table 1.

Table 1. MHE selection literature

Researcher/s / Year	Method/s	Research subjects
Tuzkaya et al., 2011	PROMETHEE	Evaluation of MHE system alternatives Selection of forklift unit for warehouse operation
Atanasković et al., 2013	DELPHY, VIKOR	
Bogićević et al., 2015	Fuzzy AHP, VIKOR	MHE selection
Pamučar and Ćirović, 2015	DEMATEL–MABAC	The selection of transport and handling resources in logistics centers
Sarıçalı and Kundakcı, 2017	KEMIRA-M	Evaluation of forklift alternatives
Voćkić et al., 2018	Rough SWARA, ARAS	Selection of electric forklift
Průša et al., 2018	TOPSIS	Forklift truck selection
Agarski et al., 2019	DW, FT, AHP, RSP	Comparison of approaches for selecting equipment
Fazlollahtabar et al., 2019	FUCOM, WASPAS	Selection of forklift in a warehouse
Ersoy, 2020	TOPSIS	Green machine selection in a manufacturing company
Demirci and Manavgat, 2021	VZA, TOPSIS, VIKOR	Selection of forklift vehicle

Various alternatives and criteria have been used in the studies accessed in the literature. There have been studies that have selected forklifts before, but it is thought that the studies are weak in terms of the number of criteria, the number of alternatives, and the methods used. It is noteworthy that TOPSIS and VIKOR methods are used more than other methods. Selection of MHE for requirements and working area is one of the problems of MCDM, i.e. the election process may not be sufficiently structured, it is dependent on various areas of knowledge, and requires multiple decision-making (Bogićević et al., 2015:87).

In this case, the use of one or more of the methods may be insufficient. Thinking more broadly and seeing the problem from wider angles also expands the inclusiveness of the solution. Therefore, it is preferable to carry out studies with a wider range and make decisions accordingly, rather than being content with only one or two methods.

### 3. Materials and methods

There are many kinds of forklifts that are used in warehouses and factories, and used handling of palette loads in receiving, disposal, and transport, as well as loading and unloading of materials (Atanasković et al., 2013:379). There are different types of forklifts when deciding and decision makers select important criteria based on which different forklift trucks are chosen (Průša et al., 2018:390). The selection of the most suitable one among them requires various criteria. The criteria used in the studies are presented in Table 2.

Table 2. Criteria of studies used in the literature

Researcher/s / Year	Criteria
Tuzkaya et al., 2011	Material-related features, costs-related features, technical features, characteristics related to the performance of the transport vehicle, and characteristics related to the use of the transport vehicle
Atanasković et al., 2013	Purchase price, service network, supply of spare parts, manufacturer warranty, average maintenance cost, fuel consumption, maximum bearing capacity
Bogićević et al., 2015	Costs: fixed and variable load capacity, turning radius, speed, lifting height, width and safety, and ergonomics
Pamučar and Ćirović, 2015	Price, manufacturer's warranty, availability of spare parts, service network, average cost of maintenance, maximum bearing capacity, maximum lifting capacity, fuel consumption, movement speed of the forklift, speed of lifting/lowering loads
Sarıçalı and Kundakcı, 2017	Outer turning radius, lift height, overhead guard height, forklift price, brand reliability, service network and warranty period
Vočkić et al., 2018	Purchase price, lifetime, exploitation time, maximum lift capacity, maximum lift height (mm), battery capacity, transport weight
Průša et al., 2018	Capacity of lifting, capacity of battery, lifting height, travel speed with load, price
Agarski et al., 2019	Price, transporting distance, technical criteria group, year of build, maximum load, working hours, rated lift, battery year of build, battery capacity, safety criteria group, extra lights, full cabin, protective grill roof, load measuring, easy belt restraint system
Fazlollahtabar et al., 2019	Purchase price, age, working hours, maximum lift height, ecological factors, maximum load capacity, supply of spare parts
Ersoy, 2020	Price, height of lifting, lifting speed with load, lifting capacity, speed of lowering with load, movement speed
Demirci and Manavgat, 2021	Price, fuel consumption, loading capacity, engine life, after sales support possibilities

In the studies some criteria and alternatives were used, at least five criteria, at most 13 criteria, and at least four alternatives, at most 10 alternatives. After examining the studies used in the literature, the criteria can be determined. Moreover, some information can be obtained from production and transport companies operating in the sector. Operating in a free zone, 3 production factories and 2 transportation firms (railway and highway) were field visited, and interviews were held with responsible managers. As a result of these, it is decided to use six criteria according to the literature reviews and experts' views, in choosing the suitable forklift. It is determined these criteria are price, engine performance, weight, loading capacity, speed of lifting loads, and movement speed.

In this context, the proposed approach for solving this problem consists of two steps. In the first step criteria weights are determined, and in the second step, alternatives are selected.

The MEREC method can be used to determine/evaluate the objective weights of the set of particular criteria. The MEREC method is a weighting method developed by Keshavarz-Ghorabae et al. (2021). This method utilizes each criterion's removal effect on the estimation of alternatives to obtain the criteria weights (Mishra et al., 2022:24414). If one criterion has more variation, it will have more weight than the others. In this method, removing the effect of one criterion on the others has greater weights when it leads to a greater effect on the overall performance of the alternatives (Keleş, 2023:5). Ease of understanding, computational steps/processes, and a robust mathematical background can be associated as the important advantages (Kaya et al., 2022:4). The calculation process/steps are clear, highly logical, and methodical (Simić et al., 2022:2). Used to find the objective weight: the CRITIC method is based on the correlation between the criterion, and the Entropy method is based on the hidden/implicit information in the total amount of information in the decision matrix (Keleş and Pekkaya, 2023:6-7). The MEREC method is that, besides being a new method, it is based on removing the effect of the criteria on the total performance one by one with a different understanding from the previously used CRITIC and Entropy methods. Another reason for choosing the MEREC method is to consider the large difference between the data sizes of the criteria because some criteria have values expressed in tens, while some criteria have values expressed in hundreds of thousands. The MEREC method was preferred instead of other objective criteria weight determination methods for these reasons. Moreover, in addition to the minimization that the MEREC method uses when normalizing the criteria, double normalization is used with using the maximization of the criteria. It is noteworthy that the MEREC method has been accepted very quickly since it was introduced to the literature, and it has found application in many different fields. It has been used in some studies in the literature, in the selection of a truck mixer concrete pump (Ivanović et al., 2022), in offshore wind turbine selection (Yu et al., 2022), pallet truck selection (Ulutaş et al., 2022), in watershed prioritization for flood risk assessment (Mahmoodi et al., 2023), and evaluating the entrepreneurial and innovative performance of universities (Satici, 2023).

There are many MCDM methods in the literature. MCDM methods have different calculation stages and different properties (Sönmez Çakır and Pekkaya, 2020:1178). Addressing the problem by focusing on a single feature of the different methods provides a single perspective on the solution. Success is achieved when providing solutions to decision-making problems, multi-dimensional thinking, and multi-faceted decision making. When the findings obtained according to different methods are integrated, a common decision affects the result. For these reasons, it is considered that the selection problem can be solved more appropriately by using as many methods as a possible comprehensive way. In this study: ARAS, COPRAS, MABAC, EDAS, CoCoSo, ELECTRE, VIKOR, TOPSIS, SAW, WASPAS, PROMETHEE, MOORA, MOOSRA, CODAS, MAIRCA, OCRA, PIV, GRA, ROV, MARCOS, PSI methods were used. The mentioned 21 different methods rank the alternatives according to the different computational stages. It is thought that what kind of findings the methods with different calculation stages will reveal on the ranking results can be seen in this study. Each method has its solution steps. However, since many methods are used in this study with multidimensional thinking, explaining the methods and including the solution stages of so many methods make



things difficult. The MEREC method has been explained since it is a relatively new method and has relatively few applications in the literature for these reasons. However, the double normalization DNMEREC method is explained together for new perspectives in different frameworks. In the double normalization DNMEREC method, normalization is performed according to the maximization of the criteria together with the minimization of the criteria used in the classical MEREC method, and these two are optimized for more appropriate stability. Keshavarz-Ghorabae et al. (2021) remarked that the solution/process steps of the MEREC method are done following. Also, some changes have been added in step 2 and added step 7 for the double normalization procedure.

*Step 1:* A decision matrix ( $X$ ) is created to show the value of each alternative for each criterion. Here,  $m$  and  $n$  indicate the number of criteria and the number of alternatives respectively.

$$X = [x_{ij}]_{m \times n} \quad (1)$$

*Step 2:* Normalization is done for minimization ( $N$ ) and then for maximization ( $N'$ ) in two ways. Here,  $B$  is a beneficial criterion, and  $NB$  is a non-beneficial criterion.

$$N_{ij} = \left\{ \frac{\min_k x_{ij}}{x_{ij}} \right\}_{j \in B} \quad N'_{ij} = \left\{ \frac{x_{ij}}{\max_k x_{kj}} \right\}_{j \in B} \quad (2)$$

$$N_{ij} = \left\{ \frac{x_{ij}}{\max_k x_{kj}} \right\}_{j \in NB} \quad N'_{ij} = \left\{ \frac{\min_k x_{ij}}{x_{ij}} \right\}_{j \in NB} \quad (3)$$

*Step 3:* Obtaining the overall performance using the logarithmic measures.

$$S_i = \ln \left( 1 + \left( \frac{1}{m} \sum_j |\ln(N_{ij})| \right) \right) \quad (4)$$

*Step 4:* Obtaining the discrete overall performance again for removal effect.

$$S'_{ij} = \ln \left( 1 + \left( \frac{1}{m} \sum_{k, k \neq j} |\ln(N_{ij})| \right) \right) \quad (5)$$

*Step 5:* Obtaining the absolute deviations.

$$E_j = \sum_i |S'_{ij} - S_i| \quad (6)$$

*Step 6:* The final criterion weights ( $w_j$ ) are calculated by normalizing the absolute deviations ( $E_j$ ).

$$w_j = \frac{E_j}{\sum_k E_k} \quad (7)$$

*Step 7:* The criteria weights calculated separately for minimization and maximization are combined and normalized.

$$dw_j = \frac{w_{jmin} + w_{jmax}}{2}, \quad fw_j = \frac{dw_j}{\sum_{j=1}^n dw_j} \quad (8)$$

After the weights are found, the ranking of the alternatives can be done according to the minimization, maximization and optimization/mean values of the criteria.

#### 4. Selecting the most suitable forklift using various MCDM methods

It should be stated that six criteria were presented from academic literature and market actors, basis as important criteria in the selection of the most appropriate forklift vehicles. Namely, criteria are following: forklift price (TL), forklift weight (kg), forklift load capacity (kg), forklift movement speed (km/h), speed of lifting loads (mm/s), and engine performance (kW).

These determined criteria are weighted by the MEREC method. The decision matrix created according to the data obtained from the market is presented in Table 3.

Table 3. Decision matrix

	Price-NB	Weight-NB	Load capacity-B	Movement speed-B	Speed of lifting loads-B	Engine performance-B	Model
A1	80167	2650	1000	14.0	290	8.0	CPD10
A2	445560	4450	3000	19.0	500	36.8	CPCD30
A3	139280	3320	2000	17.0	400	39.0	CPCD20FR
A4	176712	4900	4000	18.0	300	45.0	CPCD40FR
A5	132316	2650	1500	14.5	500	30.0	CPCD15FR
A6	159302	4580	3500	17.0	375	39.0	CPCD35FR
A7	149726	3600	2500	15.0	400	39.0	CPCD25FR
A8	146244	4320	3000	18.0	400	39.0	CPCD30FR
A9	154915	4200	3500	18.0	300	58.0	LTF-3500A
A10	131219	2650	1500	14.5	500	30.0	SYF15
A11	137713	3320	2000	17.0	400	39.0	SYF20
A12	140325	3600	2500	17.0	400	40.0	SYF25
A13	153313	4580	3500	17.0	375	40.0	SYF35
min.	80167	2650	1000	14.0	290	8.0	
max.	445560	4900	4000	19.0	500	58.0	

Note: B: beneficial, NB: non-beneficial, min.: minimum, max.: maximum.

According to the stages of the MEREC weighting method, the decision matrix is created, and normalization is done (Equations 2 and 3). Normalization can be done according to the minimization, maximization, and optimization/mean values of the criteria.

Table 4. Normalization matrix for criteria minimization

	C1	C2	C3	C4	C5	C6
A1	0.180	0.541	1.000	1.000	1.000	1.000
A2	1.000	0.908	0.333	0.737	0.580	0.217
A3	0.313	0.678	0.500	0.824	0.725	0.205
A4	0.397	1.000	0.250	0.778	0.967	0.178
A5	0.297	0.541	0.667	0.966	0.580	0.267
A6	0.358	0.935	0.286	0.824	0.773	0.205
A7	0.336	0.735	0.400	0.933	0.725	0.205
A8	0.328	0.882	0.333	0.778	0.725	0.205
A9	0.348	0.857	0.286	0.778	0.967	0.138
A10	0.295	0.541	0.667	0.966	0.580	0.267
A11	0.309	0.678	0.500	0.824	0.725	0.205
A12	0.315	0.735	0.400	0.824	0.725	0.200
A13	0.344	0.935	0.286	0.824	0.773	0.200

Unlike the minimization used in the classical MEREC method for the criteria, calculations can be made using maximization according to Step 2 with the help of Equations 2 and 3.

Table 5. Normalization matrix for criteria maximization

	C1	C2	C3	C4	C5	C6
A1	1.000	1.000	0.250	0.737	0.580	0.138
A2	0.180	0.596	0.750	1.000	1.000	0.634
A3	0.576	0.798	0.500	0.895	0.800	0.672
A4	0.454	0.541	1.000	0.947	0.600	0.776
A5	0.606	1.000	0.375	0.763	1.000	0.517
A6	0.503	0.579	0.875	0.895	0.750	0.672
A7	0.535	0.736	0.625	0.789	0.800	0.672
A8	0.548	0.613	0.750	0.947	0.800	0.672
A9	0.517	0.631	0.875	0.947	0.600	1.000
A10	0.611	1.000	0.375	0.763	1.000	0.517
A11	0.582	0.798	0.500	0.895	0.800	0.672
A12	0.571	0.736	0.625	0.895	0.800	0.690
A13	0.523	0.579	0.875	0.895	0.750	0.690

And then, the overall performance is found separately (Equation 4), the performances are found by removing the criteria one by one (Equation 5), the absolute deviations are calculated separately (Equation 6), and the criteria weights are found (Equation 7). The criteria weights obtained according to the calculation steps of the MEREC method for minimization, maximization, and mean are presented in Table 6.

Table 6. Criteria weights

	C1	C2	C3	C4	C5	C6
w_min	0.263	0.069	0.207	0.038	0.068	0.356
w_max	0.278	0.139	0.212	0.056	0.104	0.211
w_mean	0.270	0.104	0.209	0.047	0.086	0.283

For the minimization approach: the engine performance criterion (C6) was found as the most important (35.6%) criterion in the first rank. And then it was followed by: price (C1-26.3%), loading capacity (C3-20.7%), weight (C2-6.9%), speed of lifting loads (C5-6.8%), and the movement speed criteria (C4-3.8%). For the maximization approach: the price criterion (C1) was found as the most important (27.8%) in the first rank. And then it was followed by: loading capacity (C3-21.2%), engine performance criteria (C6-21.1%), weight (C2-13.9%), speed of lifting loads (C5-10.4%), and movement speed criteria (C4-5.6%). Keshavarz-Ghorabae et al. (2021) use minimization of the criteria, unlike that study the current study found both different criteria weights and the criteria weight rankings changed according to the maximization.

It is considered that common and stability weights can be used by taking the mean of the weights used in the MEREC method in order to tolerate both approaches within certain limits. For the mean approach: the engine performance (C6-28.3%) was found as the most important criteria in the first rank. And then it was followed by: price (C1-27%), loading capacity (C3-20.9%), weight (C2-10.4%), speed of lifting loads (C5-8.6%), and the movement speed criterion (C4-4.7%).

The ranking of the 13 alternatives was calculated using different MCDM methods according to the criteria weights and the decision matrix. The minimization, maximization, and mean scores of the methods according to the findings of the different methods are given in Appendix A1, A2 and A3. The rankings found according to mean criteria weights are presented in Table 7.

Table 7. Rankings of the alternatives

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21
A1	12	12	13	12	13	13	13	12	13	13	13	12	12	3	13	13	12	11	13	13	13
A2	13	13	12	13	12	12	12	13	12	12	12	13	13	11	12	12	13	13	12	12	8
A3	9	9	8	8	7	6	9	9	9	9	9	9	6	10	8	9	9	10	8	9	6
A4	2	2	2	2	11	3	2	2	2	2	2	2	7	2	2	2	2	2	2	2	11
A5	11	11	11	11	10	10	11	11	11	11	11	11	11	13	11	11	11	4	11	11	3
A6	4	4	6	4	5	11	6	5	4	4	4	4	9	5	6	4	4	6	6	4	10
A7	7	7	9	9	8	9	7	7	7	7	7	7	8	8	9	7	7	12	9	7	12
A8	5	5	4	5	3	7	5	4	5	5	5	5	4	6	4	5	5	7	4	5	7
A9	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A10	10	10	10	10	9	8	10	10	10	10	10	10	10	12	10	10	10	3	10	10	2
A11	8	8	7	7	6	4	8	8	8	8	8	8	5	9	7	8	8	9	7	8	5
A12	6	6	5	6	2	1	4	6	6	6	6	6	2	7	5	6	6	8	5	6	4
A13	3	3	3	3	4	5	3	3	3	3	3	3	3	4	3	3	3	5	3	3	9

**Note:** M1: ARAS., M2: COPRAS, M3: MABAC, M4: EDAS, M5: COCOSO, M6: ELECTRE, M7: VIKOR, M8: TOPSIS, M9: SAW, M10: WASPAS, M11: PROMETHEE, M12: MOORA, M13: MOOSRA, M14: CODAS, M15: MAIRCA, M16: OCRA, M17: PIV, M18: GRA, M19: ROV, M20: MARCOS, M21: PSI.

Except for the ELECTRE method (A9 ranked 2nd), the A9 alternative (LTF-3500A) was found in the first rank in all other methods. It can be explained that in the ELECTRE method, a different ranking is created because the criteria are ranked one by one according to net superiority by pairwise comparison of the criteria. On the other hand, the 12th and 13th alternatives have always been in the last rank according to different methods.

Borda and Copeland rules are frequently used in the literature to integrate the rankings of alternatives found according to various methods (Biswas et al., 2022; Daniş, 2022; Keleş, 2022). The Borda method can be used to determine the most preferred alternative with a common decision after ranking by different MCDM methods. Alternatives with the same score can be assigned to the same rank in the results of the Borda method. In the Copeland method, the difference in the number of victories and loss of an alternative to the other alternatives is taken and the alternatives are ranked with the obtained scores. The winner score, the defeat score, and the Copeland score are calculated according to the stages of the method and the alternatives are combined in a single rank. Table 8 shows the final rankings using Copeland and Borda methods according to minimization, maximization, and mean approaches.

Table 8. Final rankings of the alternatives

	Copeland_min		Copeland_max		Copeland_mean		Borda_min		Borda_max		Borda_mean	
	Cpi	Rank	Cpi	Rank	Cpi	Rank	Scores	Rank	Scores	Rank	Scores	Rank
A1	-12	13	-10	12	-12	13	30	13	54	12	40	12
A2	-10	12	-12	13	-10	12	41	12	32	13	39	13
A3	-4	9	-4	9	-4	9	116	9	121	8	118	9
A4	10	2	10	2	10	2	228	2	198	3	228	2
A5	-8	11	-8	11	-8	11	75	11	92	11	78	11
A6	4	5	4	5	6	4	190	4	169	6	179	6
A7	-2	8	-2	8	0	7	132	8	111	10	124	8
A8	6	4	6	4	4	5	188	5	197	4	189	4
A9	12	1	12	1	12	1	272	1	272	1	272	1
A10	-6	10	-6	10	-6	10	97	10	112	9	100	10
A11	0	7	0	7	-2	8	138	7	147	7	140	7
A12	2	6	2	6	2	6	184	6	196	5	185	5
A13	8	3	8	3	8	3	222	3	210	2	219	3

Borda and Copeland compromise rankings gave almost the same results, except for ranks 4 and 5. According to the findings with overall, in the first three ranks were found as A9, A4, and A13 alternatives. The fact that the A9 (LTF-3500A) alternative is in the first rank may be explained because it has optimal scores as much as it is far ahead of the other alternatives in the (C6)-engine performance criterion (highest criterion weight). Although the A1 alternative has the lowest price, it can be said that it is in the last rank because it has the lowest level in all other criteria.

Moreover, a normality test was performed to examine the correlations between different ranking results, and it was decided that some series were not normally distributed (the results of the 9 methods (CoCoSo (0.000), MAIRCA (0.017), MABAC (0.017), MOORA (0.027), MOOSRA (0.003), PIV (0.027), ROV (0.017), PROMETHEE (0.012), TOPSIS (0.004), and VIKOR (0.012)) were not normally distributed, ( $p < 0.05$ ) according to the Shapiro-Wilk (S-W) test of normality. Because the observed values of these methods deviate significantly from the expected normal values. Non-normally distributed findings were analyzed by Spearman Rho rank correlation analysis. Mean approach correlation results about the methods are presented in Appendix B.

The evaluation made according to the Spearman-Rho correlations between the methods draws attention that some important findings. Collecting and analyzing the correlation scores prevented some important findings from being overlooked. Among the 21 methods, it is found as the ROV method with the highest correlation with other methods. And then, the MABAC, EDAS, TOPSIS, and MOORA methods from which the almost same ranking results were obtained were found to be highly correlated among themselves and with others. MAIRCA method ranking was found to be completely inversely correlated with 18 different methods, and negatively inversely correlated with all other methods except PIV and VIKOR ranking. Similar findings for reverse correlations were also valid for the PIV and VIKOR methods. Because PIV and VIKOR method rankings, like MAIRCA method rankings, were found to be completely inversely correlated to other method rankings, excluding themselves (PIV-VIKOR-MAIRCA).

## 5. Conclusion

In a decision-making environment where managers, academics or researchers frequently apply, there is a need for various alternatives and criteria by which alternatives are evaluated. Objective weights can be given to the criteria according to the market values of the alternatives. In this study, a double normalization with the MEREC method is used, which is one of the weight determination methods using nonlinear logarithmic measures based on deviations and eliminating the effects of criteria on overall performance. Considering that the decision makers may attach great importance to the engine performance and price criteria when choosing the most suitable forklift vehicle for daily life problems, it can be said that the criteria weights are determined appropriately, with the engine performance (28.3%) and price (27%) criteria found first and foremost in this study. We used 21 different MCDM methods to rank the alternatives. We integrated the rankings found with the Borda and Copeland methods and obtain a single ranking result. The A9 alternative (LTF-3500A) was ranked first because it had optimum scores in many criteria.

It contributes to the literature by searching for a solution to the decision-making problem with many different methods. In this study, in addition to the criteria minimization used by the MEREC method, the criteria maximization was also used using double normalization and the effect of the DNMEREC method was examined. The correlations of the methods with each other can be analyzed. In a different decision problem, PIV-VIKOR-MAIRCA methods can be evaluated among themselves. Because these methods were found to be completely inversely related to the others. Meanwhile, although the EDAS method was found with high correlations with others in the minimization approach, it is the ROV method that is highly correlated with others according to the mean approach. Since the ROV, MABAC, EDAS, TOPSIS, and MOORA methods are highly correlated, the ranking results can be evaluated together in another decision problem. It has been shown in this study that different approaches can be found in different criteria weights and different alternative rankings. This situation affects the importance of the decision environment in terms of the decision-making problem and the way the decision-maker deals with the issue. In future studies, it is thought that ranking can be made with other different possible MCDM methods that will be introduced to the literature or not used in this study.

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## Appendix A.1. Scores of the alternatives using minimization

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21
A1	0.510	64.805	-0.236	1.085	0.299	-4.181	0.554	0.051	-0.251	0.475	0.019	1.427	0.000	0.204	0.663	0.166	0.500	-0.494	0.502	1.000	0.426
A2	0.552	68.642	-0.373	2.110	0.098	-3.716	0.537	0.041	-0.120	0.547	-0.005	0.975	0.514	0.228	0.721	0.231	0.575	-0.183	0.355	0.697	0.534
A3	0.629	80.324	-0.151	2.604	0.567	0.791	0.588	0.030	0.034	0.606	0.100	2.399	1.409	0.123	0.739	0.308	0.637	0.000	0.681	0.316	0.633
A4	0.707	89.983	0.632	2.401	0.768	1.655	0.686	0.023	0.114	0.681	0.130	2.388	1.905	0.092	0.710	0.348	0.716	0.129	0.747	0.151	0.701
A5	0.578	73.587	-0.695	2.480	0.481	-1.325	0.600	0.034	-0.026	0.558	0.076	2.157	0.962	0.147	0.752	0.278	0.587	-0.036	0.600	0.486	0.573
A6	0.669	85.089	0.126	2.638	0.654	-1.479	0.618	0.026	0.076	0.644	0.116	2.356	1.615	0.107	0.715	0.329	0.677	0.083	0.712	0.266	0.670
A7	0.636	81.172	-0.120	2.601	0.568	-0.556	0.583	0.029	0.037	0.613	0.104	2.347	1.465	0.119	0.709	0.310	0.644	0.014	0.692	0.308	0.642
A8	0.663	84.320	0.026	2.661	0.635	0.763	0.609	0.026	0.075	0.638	0.114	2.438	1.569	0.109	0.739	0.329	0.671	0.067	0.713	0.267	0.667
A9	0.785	100.000	1.420	2.818	0.973	2.483	0.777	0.016	0.209	0.754	0.165	3.018	2.470	0.058	0.757	0.396	0.793	0.329	0.843	0.000	0.778
A10	0.579	73.796	-0.684	2.481	0.484	0.417	0.601	0.034	-0.025	0.559	0.076	2.171	0.966	0.147	0.753	0.279	0.588	-0.036	0.601	0.485	0.575
A11	0.631	80.577	-0.141	2.606	0.571	1.503	0.590	0.029	0.035	0.608	0.100	2.420	1.414	0.122	0.741	0.309	0.639	0.000	0.682	0.315	0.635
A12	0.656	83.678	0.000	2.663	0.615	2.673	0.601	0.027	0.066	0.632	0.111	2.518	1.546	0.112	0.742	0.324	0.664	0.041	0.710	0.264	0.661
A13	0.681	86.555	0.212	2.657	0.686	0.972	0.627	0.025	0.087	0.655	0.121	2.454	1.679	0.102	0.720	0.335	0.688	0.086	0.727	0.241	0.682

**Note:** M1: ARAS, M2: COPRAS, M3: CODAS, M4: COCOSO, M5: EDAS, M6: ELECTRE, M7: GRA, M8: MAIRCA, M9: MABAC, M10: MARCOS, M11: MOORA, M12: MOOSRA, M13: OCRA, M14: PIV, M15: PSI, M16: ROV, M17: SAW, M18: PROMETHEE, M19: TOPSIS, M20: VIKOR, M21: WASPAS.

Appendix A.2. Scores of the alternatives using maximization

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21
A1	0.608	81.941	0.601	1.100	0.593	-2.266	0.102	0.045	-0.156	0.560	0.007	1.124	0.083	0.160	0.663	0.209	0.601	-0.345	0.604	0.815	0.528
A2	0.557	72.47 <sub>1</sub>	-0.444	1.993	0.163	-3.088	0.091	0.042	-0.122	0.546	-0.056	0.755	0.000	0.224	0.721	0.225	0.586	-0.195	0.287	0.941	0.540
A3	0.641	87.237	-0.242	2.469	0.621	0.957	0.099	0.029	0.047	0.608	0.055	1.604	0.923	0.112	0.739	0.310	0.652	0.020	0.704	0.261	0.647
A4	0.684	92.74 <sub>0</sub>	0.411	2.164	0.797	-0.289	0.109	0.029	0.049	0.645	0.070	1.566	1.260	0.098	0.710	0.311	0.692	0.066	0.730	0.252	0.676
A5	0.628	85.162	-0.334	2.416	0.650	0.349	0.110	0.030	0.042	0.599	0.045	1.555	0.665	0.122	0.752	0.308	0.643	0.017	0.657	0.368	0.624
A6	0.666	90.31 <sub>5</sub>	0.084	2.449	0.690	-2.303	0.100	0.029	0.047	0.630	0.065	1.575	1.096	0.103	0.715	0.310	0.676	0.052	0.736	0.200	0.668
A7	0.643	87.422	-0.221	2.449	0.589	-0.756	0.096	0.030	0.035	0.609	0.057	1.578	0.970	0.111	0.709	0.304	0.653	0.008	0.718	0.184	0.650
A8	0.665	90.060	-0.037	2.488	0.671	0.734	0.100	0.028	0.062	0.629	0.065	1.620	1.062	0.103	0.739	0.317	0.675	0.049	0.742	0.130	0.671
A9	0.736	100.00 <sub>0</sub>	0.703	2.542	0.958	1.791	0.117	0.023	0.128	0.693	0.095	1.886	1.609	0.073	0.757	0.351	0.743	0.195	0.796	0.000	0.731
A10	0.629	85.414	-0.321	2.417	0.654	0.904	0.110	0.030	0.043	0.601	0.046	1.564	0.669	0.122	0.753	0.308	0.644	0.017	0.658	0.367	0.626
A11	0.643	87.528	-0.227	2.471	0.627	1.513	0.099	0.029	0.048	0.610	0.056	1.616	0.929	0.112	0.741	0.311	0.654	0.020	0.706	0.259	0.649
A12	0.662	90.06 <sub>7</sub>	-0.112	2.508	0.647	2.168	0.100	0.028	0.069	0.627	0.064	1.679	1.037	0.103	0.742	0.321	0.673	0.046	0.735	0.124	0.670
A13	0.676	91.564	0.144	2.462	0.726	0.285	0.102	0.029	0.056	0.638	0.069	1.625	1.143	0.099	0.720	0.315	0.685	0.053	0.749	0.184	0.678

**Note:** M1: ARAS, M2: COPRAS, M3: CODAS, M4: COCOSO, M5: EDAS, M6: ELECTRE, M7: GRA, M8: MAIRCA, M9: MABAC, M10: MARCOS, M11: MOORA, M12: MOOSRA, M13: OCRA, M14: PIV, M15: PSI, M16: ROV, M17: SAW, M18: PROMETHEE, M19: TOPSIS, M20: VIKOR, M21: WASPAS.

## Appendix A.3. Scores of the alternatives using mean

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21
A1	0.559	73.007	0.205	1.092	0.437	-3.224	0.583	0.048	-0.203	0.518	0.013	1.253	0.000	0.182	0.663	0.187	0.550	-0.420	0.552	1.000	0.476
A2	0.554	70.45 <sub>3</sub>	0.406	2.044	0.125	3.402	0.542	0.042	0.171	0.547	0.031	0.857	0.216	0.226	0.721	0.228	0.580	0.189	0.321	0.857	0.537
A3	0.635	83.643	-0.199	2.529	0.590	0.874	0.590	0.029	0.041	0.607	0.078	1.952	1.125	0.118	0.739	0.309	0.645	0.010	0.693	0.315	0.640
A4	0.695	91.30 <sub>5</sub>	0.519	2.270	0.778	0.683	0.670	0.026	0.082	0.663	0.100	1.922	1.541	0.095	0.710	0.330	0.704	0.098	0.740	0.173	0.689
A5	0.602	79.138	-0.524	2.443	0.556	-0.488	0.629	0.032	0.008	0.579	0.060	1.822	0.772	0.135	0.752	0.293	0.615	-0.010	0.628	0.445	0.599
A6	0.667	87.59 <sub>3</sub>	0.106	2.533	0.667	1.891	0.610	0.028	0.062	0.637	0.090	1.913	1.314	0.105	0.715	0.320	0.676	0.068	0.725	0.208	0.669
A7	0.639	84.172	-0.170	2.516	0.577	-0.656	0.580	0.030	0.036	0.611	0.080	1.915	1.176	0.115	0.709	0.307	0.649	0.011	0.705	0.243	0.646
A8	0.664	87.070	-0.005	2.564	0.649	0.748	0.605	0.027	0.068	0.634	0.089	1.972	1.275	0.106	0.739	0.323	0.673	0.058	0.728	0.199	0.669
A9	0.761	100.000	1.058	2.665	0.966	2.137	0.739	0.019	0.169	0.724	0.130	2.377	1.998	0.065	0.757	0.373	0.768	0.262	0.820	0.000	0.754
A10	0.604	79.368	-0.512	2.445	0.560	0.661	0.630	0.032	0.009	0.580	0.061	1.833	0.776	0.134	0.753	0.293	0.616	-0.010	0.629	0.444	0.600
A11	0.637	83.914	-0.186	2.530	0.595	1.508	0.592	0.029	0.042	0.609	0.078	1.968	1.130	0.117	0.741	0.310	0.646	0.010	0.694	0.314	0.642
A12	0.659	86.74 <sub>3</sub>	-0.057	2.577	0.629	2.421	0.599	0.027	0.067	0.629	0.088	2.044	1.250	0.108	0.742	0.323	0.668	0.043	0.723	0.193	0.665
A13	0.678	88.95 <sub>3</sub>	0.178	2.548	0.702	0.628	0.618	0.027	0.072	0.647	0.095	1.982	1.370	0.100	0.720	0.325	0.687	0.070	0.740	0.180	0.680

**Note:** M1: ARAS, M2: COPRAS, M3: CODAS, M4: COCOSO, M5: EDAS, M6: ELECTRE, M7: GRA, M8: MAIRCA, M9: MABAC, M10: MARCOS, M11: MOORA, M12: MOOSRA, M13: OCRA, M14: PIV, M15: PSI, M16: ROV, M17: SAW, M18: PROMETHEE, M19: TOPSIS, M20: VIKOR, M21: WASPAS.

Appendix B. Correlations between methods using mean

	OCRA	MOOSRA	MOORA <sub>A</sub>	MARC <sub>OS</sub>	MABAC	MAIRCA	GRA	ELECTR <sub>F</sub>	EDAS	COCOSO	CODAS	COPRAS <sub>C</sub>	ARAS
ARAS													1.000
COPRAS												1.000	1
CODAS											1.000	0.725	0.725
COCOSO										1.000	0.308	0.681	0.681
EDAS								1.000	1.000	0.698	0.709	0.984	0.984
ELECTRE								1.000	0.555	0.692	0.154	0.484	0.484
GRA							1.000	0.390	0.637	0.324	0.313	0.61	0.61
MAIRCA						1.000	-0.61	-0.637	-0.978	-0.731	-0.648	-0.962	-0.962
MABAC					1.000	-1	0.61	0.637	0.978	0.731	0.648	0.962	0.962
MARCOS				1.000	0.967	-0.967	0.599	0.478	0.978	0.687	0.681	0.995	0.995
MOORA			1.000	0.995	0.962	-0.962	0.61	0.484	0.984	0.681	0.725	1	1
MOOSR <sub>A</sub>		1.000	0.764	0.758	0.852	-0.852	0.368	0.841	0.791	0.89	0.462	0.764	0.764
OCRA	1.000	0.758	0.995	1	0.967	-0.967	0.599	0.478	0.978	0.687	0.681	0.995	0.995
PIV	-0.995	-0.764	-1	-0.995	-0.962	0.962	-0.61	-0.484	-0.984	-0.681	-0.725	-1	-1
PSI	0.044	0.352	0.016	0.044	0.165	-0.165	0.473	0.615	0.088	0.445	-0.368	0.016	0.016
ROV	0.967	0.852	0.962	0.967	1	-1	0.61	0.637	0.978	0.731	0.648	0.962	0.962
SAW	1	0.758	0.995	1	0.967	-0.967	0.599	0.478	0.978	0.687	0.681	0.995	0.995
PROMET <sub>HFF</sub>	0.997	0.755	0.992	0.997	0.964	-0.964	0.595	0.471	0.975	0.683	0.678	0.992	0.992
TOPSIS	0.989	0.791	0.995	0.989	0.973	-0.973	0.604	0.516	0.978	0.692	0.72	0.995	0.995
VIKOR	-0.978	-0.835	-0.973	-0.978	-0.978	0.978	-0.577	-0.588	-0.956	-0.72	-0.659	-0.973	-0.973
WASPAS	1	0.758	0.995	1	0.967	-0.967	0.599	0.478	0.978	0.687	0.681	0.995	0.995
Total	12.190	10.826	12.220	12.190	12.372	-12.372	8.353	8.163	12.333	9.853	8.138	12.220	12.220
R	9	13	5	9	2	21	15	16	3	14	17	6	6

WASPAS	VIKOR	TOPSIS	PROMET HEF	SAW	ROV	PSI	PIV
							1.000
						1.000	-0.016
					1.000	0.165	-0.962
				1.000	0.967	0.044	-0.995
			1.000	0.997	0.964	0.039	-0.992
		1.000	0.986	0.989	0.973	0.033	-0.995
		-0.978	-0.975	-0.978	-0.978	-0.110	0.973
1.000	-0.978	0.989	0.997	1	0.967	0.044	-0.995
12.190	17.734	12.261	12.143	12.190	12.372	2.939	-12.220
8	20	4	12	9	1	18	19

## Ya Ben Kararsızsam? Kararsız Özdeşleşmenin Proaktif İş Davranışlarına Etkisinde Psikolojik Rahatlığın Rolü<sup>1</sup>

Gürhan Yanık<sup>2</sup>

Ayşe Karaca<sup>3</sup>

<b>Ya Ben Kararsızsam? Kararsız Özdeşleşmenin Proaktif İş Davranışlarına Etkisinde Psikolojik Rahatlığın Rolü</b>	<b>What if I Feel Ambivalent? The Role of Psychological Safety on the Relationship between Ambivalent Identification and Proactive Work Behaviors</b>
<b>Öz</b> Örgütlerde kararsızlık üzerine yapılmış çalışma sayısı son yıllarda gittikçe artmaya başlamış olmakla birlikte, özdeşleşme kararsızlığına odaklanan araştırmaların halen sınırlı sayıda olduğu görülmektedir. Literatürdeki bu boşluğu doldurmak amacıyla, bu çalışmada kararsız özdeşleşmenin proaktif iş davranışlarına etkisi ve psikolojik rahatlığın bu ilişkideki aracı rolü incelenmiştir. Araştırma hipotezlerini test etmek amacıyla, Türkiye’de çalışmakta olan 452 akademisyenden anket yöntemi ile veri toplanmış olup, analiz sonuçları kararsız özdeşleşmenin proaktif iş davranışlarını negatif etkilediğini ve psikolojik rahatlığın iki değişken arasındaki ilişkide aracılık rolü oynadığını göstermiştir.	<b>Abstract</b> Although the concept of organizational ambivalence has recently attracted considerable interest, there is still limited research focusing on ambivalence in organizational identification. In order to fill this gap in the literature, this study examined the impact of ambivalent identification on proactive work behaviors and the intervening role of psychological safety in this relationship. The study hypotheses were tested using data collected from 452 academicians working in Turkey. The results revealed that ambivalent identification negatively influenced proactive work behaviors and that the relationship between the two constructs was mediated by psychological safety.
<b>Anahtar Kelimeler:</b> Örgütsel Özdeşleşme Kararsızlığı, Proaktif İş Davranışları, Psikolojik Rahatlık, Kaynakların Korunması Teorisi, Sosyal Takas Teorisi	<b>Keywords:</b> Ambivalent Identification, Proactive Work Behaviors, Psychological Safety, Conservation of Resources Theory, Social Exchange Theory
<b>JEL Kodları:</b> M10, M12, M19	<b>JEL Codes:</b> M10, M12, M19

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma, Kütahya Dumlupınar Üniversitesi Rektörlüğü, Sosyal ve Beşeri Bilimler Bilimsel Araştırma ve Yayın Etiği Kurulu, 30/12/2021 tarih ve 2021/10 sayılı Etik Kurul Onay Belgesi ile bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Yazarların makaleye katkısı eşit düzeydedir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

<sup>1</sup> Bu çalışma, Kütahya Dumlupınar Üniversitesi Lisansüstü Eğitim Enstitüsü İşletme Anabilim Dalı’nda Dr. Öğr. Üyesi Ayşe Karaca danışmanlığında Yüksek Lisans Öğrencisi Gürhan Yanık tarafından “Örgütsel Özdeşleşme Kararsızlığının Proaktif İş Davranışlarına Etkisi: Psikolojik Rahatlığın Aracı Rolü” başlığı ile tamamlanarak 16.01.2023 tarihinde savunulan Yüksek Lisans tezinden türetilmiştir.

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## 1. Giriş

Kararsızlık (*ambivalence*), herhangi bir objeye karşı aynı anda hem pozitif hem de negatif eğilime sahip olma durumudur (Ashforth vd., 2014). Psikoloji, sosyoloji ve sosyal psikoloji gibi disiplinlerde kararsızlık kavramı sıklıkla incelenmiş olsa da son yıllara kadar örgütsel bağlamda kararsızlık olgusu çok fazla gündemde olmamıştır. Ancak, günümüzde gerek teorik (Ashforth vd., 2014; Methot vd., 2017; Rothman vd., 2017), gerekse ampirik (Ashforth vd., 2013; Lee vd., 2019; Ziegler vd., 2012) birçok çalışmada örgütlerde kararsızlık konusunun farklı açılardan incelenmeye başlanıldığı görülmektedir. Bunlar arasında; işe ilişkin kararsızlık, yöneticinin stratejik konuları değerlendirmedeki kararsızlığı, lider-üye değişim kararsızlığı, mesleki özdeşleşme kararsızlığı, yöneticinin çalışana karşı duygusal kararsızlığı ve örgütsel özdeşleşme kararsızlığı gibi konulara odaklanmış çalışmaları saymak mümkündür. Her ne kadar teorik çalışmalarda (Rothman vd., 2017) kararsızlığın hem olumlu hem de olumsuz etkilere yol açabileceği tartışılmış olsa da yapılan ampirik araştırmalarda kararsızlık durumunun örgütlerde genellikle olumsuz çıktılarla ilişkilendirildiği görülmüştür. Örneğin, işine ilişkin duygusal kararsızlık yaşayan bireylerde, iş tatmininin iş performansı üzerindeki pozitif etkisinin daha az olacağı (Ziegler vd., 2012), lider-üye değişim kararsızlığının iş performansını (Lee vd., 2019), örgütsel gömülmüşlüğü ve kariyere bağlılığı (Dechawatanapaisal, 2021) azaltacağı, mesleki özdeşleşme kararsızlığının tükenmişlik, stres ve işten ayrılma niyetini artıracığı (Ashforth vd., 2013), ve yöneticinin çalışana ilişkin duygusal kararsızlığının çalışanda stresi artırarak işe tutkunluğunu azaltacağı (Lim vd., 2021) bulgulanmıştır.

Öte yandan, bu çalışmanın konusunu oluşturan örgütsel özdeşleşme kararsızlığı (kararsız özdeşleşme; *ambivalent identification*), işgörenlerin çalıştıkları örgüte (veya onun herhangi bir yönüne) karşı eş zamanlı olarak hem özdeşleşme hem de özdeşleşmeme duygularına sahip olmaları olarak tanımlanmaktadır (Kreiner ve Ashforth, 2004). Uluslararası literatürde gerçekleştirilmiş birkaç araştırma dışında, kararsız özdeşleşmeye ilişkin alan yazında çok fazla çalışmanın yapılmadığı tespit edilmiştir. Özellikle ulusal literatürde örgütlerde kararsızlık konusuna ilişkin büyük bir boşluk olduğu, özdeşleşme kararsızlığının ise teorik ya da ampirik bağlamda herhangi bir çalışmaya konu edilmediği görülmüştür. Geçmiş çalışmalarda kararsızlığın çeşitli olumsuz örgütsel çıktıları beraberinde getirdiği bulgusu göz önünde bulundurulduğunda, özdeşleşme kararsızlığı ve olası etkilerini incelemek son derece önemli olacaktır.

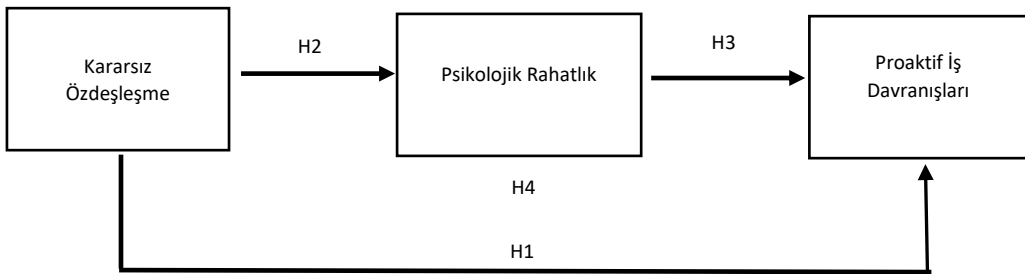
Bu araştırmada temel olarak, işgörenlerin kararsız özdeşleşme düzeylerinin proaktif iş davranışlarını nasıl etkilediği ve bu iki değişken arasındaki ilişkide psikolojik rahatlık algısının aracı rolü incelenmektedir. Proaktif davranış, iş yerinde mevcut koşulların iyileştirilmesini ya da yenilerinin oluşturulmasını amaçlayan davranışlar olup, pasif bir şekilde var olan duruma uyum sağlamak yerine, statükoyla çelişmeyi içermektedir (Crant, 2000). Alan yazında, proaktif iş davranışlarını olumlu veya olumsuz etkileyen birçok faktörün varlığından söz edilmektedir. Ancak kararsız özdeşleşmenin proaktif iş davranışlarına olan etkisine ilişkin gerek ulusal gerekse uluslararası literatürde, yazarların bilgisi dahilinde, herhangi bir araştırmaya rastlanmamıştır. Literatürdeki bu boşluğu doldurmak amacıyla bu çalışmada, kararsız özdeşleşme ile proaktif iş davranışları arasındaki ilişkinin araştırılması amaçlanmıştır. Buna göre, Kaynakların Korunması Teorisi (*Conservation of Resources Theory*; Hobfoll, 1989) temelinde, kararsız özdeşleşmenin çalışanın bilişsel ve psikolojik kaynaklarını tüketerek, örgüt yararına davranışta bulunma motivasyonunu azaltacağı (Kreiner ve Ashforth, 2004),

dolayısıyla da proaktif iş davranışlarının sergilenmesini olumsuz yönde etkileyeceği öngörülmüştür.

Çalışmada ayrıca, örgütsel özdeşleşme kararsızlığı ile proaktif iş davranışları arasındaki ilişkide psikolojik rahatlık algısının aracı rolünün de incelenmesi amaçlanmıştır. Kararsız özdeşleşmenin proaktif davranışlara olan etkisinin çalışılması önemli olmakla birlikte, bu etkinin hangi mekanizmalar vasıtasıyla gerçekleştiğinin incelenmesi de son derece önemlidir. Örgütlerde kararsızlık konusuna ilişkin yapılan teorik çalışmalarda da bu noktaya dikkat çekilerek, kararsızlık ve etkilerinin araştırılmasında nasıl (aracı değişken) ve ne zaman (düzenleyici değişken) sorularının sorulması gerektiğinin altı çizilmiştir (Methot vd., 2017; Rothman vd., 2017). Bu öneriden hareketle bu çalışmada, örgütsel özdeşleşme kararsızlığının proaktif iş davranışları üzerindeki olumsuz etkisinde psikolojik rahatlık algısının aracı rolü araştırılmıştır. Psikolojik rahatlık algısı, işgörenlerin imajlarına, kariyerlerine veya statülerine yönelik olarak doğacak herhangi bir olumsuz durumdan çekinmeden organizasyon içerisinde kendilerini rahat bir şekilde ifade edebileceklerine ilişkin bir inanç olarak tanımlanmaktadır (Kahn, 1990). Bu çalışmada, kararsızlığın beraberinde getirdiği belirsizlik ve stres sebebi ile örgütüyle kararsız özdeşleşen çalışanların psikolojik rahatlık algılarının düşeceği ve bu durumun proaktif iş davranışlarının sergilenmesini azaltacağı öngörülmüştür.

Özetle, çalışmada cevaplanması hedeflenen araştırma soruları temel olarak şu şekildedir: (1) Kararsız özdeşleşme proaktif iş davranışlarını nasıl etkiler? (2) Psikolojik rahatlığın bu iki değişken arasındaki ilişkide aracı rolü var mıdır? Çalışmaya ilişkin araştırma modeli Şekil 1’de gösterilmektedir.

Şekil 1: Araştırma Modeli



Çalışmanın literatüre katkıları ise şu şekilde sıralanabilir: (1) Bugüne değin alan yazında özdeşleşme konusuna ilişkin yapılmış olan çalışmalarda çalışanların kurumlarıyla yüksek (ya da düşük) düzeyde özdeşleşmelerinin olumlu (ya da olumsuz) sonuçlarına odaklanılmıştır. Kreiner ve Ashforth’un (2004) “Genişletilmiş Örgütsel Özdeşleşme Modeli”nde önerdikleri üzere, bireylerin örgütleriyle sanıldığı gibi tek yönlü değil, kararsız bir şekilde de özdeşleşebilecekleri çoğunlukla göz ardı edilmiştir. Dolayısıyla bu çalışma, literatürde ihmal edilen kararsız özdeşleşme kavramını inceleyerek özdeşleşme alan yazınına önemli bir katkı sunmaktadır. (2) Bununla birlikte, geçmiş çalışmalar incelendiğinde örgütlerde kararsızlık konusuna ilişkin uluslararası literatürde çok az, ulusal literatürde ise hemen hemen hiçbir çalışma yapılmadığı görülmektedir. Örgütsel özdeşleşme kararsızlığının proaktif iş davranışlarına etkisi ise gerek ulusal gerekse uluslararası literatürde, yazarların bilgisi dahilinde, henüz araştırılmamış bir konudur. Bu sebeple, bu çalışmanın sonuçları kararsız



özdeşleşmenin etkilerinin iş performansını aşarak, çalışanın değişim odaklı davranışlarını da etkileyeceğini göstermesi açısından literatüre önemli bir katkıda bulunmaktadır. (3) Son olarak, çalışmanın psikolojik rahatlık algısının aracı rolüne ilişkin sunduğu sonuçlar ise kararsızlığın örgütsel etkilerinin hangi psikolojik mekanizmalar vasıtasıyla gerçekleşebileceği sorusuna ışık tutmaktadır. Aşağıda öncelikle çalışmada yer alan değişkenler hakkında bilgi verilerek, araştırma hipotezleri detaylandırılmıştır. Takip eden bölümde, çalışmanın metodolojisi tartışılmış ve ardından çalışma bulguları raporlanmıştır. Son olarak, çalışmanın teorik ve pratik katkıları sıralanıp, sınırlılıklar ve gelecek araştırmacılara öneriler sunulmuştur.

## 2. Kavramsal Çerçeve

**Örgütsel Özdeşleşme Kararsızlığı:** Örgütsel özdeşleşme kararsızlığı, Kreiner ve Ashforth (2004)'un "Genişletilmiş Örgütsel Özdeşleşme Modeli" ile birlikte literatüre girmiş olup, işgörenlerin örgütlerine ilişkin eş zamanlı olarak hem olumlu hem de olumsuz duygu yönelimlerinin bulunması olarak tanımlanmaktadır. Kreiner ve Ashforth (2004) geliştirdikleri modelde, çalışanların örgütleriyle sadece pozitif (identification) değil, negatif (*disidentification*), tarafsız (*neutral identification*), ya da kararsız (*ambivalent identification*) bir şekilde de özdeşleşebileceklerini öne sürmüşlerdir. Buna göre, kararsız özdeşleşen bir işgören, örgütün bazı yönleriyle özdeşleşirken, bazı yönlerinden ise kendini ayırma davranışlarında bulunmaktadır. Örneğin, örgütün müşteri odaklılığını destekleyen bir çalışan, maliyet azaltılmasına önem verilmesi konusunda ise örgütle özdeşleşmediğini hissedebilmektedir (Kreiner ve Ashforth, 2004). Bu durumda işgörenler, bir yandan örgüt yararına hareket etmek isterken, diğer taraftan örgütün bazı yönlerini desteklemek istemediklerinden dolayı çelişkili ve rahatsız edici bir durumla karşı karşıya kalmaktadırlar (Egold ve van Dick, 2015). Kararsız özdeşleşmeye ilişkin literatürde sınırlı sayıda çalışma bulunmakta olup, yapılan bu çalışmalarda, özdeşleşme kararsızlığı yaşayan işgörenlerin daha az satış performansına sahip oldukları (Pratt, 2000), daha fazla sinizm ve beraberinde örgütsel sessizlik davranışı gösterdikleri bulunmuş (Mignonac vd., 2018) ve örgüt karşıtı ya da örgüt yararına bir takım etik olmayan davranışları gerçekleştirebilecekleri belirtilmiştir (Vadera ve Pratt, 2013). Ayrıca, çalışanın kararsızlığı arttıkça, özdeşleşmenin örgütsel vatandaşlık davranışı üzerindeki pozitif etkisinin azaldığı (Schuh vd., 2016), verimlilik karşıtı iş davranışları üzerindeki negatif etkisinin ise daha zayıf hale geldiği tespit edilmiştir (Ciampa vd., 2019). Özdeşleşme kararsızlığını etkileyen unsurların ise örgüt kültürü (Vijayakumar ve Padma, 2014), düzenleme odağı (Schuh vd., 2016), algılanan örgütsel engel (Gibney vd., 2011), rol çatışması ve örgütsel kimlik uyumsuzluğu (Kreiner ve Ashforth, 2004) gibi faktörler olduğu bulunmuştur.

**Proaktif İş Davranışları:** Proaktif iş davranışları, örgüt içerisinde kontrol sağlama ve değişim yaratma odaklı davranışlar olup, sorumluluk, seslilik, bireysel inovasyon ve problem önleme olmak üzere dört alt boyutta incelenmektedir (Parker ve Collins, 2010). Sorumluluk almanın temeli, örgütte işlerin yürütülüşünü daha işlevsel hale getirmek için çalışan tarafından gönüllü ve yapıcı çabaların gerçekleştirilmesine dayanmaktadır (Morrison ve Phelps, 1999). Ses çıkarma ya da dile getirme davranışı, salt eleştiri yapmaktan ziyade, işgörenin değişim için yeni ve yapıcı önerilerde bulunmasını içermektedir (Van Dyne ve LePine, 1998). Yenilikçi davranış, işgörenler tarafından yeni fikirler geliştirilmesini ve uygulanmasını kapsarken (Scott ve Bruce, 1994), problem önleme ise iş ortamında problemlerin ve engellerin yeniden oluşmasını önleme ile ilgili proaktif davranışları içermektedir (Parker ve Collins, 2010). Günümüzde hızla artan rekabetle birlikte iş görevlerinin ötesinde ve örgüt yararına ekstra rol davranışlarında bulunarak proaktif davranan işgörelere her zamankinden daha fazla ihtiyaç

duyulmaktadır (Bindl ve Parker, 2011). Bu ihtiyaç temelinde, son yıllarda araştırmacıların sıklıkla çalıştığı konulardan biri de proaktif iş davranışlarının sergilenmesini etkileyen faktörlerin neler olduğudur. Yapılan araştırmalarda, lider desteği (Wang ve Yang, 2021; Wu ve Parker, 2017), işe gömülmüşlük (Jia vd., 2020), işgören dayanıklılığı (Caniels ve Baaten, 2019), psikolojik güçlendirme ve proaktif kişilik (Yolcu ve Çakmak, 2017) gibi pek çok faktörün proaktif iş davranışlarını etkilediği bulgulanmıştır.

**Psikolojik Rahatlık:** Örgütlerde psikolojik rahatlık olgusunun temeli, Schein ve Bennis (1965) tarafından örgütsel değişim üzerine yapılan çalışmalara dayanmakta olup, çalışanın imajına, statüsüne veya kariyerine yönelik olarak olumsuz anlamda sonuçlanacak durumlardan çekinmeden örgüt içerisinde kendisini rahat bir şekilde ifade edebileceğine dair bir inanç olarak tanımlanmaktadır (Kahn, 1990). Psikolojik rahatlık ikliminin yüksek olduğu bir örgütte işgörenler, ceza alma ya da reddedilme endişesi taşımadan güven içerisinde iletişimde bulunabilmektedirler (Baer ve Frese, 2003). Son yıllarda psikolojik rahatlık kavramına ilişkin çok sayıda araştırma yapılmış olup, bu çalışmalarda psikolojik rahatlığın işgörenlerin performanslarını (Obrenovic vd., 2020), öğrenme davranışlarını (Edmondson, 1999), yenilik ve yaratıcılıklarını (Carmeli vd., 2010), ve ses çıkarma davranışlarını (Türkoğlu ve Özyılmaz Misican, 2019) artırdığı bulgulanmıştır. Buna paralel olarak, Frazier vd. (2017) tarafından yapılan meta-analiz çalışmasında da psikolojik rahatlığın birçok olumlu örgütsel çıktıyla ilişkili olduğu tespit edilmiştir. Bunun yanı sıra, yapılan araştırmalarda psikolojik rahatlığı etkileyen pek çok farklı faktör olduğu belirtilmiş (Kahn, 1990) ve bunlar lider davranışları (Men vd., 2020), kişiler arası ilişkiler (Derin, 2017), örgüt iklimi (Guchait vd., 2019), kişilik (May vd., 2004) ve takım dinamikleri (Hood vd., 2016) gibi farklı başlıklar altında incelenmiştir.

### 3. Hipotezler

#### 3.1. Örgütsel Özdeşleşme Kararsızlığı ve Proaktif İş Davranışları İlişkisi

Bu çalışmada, özdeşleşme kararsızlığının proaktif iş davranışları üzerindeki etkisi Kaynakların Korunması Teorisi (Hobfoll, 1989; Hobfoll, 2001a) bağlamında incelenmektedir. Kaynakların Korunması Teorisi'nde (Hobfoll, 1989; Hobfoll, 2001a), bireyler için değerli olarak nitelendirilen kaynakların elde edilmesi, korunması ve geliştirilmesinin önemi üzerinde durulmakta ve bu kaynakların maddi kaynaklar (yiyecek, giyecek, barınak gibi), koşullar (evlilik, statü gibi), kişisel özellikler (bireysel nitelikler, yetenekler gibi) ve enerji (para, bilgi gibi) olmak üzere dört temel gruptan oluştuğu ifade edilmektedir. Kaynakların Korunması Teorisi'ne (Hobfoll, 1989; Hobfoll, 2001a) göre, kişiler herhangi bir sebepten dolayı (1) kaynaklarını kaybetme tehlikesi yaşadıklarında, (2) gerçekten kaybetmeleri durumunda ya da (3) önemli bir kaynak yatırımı yapmalarına rağmen yeni kaynak elde edemediklerinde psikolojik bir stres yaşamakta ve bunun sonucunda mevcut kaynaklarını korumaya veya daha fazla kaynak kaybını önlemeye yönelik tedbirler (*resource-conservation strategies*) almaya yönelmektedirler. Bu varsayım çerçevesinde değerlendirildiğinde, kararsızlık durumu çalışanın bilişsel enerji, dikkat, içsel motivasyon ve benlik duygusu gibi pek çok bilişsel ve psikolojik kaynağını tehdit eden (Ashforth vd., 2014; Dechawatanapaisal, 2021; Schuh vd., 2016) ve bu sebeple örgütsel çıktıları olumsuz etkileyen bir durum olarak nitelendirilebilir. Öyle ki literatürde kararsızlığın, genel anlamda rahatsız edici (van Harreveld vd., 2015), stres verici (Herr vd., 2019), kafa karışıklığı, endişe ve kontrol kaybı hislerine yol açan (Harrist, 2006), ve kişilerin içsel tutarlılık ihtiyacını bozduğu için kaçınılması gereken bir durum (Ashforth vd., 2014; Nordgren vd., 2006) olduğu belirtilmektedir. Bu sebeptendir ki, kararsızlık yaşayan çalışanlar çeşitli savunma ve/veya baş etme stratejileri kullanarak yaşadıkları bu içsel çelişki

durumunu azaltmak ya da ortadan kaldırmak istemektedirler (Ashforth vd., 2014). Bu durum ise normal şartlarda örgüte fayda sağlayacak arayışlara harcanabilecek kaynakların, kararsızlık durumuyla başa çıkmak için kullanılmasına yol açmaktadır (Kreiner ve Ashforth, 2004).

Bu bağlamda düşünüldüğünde, özdeşleşme kararsızlığı da çalışanda bir iç çatışma duygusu yaratarak kaynak kaybı tehdidine yol açan (*threat of resources loss*) ve çalışanı daha az proaktif iş davranışı sergileyerek mevcut kaynaklarını korumaya yönelten (*defensive mode*) bir stres faktörü olarak nitelendirilebilir. Buna göre, özdeşleşme kararsızlığı yaşayan çalışanlar, mevcut kaynaklarının bir kısmını içsel tutarlılığa ulaşmak ve örgüte karşı nasıl hareket edeceklerini belirlemeye yönelik çabalara harcayacaklarından, kayıp sarmalına (*loss spiral*) düşmemek adına işin gerektirdiği performans düzeyinin üstünde ve ötesinde bir performans gösterme konusunda isteksiz olacaklardır. Diğer bir deyişle, enerji ve motivasyonunun büyük bir kısmını kararsızlık hissiyle baş etmek için kullanan bir çalışan, örgüt ya da diğer çalışanlar yararına davranışlarda bulunmak için daha az kaynağa ve enerjiye sahip olacak (Schuh vd., 2016) ve bu durum proaktif iş davranışları gibi örgüt yararına fazladan çaba gerektirecek davranışları sergileme olasılığını da azaltacaktır. Özdeşleşme kararsızlığına ilişkin yapılmış sınırlı sayıdaki çalışma bulguları da kararsızlığın olumsuz etkilerine işaret etmekte olup, kararsız özdeşleşen çalışanların daha az satış performansına sahip oldukları (Pratt, 2000), daha fazla sinizm ve beraberinde örgütsel sessizlik davranışı gösterdikleri (Mignonac vd., 2018) görülmüştür. Ampirik olarak test edilmemekle birlikte, Vadera ve Pratt (2013) tarafından yapılan araştırmada da kararsız özdeşleşmenin örgüt yararına ya da örgüt karşıtı bir takım etik olmayan iş yeri davranışlarına yol açabileceği belirtilmiştir. Bu bulgulardan hareketle, çalışmanın ilk hipotezi aşağıdaki gibidir:

**Hipotez 1 (H1):** Örgütsel özdeşleşme kararsızlığının proaktif iş davranışları üzerinde negatif etkisi vardır.

### 3.2. Psikolojik Rahatlığın Aracı Rolü

Bir önceki başlıkta, örgütsel özdeşleşme kararsızlığının proaktif iş davranışları üzerindeki olumsuz etkisi teorik ve ampirik bulgular temelinde tartışılmıştır. Ancak, iki değişken arasındaki bu ilişkinin hangi psikolojik süreçler vasıtasıyla gerçekleştiğini incelemek de yararlı olacaktır. Son dönemde kararsızlık üzerine yapılan çalışmalarda da literatürde var olan bu boşluğa dikkat çekilmiş ve örgütlerde kararsızlık ve ilişkili olduğu sonuçların hangi mekanizmalara (aracı değişkenlere) bağlı olarak gerçekleştiğinin araştırılmasının önemli olduğu belirtilmiştir (Methot vd., 2017; Rothman vd., 2017). Bu öneri temelinde bu çalışmada, psikolojik rahatlık algısının, örgütsel özdeşleşme kararsızlığı ile proaktif iş davranışları arasındaki ilişkide aracı rol oynayacağı öngörülmüştür.

Daha önce de ifade edildiği gibi, kararsızlık durumu çalışan için rahatsız edici, stres verici ve belirsizliğe yol açan bir durum olduğundan (Harrist, 2006; Herr vd., 2019; van Harreveld vd., 2015), örgütüyle kararsız özdeşleşen bir işgören mevcut kişisel kaynaklarının bir kısmını bu belirsizlikle savaşmaya ve içsel tutarlılığa ulaşmaya harcayacaktır. Kaynakların Korunması Teorisi (Hobfoll, 1989; Hobfoll, 2001a) temelinde düşünüldüğünde, kişinin örgütüyle kararsız bir şekilde özdeşleşmesi kaynak kaybına yönelik bir tehdit olarak değerlendirilirse (Ashforth vd., 2014; Dechawatanapaisal, 2021; Schuh vd., 2016), psikolojik rahatlık ise bu durumun sonucu olarak azalan ve kişisel özellikler kategorisinde değerlendirebileceğimiz kaynaklardan biri olacaktır. Kaynakların Korunması Teorisi'nde (Hobfoll, 1989; Hobfoll, 2001b) kişisel

özellikler grubunda yer alan kaynaklar, bireyin stresli koşullara daha iyi dayanmasını, arzu edilen hedeflere ulaşmasını veya diğer kaynakları elde etmesini sağlayan becerileri veya kişilik özelliklerini kapsamaktadır. Bu noktada, psikolojik rahatlık çalışanın ayıplanma, cezalandırılma ya da reddedilme endişesi taşımadan örgütte kendisi gibi var olmasını sağlayarak bireyin stresini azaltan (Baer ve Frese, 2003) ve kişisel özellikler kategorisinde değerlendirilebilecek önemli bir psikolojik kaynak olarak düşünülebilir. Öyle ki, psikolojik rahatlık işgörenin bir sorusu olduğunda, bir yanlışlığı üst yönetime bildirdiğinde ya da yenilikçi fikirler sunduğunda diğer işgörenlerin ya da yönetimin bu duruma nasıl tepki göstereceklerine ilişkin olarak işgörende oluşan inançları kapsamakta (Carmeli ve Gittell, 2009) ve kişilerarası risk almayı güvenli hale getirerek, çalışanın kendini rahat ve güvende hissetmesini sağlamaktadır (Edmondson, 1999; Kahn, 1990). Buna göre, bireyin kendini tam anlamıyla örgütüyle özdeşleştirememesi veya örgüte karşı karışık hisler yaşaması durumunda en önemli kişisel kaynaklardan biri olan psikolojik rahatlık algısı da azalacaktır. Çalışanın örgütüyle özdeşleşmesi genelde beklenen bir norm olduğundan, kararsızlık yaşayan bir birey örgüt tarafından kabul edilen bir çalışan olmadığı hissini yaşayacak (Kreiner ve Ashforth, 2004) ve bu durum diğerleriyle iletişime geçmesini, çelişkili hislerini paylaşabilmesini ve kendisi olarak örgütte var olabildiğini güçleştirecektir. Buna göre, çalışmanın ikinci hipotezi aşağıdaki gibidir:

**Hipotez 2 (H2):** Örgütsel özdeşleşme kararsızlığının psikolojik rahatlık üzerinde negatif etkisi vardır.

Psikolojik rahatlığa ilişkin yapılan geçmiş araştırmalarda, psikolojik rahatlık ikliminin örgütsel açıdan birçok olumlu çıktıyı da beraberinde getirdiği bulgulanmıştır (Frazier vd., 2017; Newman vd., 2017; Karaca, 2021). Bu bulgulara paralel olarak bu çalışmada, psikolojik rahatlığın örgüt başarısı için son derece önemli olan proaktif iş davranışlarının sergilenmesini de artıracakları öngörülmüştür. Öyle ki, psikolojik rahatlık algısı yüksek olan bir çalışan yeni fikirler üretme, problemleri belirleme, değişimler önerme ve başlatma gibi proaktif ve öğrenme odaklı davranışları gerçekleştirmede kendisini daha rahat hissedecektir (Chen vd., 2019). Psikolojik rahatlık ikliminin yüksek olması, çalışana olumsuz sonuçlarından korkmadan kendini ifade etmeye, yenilik ve yaratıcılık süreçlerini aktif olarak desteklemeye motive edecektir (Carmeli vd., 2010). Çalıştığı örgütte kendisini rahat ve güvende hisseden bir işgörenin stres ve endişesi daha az olurken, örgütü psikolojik olarak risk almaya elverişli gördüğü için kendisi gibi davranabilecek, duygu ve düşüncelerini rahatlıkla paylaşabilecektir (Edmondson, 1999). Benzer şekilde, psikolojik rahatlık algısı yüksek olan işgörenler, diğerleri tarafından ayıplanma, cezalandırılma ya da reddedilme endişesi taşımadan daha kolay bir şekilde risk alıp önerilerde bulunurken (Baer ve Frese, 2003), bu algının düşük olduğu işgörenler ise risk algısının artmasıyla sessizliği seçeceklerdir (Zeng vd., 2020). Özetle, yüksek bir psikolojik rahatlık algısı, çalışana sorumluluk üstlenme, ses çıkarma, bireysel yenilik ve problem önleme gibi proaktif davranışları daha fazla sergilemeye yöneltecektir. Bu durum, Sosyal Takas Teorisi (Social Exchange Theory; Blau, 1964) varsayımları ile de örtüşmekte olup, karşılıklılık ilkesi (the norm of reciprocity; Gouldner, 1960) gereği, çalışanların algılamış oldukları özgür, güvenli ve destekleyici bir psikolojik rahatlık iklimine karşılık hem örgüt hem de diğer çalışanlar yararına ekstra rol davranışlarında bulunma eğiliminde olacakları söylenebilir. Ampirik çalışma bulguları da bunu destekler nitelikte olup, psikolojik rahatlığın çalışan sesliliği (Liang vd., 2012), yenilikçi davranış (Leung vd., 2014), problem çözme (Chen

vd., 2019), ve sorumluluk üstlenme (Zeng vd., 2020) gibi proaktif davranışları artırdığı tespit edilmiştir. Buna göre, çalışmanın üçüncü hipotezi aşağıdaki gibidir:

**Hipotez 3 (H3):** Psikolojik rahatlığın proaktif iş davranışları üzerinde pozitif etkisi vardır.

Yukarıdaki tartışma temelinde ve araştırma modeli bir bütün olarak ele alındığında, bu çalışmada ayrıca psikolojik rahatlık algısının kararsız özdeşleşme ile proaktif iş davranışları arasındaki ilişkide aracı rol oynayacağı da öngörülmektedir. Öyle ki, özdeşleşme kararsızlığının yol açtığı stres, belirsizlik ve örgüte tam olarak ait olmama hissi (Kreiner ve Ashforth, 2004) kişi için önemli bir psikolojik kaynak olan kendisi olarak örgütte varolma duygusunu yani psikolojik rahatlığını azaltacaktır. Kaynakları azalan çalışan ise kayıp sarmalına (*loss spiral*) düşmemek adına, mevcut kaynaklarını korumaya odaklanacak (*defensive mode*), ve bu sebeple işin gerektirdiği performans düzeyinin üstünde ve ötesinde bir performans gösterme konusunda isteksiz olacaktır. Dolayısıyla, kararsız özdeşleşme (*threat of resources loss*) çalışanın psikolojik rahatlığını (*personal resource*) azaltarak proaktif iş davranışlarını olumsuz etkileyecektir (*resource-conservation strategy*). Psikolojik rahatlığın aracı rolüne ilişkin yapılmış olan geçmiş çalışma bulguları da buna paralel nitelikte olup, örneğin örgütsel politika algısı (Li vd., 2014) ve lider davranışlarının (Walumbwa ve Schaubroeck, 2009) çalışan proaktifliğine etkisinde psikolojik rahatlığın aracı rol oynadığı tespit edilmiştir. Buna göre, çalışmanın sonuncu hipotezi aşağıdaki gibidir:

**Hipotez 4 (H4):** Psikolojik rahatlık, örgütsel özdeşleşme kararsızlığı ile proaktif iş davranışları arasındaki ilişkide aracı rol oynamaktadır.

#### 4. Araştırma Metodolojisi

##### 4.1. Örneklem ve Veri Toplama Süreci

Çalışma hipotezlerini test etmek amacıyla, Türkiye'nin her bölgesinden en az bir üniversite seçilerek, 462 akademisyenden online anket yöntemiyle veri toplanmıştır. Anket formunda, öncelikle katılımcıların demografik özelliklerine ilişkin sorulara yer verilmiş, ardından araştırma değişkenlerine yönelik ölçek maddeleri sunulmuştur. Ankete katılan 462 katılımcıdan 10'u dikkatsiz katılımcı (tüm maddelere aynı cevap verenler gibi) olduğu için veri setinden çıkarılmış ve araştırmanın örneklemini toplam 452 akademisyen oluşturmuştur. Katılımcıların çoğunluğunun kadın (%59), doktora derecesine sahip (%55), ve bir devlet üniversitesinde (%67) çalışıyor olduğu belirlenmiştir. Yaş ortalamasına bakıldığında ise, katılımcıların büyük bir kısmının 25-34 (%40) yaş aralığında yer aldığı görülmüştür. Ankete cevap verenlerin %79 gibi büyük bir çoğunluğunun çalıştıkları kurumda yöneticilik görevi bulunmazken; hizmet süresi açısından ise çoğunluğun 1 ila 4 (%30) yıldır görevde olduğu tespit edilmiştir. Araştırma kapsamında 452 katılımcıdan elde edilen veriler analiz edilmeden önce ham veri setinde kayıp ve uç değerlerin olup olmadığı kontrol edilmiştir. Veride herhangi bir kayıp değer olmadığı görülmüştür. Veride yer alan aykırı değerlerin tespiti için öncelikle ölçeklere ilişkin standardize edilmiş z değerleri hesaplanmış ve z değerleri  $\pm 3.29$  aralığı içerisinde olan veriler normal değer kabul edilmiştir (Tabachnick ve Fidell, 2007). Ardından qq grafikleri de incelenerek veride herhangi bir aykırı değer olmadığı tespit edilmiştir.

##### 4.2. Ölçekler

**Kararsız Özdeşleşme:** Çalışanların örgütsel özdeşleşme kararsızlığını ölçmek amacıyla, Kreiner ve Ashforth (2004) tarafından geliştirilen "Kararsız Özdeşleşme Ölçeği" kullanılmıştır. Özgün dili İngilizce olan ölçeğin Türkçe'ye çevrilmesi çeviri-geri çeviri (*translation-back translation*) (Brislin, 1970) yöntemi ile yapılmış olup, kapsam geçerliliği için uzman

görüşlerinin alınması ve maddelerin anlaşılabilirliğini kontrol etmek amacıyla 53 katılımcıyla pilot çalışma gerçekleştirilmesi adımları takip edilerek ölçek kullanıma hazır hale getirilmiştir. Özdeşleşme kararsızlığı ölçeği altı maddeden oluşmakta olup, katılımcıların ölçek maddelerine katılım düzeylerini belirlemek için 5'li Likert tipi ölçek (1 = Hiç katılmıyorum; 5 = Kesinlikle katılıyorum) kullanılmıştır. Ölçeğe ilişkin örnek bir madde şöyledir: "Bu kurumun bir parçası olmak konusunda çelişkili hissediyorum." Özdeşleşme kararsızlığı ölçeğinin Cronbach Alpha değeri ,92 olarak bulunmuştur. Ölçeğin yapı geçerliliğini test etmek amacıyla Açıklayıcı Faktör Analizi (AFA) uygulanmıştır. AFA sonuçları, özdeşleşme kararsızlığı ölçeğine ilişkin tüm maddelerin tek bir faktörde toplandığını göstermiş olup faktör yüklerinin 0,79-0,88 arasında değiştiği görülmüştür. Tek faktöre ilişkin eigenvalue değerinin 4,240 ve açıklanan varyansın ise %70,66 olduğu tespit edilmiştir.

**Proaktif İş Davranışları:** Proaktif iş davranışlarını ölçmek için, Parker ve Collins (2010) tarafından geliştirilen ve Uri (2017) tarafından Türkçe'ye uyarlanan "Proaktif İş Davranışları Ölçeği" kullanılmıştır. Ölçek, seslilik (dört madde); sorumluluk (üç madde); problem önleme (üç madde); ve bireysel inovasyon (üç madde) olmak üzere toplam dört boyut ve on üç maddeden oluşmaktadır. Katılımcıların ölçek maddelerine katılım düzeylerini belirlemek için 5'li Likert tipi ölçek (1 = Hiçbir zaman; 5 = Her zaman) kullanılmıştır. Ölçeğe ilişkin örnek bir madde şu şekildedir: "Daha verimli olan yeni iş yöntemlerini hayata geçirmek için çaba gösteririm." Proaktif iş davranışları ölçeğinin boyutlarına ilişkin Cronbach Alpha değerleri sırasıyla; seslilik: ,83; sorumluluk: ,85; problem önleme: ,82; ve bireysel inovasyon: ,83 olarak bulunmuştur. Dört alt boyutun ortalaması alınarak hesaplanan genel proaktif iş davranışları ölçeğinin Cronbach Alpha değerinin ise ,93 olduğu görülmüştür.

**Psikolojik Rahatlık:** Çalışanların psikolojik rahatlık algısı Edmondson (1999) tarafından geliştirilen ve Yener (2015) tarafından Türkçe'ye uyarlanan "Psikolojik Rahatlık Ölçeği" kullanılarak ölçülmüştür. Psikolojik rahatlık ölçeği yedi maddeden oluşmakta olup, katılımcıların ölçek maddelerine katılım düzeyleri 5'li Likert tipi ölçek (1 = Hiç katılmıyorum; 5 = Kesinlikle katılıyorum) kullanılarak belirlenmiştir. Ölçüm modeline ilişkin yapılan Doğrulamalı Faktör Analizi (DFA) sonucunda ölçeğe ait iki madde standardize edilmiş faktör yüklerinin düşük olmasından dolayı modelden çıkarılmıştır. Ölçeğe ilişkin örnek bir madde şu şekildedir: "Bu kurumda çalışanlar karşılaştıkları problemleri ve çözülmesi zor sorunları açıkça dile getirirler." Psikolojik rahatlık ölçeğinin Cronbach Alpha değeri ,84 olarak bulunmuştur.

**Kontrol Değişkenleri:** Geçmiş araştırma bulguları göz önünde bulundurularak (Caesens vd., 2016; Fuller vd., 2006), cinsiyet, yaş, eğitim, kurumdaki hizmet süresi, kurum statüsü ve çalışanın yöneticilik görevine sahip olup olmaması gibi faktörlerin proaktif iş davranışlarını etkileyebileceği düşüncesinden hareketle, bu çalışmada istatistiksel olarak bu değişkenler kontrol edilmiştir. Katılımcıların yaşı 18-24 yaş (1), 25-34 yaş (2), 35-44 yaş (3), 45-54 yaş (4), 55-64 yaş (5) ve 65 üstü (6) olmak üzere altı kategoride; cinsiyet kadın (0) ve erkek (1); eğitim seviyesi lisans (1), yüksek lisans (2) ve doktora (3); hizmet süresi 1 yıldan az (1), 1-4 yıl (2), 5-9 yıl (3), 10-19 yıl (4) ve 20 yıl üstü (5) olmak üzere beş kategoride; yöneticilik görevi yok (0) ve var (1) şeklinde ölçülmüştür. Kategorik değişkenlerden olan yaş, eğitim seviyesi ve hizmet süresi analizden önce kukla (dummy) değişken haline getirilmiştir. Ayrıca, kararsız özdeşleşmenin örgütsel özdeşleşme değişkeninden bağımsız etkisini görebilmek amacıyla, örgütsel özdeşleşme de kontrol değişkeni olarak kullanılmıştır. Örgütsel özdeşleşmeyi ölçmek için Mael ve Ashforth (1992) tarafından geliştirilen ve Tüzün (2006) tarafından Türkçe'ye uyarlanan "Örgütsel Özdeşleşme Ölçeği" kullanılmıştır. Ölçek altı maddeden oluşmakta olup, katılımcıların ölçek maddelerine katılım düzeylerini belirlemek için 5'li Likert tipi ölçek (1 = Hiç

katılmıyorum; 5 = Kesinlikle katılıyorum) kullanılmıştır. Ölçüm modeli DFA bulgularına bağlı olarak, ölçeğe ait bir madde standardize edilmiş faktör yükünün düşük olmasından dolayı modelden çıkarılmıştır. Ölçeğe ilişkin örnek bir madde şöyledir: “Çalıştığım kurumun başarısı benim başarımdır.” Özdeşleşme ölçeğinin Cronbach Alpha değeri ,83 olarak bulunmuştur.

#### 4.3. Analiz

Hipotezlerin testine geçmeden önce, ilk olarak model veri uyumunu görmek üzere tüm değişkenlerin aynı anda analize dahil edildiği DFA gerçekleştirilmiştir (Anderson ve Gerbing, 1988). Modelde, araştırmancın teorik varsayımları doğrultusunda proaktif iş davranışları dört boyutlu yapısından (seslilik, sorumluluk, problem önleme ve bireysel inovasyon) dolayı ikinci düzey çok faktörlü bir yapı olarak çalışılırken, diğer değişkenler tek faktörlü bir yapıda analize dahil edilmiştir. Geçerliliğin sağlanması sürecinde, gerekli uyum iyilik değerlerine (Goodness of Fit Indices) ulaşabilmek adına, psikolojik rahatlıktan iki madde, örgütsel özdeşleşmeden ise bir madde standardize edilmiş faktör yüklerinin düşük olmasından dolayı modelden çıkarılmış (Tablo 1) ve ardından model uyum iyilik değerlerinin kabul edilebilir bir düzeye geldiği görülmüştür: Chi-square/degree of freedom ( $\chi^2/df$ )=2,522 ( $p$ ),00); Tucker-Lewis index (TLI)=,92; Comparative fit index (CFI)=,93; Root mean square error of approximation (RMSEA)=,058.

Daha sonra, ölçekler yakınsak geçerlilik (*convergent validity*) ve ayırışım geçerliliği (*discriminant validity*) açısından incelenmiştir (Fornell ve Larcker, 1981). Tablo 1’de görüldüğü gibi ölçek maddelerinin standardize edilmiş faktör yüklerinin ,50’nin üzerinde ve anlamlı olması ve her bir ölçek için Çıkarılan Ortalama Varyans (AVE-Average Variance Extracted) değerinin ,50 veya üzerinde, Birleşik Güvenirlik (CR-Composite Reliability) değerinin de ,70’in üzerinde olması ölçeklerin yakınsak geçerliliği sağladığını göstermiştir. Ayrıca, Tablo 2’de görüldüğü üzere her bir ölçeğin AVE değerinin karekökünün, ölçekler arası en yüksek korelasyon katsayısından daha yüksek olması da ayırışım geçerliliğinin sağlandığını bulgulamıştır. Ardından, ölçeklere ilişkin güvenirlilik (*reliability*) düzeyleri Cronbach Alpha ( $\alpha$ ) değerleri hesaplanarak test edilmiş ve Tablo 1’de görüldüğü gibi tüm ölçeklerin Cronbach Alpha değerlerinin önerilen en düşük değer olan ,70’in üzerinde olduğu tespit edilmiştir (Nunnally, 1978).

Verinin normal dağılım gösterip göstermediğini tespit etmek amacıyla çalışmada yer alan ölçeklerin çarpıklık (*skewness*) ve basıklık (*kurtosis*) değerleri de incelenmiştir. Çarpıklık ve basıklık değerlerinin  $\pm 1.0$  aralığında olduğu görüldüğünden normal dağılımın sağlandığı kabul edilmiştir (Hair vd., 2010). Ardından, çoklu bağlantı probleminin (*multi-collinearity*) tespiti amacıyla VIF (*Variance Inflation Factors*) değerleri hesaplanmış ve her bir ölçek için VIF değerinin 10’dan daha düşük olduğu (en düşük 1,24, en yüksek 1,80) bulgulandığından veride çoklu bağlantı probleminin olmadığı sonucuna varılmıştır (Hair vd., 2010). Son olarak, verilerin aynı anda tek bir kaynaktan toplanmış olmasından dolayı ortak metot varyans probleminin (Common Method Bias) olup olmadığı Harman’ın Tek Faktör testi (Podsakoff vd., 2003) kullanılarak analiz edilmiştir. Modeldeki değişkenlere ilişkin tüm maddeler dahil edilerek gerçekleştirilen AFA sonucunda, beş faktörün tespit edilmesi ve tek ve genel faktör tarafından açıklanan toplam varyansın (%30), önerilen en yüksek değer olan %50’den düşük olması sebebiyle, toplanan veride ortak metot varyansının problem oluşturmadığı sonucuna ulaşılmıştır.

Çalışmanın hipotezlerini test etmek amacıyla SPSS Process Macro (Model 4) kullanılmıştır (Hayes, 2013). Analizler, bootstrap test tekniği kullanılarak 5.000 yeniden örnekleme seçeneği

ile yapılmıştır. %95 güven aralığında, alt ve üst güven aralığı değerlerinin (*Confidence Interval*; CI) sıfırı kapsamaması etkinin anlamlı olduğunu göstermiştir.

Tablo 1: Ölçüm Modeline İlişkin DFA Bulguları

<b>KARARSIZ ÖZDEŞLEŞME</b>			<b>Faktör yükü</b>
<b>AVE: ,63</b>	<b>CR: ,91</b>	<b><math>\alpha</math>: ,92</b>	
Bu kurumla ilişkim konusunda karışık duygularım var.			,79
Bu kurumu sevmek ve nefret etmek arasında kaldım.			,87
Bu kurumun bir parçası olmak konusunda çelişkili hissediyorum.			,88
Bu kurumla ilgili birbiriyle çelişen hislerim var.			,89
Kendimi bu kuruma ait olmaktan hem gururlu hem de utanmış buluyorum.			,65
Bu kurumun bir üyesi olmaktan hem gurur hem de utanç duyuyorum.			,64
<b>ÖRGÜTSEL ÖZDEŞLEŞME</b>			
<b>AVE: ,50</b>	<b>CR: ,83</b>	<b><math>\alpha</math>: ,83</b>	
Başka biri çalıştığım kurumu eleştirirse, bunu kişisel hakaret olarak düşünürüm.			,67
Diğer insanların çalıştığım kurum hakkındaki düşünceleri beni çok ilgilendirir.			,62
Çalıştığım kurum hakkında konuştuğumda; "onlar" yerine "biz" kelimesini kullanırım.			,66
Çalıştığım kurumun başarısı benim başarımdır.			,80
Başka biri çalıştığım kurumu övdüğünde, bunu kişisel iltifat olarak düşünürüm.			,78
*Medyada çalıştığım kurumla ilgili olumsuzluklar oluşursa, rahatsızlık hissederim.			-
<b>PSİKOLOJİK RAHATLIK</b>			
<b>AVE: ,52</b>	<b>CR: ,84</b>	<b><math>\alpha</math>: ,84</b>	
Bu kurumda bir hata yaparsanız, bu genellikle aleyhinizde kullanılır. (-)			,74
Bu kurumda çalışanlar karşılaştıkları problemleri ve çözülmesi zor sorunları açıkça dile getirirler.			,76
*Bu kurumda çalışanlar, bazen diğer çalışanların fikirlerine sırf farklı (yaş, ırk, dil, din) oldukları için karşı çıkarlar. (-)			-
Bu kurumda hesaplı risk alınabilir. Sonuç olumsuz olsa da çalışan zarar görmez.			,72
*Bu kurumda çalışanlardan kolay kolay yardım istenmez. (-)			-
Bu kurumda hiç kimse benim çabalarımı kasıtlı olarak engelleyecek şekilde davranmaz.			,63
Bu kurumda insanlar ile çalışırken, bana özel beceri ve yeteneklerime değer verilir ve bu yeteneklerim kullanılır.			,75
<b>PROAKTİF İŞ DAVRANIŞLARI</b>			
<b>AVE: ,77</b>	<b>CR: ,93</b>	<b><math>\alpha</math>: ,93</b>	
<b>Seslilik (<math>\alpha</math>: ,83)</b>			
İş ile alakalı görüşlerim diğerlerinden farklı olsa ve insanlar bu görüşlere katılmasa bile yine de dile getiririm.			,76
Kendimi ilgilendiren konularda çekinmeden konuşur ve başkalarının da konuşmalarını teşvik ederim.			,73
Gerektiğinde faydalı bir fikir sunabilmek için iş yerinde olup bitenden haberdar olurum.			,63
Yeni bir fikir ortaya atıldığında veya bir prosedür değişikliği gündeme geldiğinde çekinmeden fikrimi beyan ederim.			,85
<b>Sorumluluk (<math>\alpha</math>: ,85)</b>			
Gelişmiş yöntemleri kendi işyerime getirmek için çaba gösteririm.			,87
Daha verimli olan yeni iş yöntemlerini hayata geçirmek için çaba gösteririm.			,86
Kurum üzerinde baskı yaratan problemlere karşı çözüm sağlamak için çaba gösteririm.			,73
<b>Problem Önleme (<math>\alpha</math>: ,82)</b>			
İşleri ilk etapta yavaşlatsa dahi uzun vadede verimli olacak prosedür ve sistemler geliştirmek için çaba gösteririm.			,79
Yanlış giden şeylerin kökündeki nedeni bulmak için çaba gösteririm.			,78
Tekrarlayan sorunların önlenmesi için planlama yapmaya zaman harcarım.			,76
<b>Bireysel İnovasyon (<math>\alpha</math>: ,83)</b>			
Yaratıcı fikirler üretirim.			,75
Yeni teknikler, teknolojiler veya ürün fikirleri araştırırım.			,80
Fikirleri başkalarına tanıtır ve desteklerim.			,82

Not: Standardize edilmiş faktör yükleri raporlanmıştır. Tüm faktör yükleri 0,05 değerinde anlamlıdır.

\*Madde modelin uyum iyilik değerlerini düşürdüğü için çıkarılmıştır. (-) Madde ters kodlanmıştır.



## 5. Bulgular

Çalışma değişkenlerine ilişkin tanımlayıcı istatistikler ve Pearson korelasyon değerleri Tablo 2’de gösterilmektedir. Buna göre, beklenildiği gibi kararsız özdeşleşme ile hem proaktif iş davranışları ( $r=-0,17$ ;  $p<0,01$ ) hem de psikolojik rahatlık ( $r=-0,54$ ;  $p<0,01$ ) değişkenleri arasında negatif ve anlamlı bir ilişki olduğu görülmüştür. Psikolojik rahatlık değişkeni ile proaktif iş davranışları arasındaki ilişkinin de yine beklenen yönde yani pozitif ve anlamlı ( $r=0,26$ ;  $p<0,01$ ) olduğu tespit edilmiştir.

Tablo 2: Tanımlayıcı İstatistikler ve Korelasyon Analizi Bulguları (n=452)

Değişken	Ort	S.S	1	2	3	4	5	6	7	8
1. Cinsiyet	0,41	0,49								
2. Yönetici Rolü	0,20	0,40	,10*							
3. Kurum Statüsü	0,32	0,47	-,11*	-,07						
4. Yaş1	0,03	0,17	-,01	-,09	,02					
5. Yaş2	0,39	0,49	-,08	,07	-,15**	-,14**				
6. Yaş3	0,09	0,29	,08	,09	-,11*	-,06	-,25**			
7. Yaş4	0,07	0,25	,14**	,18**	,01	-,05	-,21**	-,09		
8. Yaş5	0,02	0,13	,06	,02	,09	-,02	-,11*	-,04	-,04	
9. Eğitim1	0,09	0,29	-,01	-,12*	,11*	,36**	-,20**	-,08	,01	-,04
10. Eğitim2	0,36	0,48	-,02	-,21**	,11*	-,05	-,18**	-,17**	-,14**	-,10*
11. Hiz.Sür1	0,13	0,33	-,02	-,09	,21**	,29**	-,14**	-,03	-,08	-,05
12. Hiz.Sür2	0,30	0,46	-,09	-,09	,25**	,00	-,20**	-,21**	-,08	,02
13. Hiz.Sür3	0,26	0,44	,01	-,03	-,06	-,10*	,03	-,07	-,08	,00
14. Hiz.Sür4	0,21	0,41	-,04	,16**	-,22**	-,09	,43**	,02	-,05	-,07
15. Özdeşleşme	3,13	0,88	,07	,17**	-,05	,03	,06	,03	-,04	,11*
16. Kararsız Özdeşleşme	2,38	0,93	,03	-,01	,02	-,02	-,01	-,03	-,02	-,04
17. Psikolojik Rahatlık	3,04	0,87	-,08	,02	,14**	,07	,06	,03	-,04	,11*
18. Proaktif İş Dav.	3,70	0,69	,14**	,23**	,05	,06	,02	-,04	,03	,10*
<b>Değişken</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	
1. Cinsiyet										
2. Yönetici Rolü										
3. Kurum Statüsü										
4. Yaş1										
5. Yaş2										
6. Yaş3										
7. Yaş4										
8. Yaş5										
9. Eğitim1										
10. Eğitim2	-,24**									
11. Hiz.Sür1	,18**	,07								
12. Hiz.Sür2	,11*	,22**	-,25**							
13. Hiz.Sür3	-,12*	,05	-,22**	-,39**						
14. Hiz.Sür4	-,14**	-,23**	-,20**	-,34**	-,30**					
15. Özdeşleşme	-,04	-,09*	,02	-,10*	,06	-,03	(,71)			
16. Kararsız Özdeşleşme	,01	,01	-,10*	,05	-,02	,04	-,25**	(,79)		
17. Psikolojik Rahatlık	,00	-,03	,16**	-,04	,07	-,15**	,40**	-,54**	(,72)	
18. Proaktif İş Dav.	-,04	-,05	,02	-,03	,00	-,01	,32**	-,17**	,26**	(,88)

Not: \*\*  $p < ,01$ ; \*  $p < ,05$

( ) = AVE Karekök

Hipotezlerin testine ilişkin yapılan analizlerin sonuçları Tablo 3a ve Tablo 3b’de gösterilmektedir. Tablo 3a’da görüldüğü gibi, kararsız özdeşleşmenin proaktif iş davranışları üzerindeki etkisinin negatif ve anlamlı olduğu (H1; Model 1;  $b=-0,08$ ; %95 CI = [-0,1501; -0,0174];  $p<0,05$ ) görülmüştür. Benzer şekilde, kararsız özdeşleşmenin psikolojik rahatlık

üzerinde de negatif ve anlamlı bir etkisinin (H2; Model 2;  $b=-0,41$ ; %95 CI =  $[-0,4854; -0,3460]$ ;  $p<0,001$ ) olduğu tespit edilmiştir. Bununla birlikte, psikolojik rahatlık ile proaktif iş davranışları arasındaki ilişkinin pozitif ve anlamlı (H3; Model 3;  $b= 0,12$ ; %95 CI =  $[0,0346; 0,2126]$ ;  $p<0,01$ ) olduğu bulgulanmıştır. Dolayısıyla, çalışmanın H1, H2 ve H3 hipotezleri desteklenmiştir.

Tablo 3a: Temel Etkilere İlişkin Bulgular (n=452)

Değişken	Model 1: PİD			Model 2: PR			Model 3: PİD		
	B	SE	p	B	SE	p	B	SE	p
(Sabit Terim)	3,3386	,2279	,0000	2,8726	,2396	,0000	2,9837	,2610	,0000
Cinsiyet	,1647	,0631	,0093	-,1325	,0663	,0462	,1810	,0629	,0042
Yönetici Rolü	,3379	,0808	,0000	-,0181	,0849	,8312	,3401	,0802	,0000
Kurum Statüsü	,1505	,0724	,0383	,2351	,0761	,0021	,1214	,0727	,0955
Yaş1	,3142	,2005	,1179	,1837	,2108	,3840	,2915	,1993	,1441
Yaş2	-,0286	,0826	,7292	,2972	,0868	,0007	-,0653	,0831	,4320
Yaş3	-,2630	,1390	,0592	,3094	,1461	,0347	-,3012	,1387	,0304
Yaş4	-,1409	,1545	,3624	,1646	,1624	,3113	-,1613	,1536	,2943
Yaş5	,1509	,2455	,5391	,4956	,2580	,0554	,0897	,2447	,7143
Eğitim1	-,1157	,1254	,3568	,0163	,1318	,9019	-,1177	,1245	,3449
Eğitim2	-,0155	,0761	,8392	,0028	,0800	,9716	-,0158	,0756	,8344
Hiz. Sür.1	-,1942	,1631	,2344	,3344	,1714	,0517	-,2356	,1626	,1482
Hiz. Sür.2	-,1874	,1469	,2027	,1183	,1544	,4439	-,2020	,1459	,1669
Hiz. Sür.3	-,1816	,1385	,1905	,1789	,1456	,2197	-,2037	,1378	,1399
Hiz. Sür.4	-,1590	,1392	,2538	-,1819	,1462	,2142	-,1365	,1384	,3244
Özdeşleşme	,1880	,0367	,0000	,2817	,0386	,0000	,1532	,0386	,0001
Kararsız Özdeşleşme	-,0838	,0338	,0134	-,4157	,0355	,0000	-,0324	,0384	,3993
Psikolojik Rahatlık							,1236	,0453	,0066
F		5,8628			20,8116			6,0376	
p		<,001			<,001			<,001	
R2		0,1774			0,4336			0,1913	

Not: PR= Psikolojik Rahatlık; PİD= Proaktif İş Davranışları

Son olarak, Tablo 3b'de görüldüğü üzere, psikolojik rahatlığın aracı rolüne ilişkin yapılan analiz sonuçları kararsız özdeşleşmenin proaktif iş davranışları üzerinde psikolojik rahatlık değişkeni aracılığıyla dolaylı bir etkiye (H4;  $b=-0,05$ ; %95 CI =  $[-0,0944; -0,0124]$ ) sahip olduğunu gösterdiğinden çalışmanın son hipotezi olan H4 de kabul edilmiştir. Dolayısıyla, psikolojik rahatlık, kararsız özdeşleşme ile proaktif iş davranışları arasındaki ilişkiye aracılık etmektedir. Öyle ki, örgütüyle kararsız özdeşleşen çalışanların psikolojik rahatlık algıları düşmekte ve bu durum proaktif iş davranışı sergileme düzeylerini de azaltmaktadır.

Table 3b: Aracılık Etkisine İlişkin Bulgular (n=452)

Etki	B	SE	LLCI	ULCI
Toplam Etki	-,0838	,0338	-,1501	-,0174
Doğrudan Etki	-,0324	,0384	-,1080	,0431
Dolaylı Etki	-,0514	,0210	-,0944	-,0124

Not: LLCI-ULCI = Alt-Üst Güven Aralığı

## 6. Tartışma

Bu çalışmada temel olarak, Kaynakların Korunması Teorisi (Hobfoll, 1989) bağlamında kararsız özdeşleşmenin proaktif iş davranışlarına etkisi ve bu ilişkide psikolojik rahatlığın aracı rolü incelenmiştir. Kararsızlık konusu geçmişte farklı disiplinlerce sıklıkla çalışılmış olsa da örgütsel bağlamda incelenmesi henüz son yıllarda başlamıştır. Özdeşleşme kararsızlığına ilişkin ise uluslararası literatürde çok az çalışmanın yer aldığı, ulusal literatürde ise konunun, yazarların bilgisi dahilinde, hemen hemen hiç çalışılmadığı görülmüştür. Literatürdeki bu boşluğu doldurmayı amaçlayan bu çalışma, örgütüyle kararsız özdeşleşen çalışanların daha az proaktif iş davranışı sergilediklerini ve kararsız özdeşleşme ile proaktif iş davranışları arasındaki ilişkide psikolojik rahatlığın aracı rolü oynadığını bulmuştur. Öyle ki, kararsız özdeşleşme yaşayan çalışanların psikolojik rahatlık algısı azalmış, bu durum ise proaktif iş davranışları sergilemelerini olumsuz etkilemiştir.

Kreiner ve Ashforth (2004) geliştirdikleri "Genişletilmiş Örgütsel Özdeşleşme Modeli"nde, örgütüyle kararsız özdeşleşen çalışanların iş performansının ötesinde bir performans gösterme konusunda isteksiz olacaklarını belirtmişlerdir. Bu çalışma, Kreiner ve Ashforth'un (2004) bu önermesini ampirik açıdan test etmesi ve yazarları destekler nitelikte özdeşleşme kararsızlığının örgüt başarısı için son derece önemli bir unsur olan proaktif iş davranışlarını negatif etkilediğini göstermesi açısından literatüre oldukça önemli bir katkı sağlamaktadır. Bu bulgu ayrıca, örgütlerde kararsız özdeşleşme kavramına ilişkin yapılmış az sayıda çalışmayla da (Ciampa vd., 2019; Mignonac vd., 2018; Pratt, 2000; Schuh vd., 2016; Vadera ve Pratt, 2013) paralel nitelikte olup, kararsız özdeşleşmenin örgütlerde olası olumsuz sonuçlarına dikkat çekmesi açısından son derece önemlidir.

Çalışmanın diğer önemli bir bulgusu psikolojik rahatlık değişkeninin aracı rolüne ilişkindir. Araştırma sonuçları, kararsız özdeşleşmenin çalışanların bireysel kaynaklarından biri olan psikolojik rahatlık algılarını düşürerek proaktif iş davranışlarının sergilenmesini azalttığını göstermiştir. Örgütte psikolojik rahatlık ikliminin önemi ve çalışanın psikolojik olarak kendisini rahat ve güvende hissetmesini sağlayan/engellenen faktörlerin neler olduğu son yıllarda sıklıkla çalışılan konulardan birisidir. Literatürde örgüt iklimi, lider davranışları, kişilik, takım dinamikleri (Frazier vd., 2017) gibi pek çok faktörün, çalışanların psikolojik rahatlık algıları üzerinde etkisi olduğu tespit edilmiştir. Bu çalışmada raporlanan bulgular ise, psikolojik rahatlığı etkileyen yeni bir faktör olarak özdeşleşme kararsızlığına dikkat çekmekte ve psikolojik rahatlığın sadece kararsız özdeşleşmeden etkilenmediğini, aynı zamanda kararsız özdeşleşme ile proaktif iş davranışları arasındaki ilişkiye aracılık ettiğini de göstermektedir. Buna göre, psikolojik rahatlık algısı düşük olan bir işgörenin proaktif davranışlar sergilemek için motivasyon ve enerjisi de daha az olmaktadır.

### 6.1. Teorik ve Pratik Katkılar

Bu çalışmada raporlanan bulguların hem teorik hem de pratik açıdan literatüre birçok katkısı bulunmaktadır. Çalışmanın ilk teorik katkısı örgütlerde kararsızlık literatürüne olmaktadır. Ashforth ve arkadaşlarının da (2014) belirttiği gibi bir kişiye, amaca, göreve, ya da fikre karşı aynı anda hem pozitif hem de negatif hissedilmesi durumu (ambivalence; kararsızlık) örgütlerde sıklıkla karşılaşılan bir durum olmasına rağmen, bu konuda çok fazla çalışmanın yapılmamış olması literatürün en büyük boşluklarından birisini oluşturmaktadır. Bu noktada, çalışanın örgütüne ilişkin çelişkili hislerinin olması durumu olarak tanımlanan kararsız özdeşleşmenin proaktif iş davranışlarına olan etkisini inceleyerek, bu çalışma örgütlerde kararsızlık literatürüne önemli bir katkı sunmaktadır.

Çalışmanın ikinci teorik katkısı örgütsel özdeşleşme literatürüne olmaktadır. Alan yazında çalışanların örgütleriyle özdeşleşmelerine ilişkin birçok araştırma yapılmış olup, bu çalışmalarda genellikle çalışanların kurumlarıyla yüksek (ya da düşük) düzeyde özdeşleşmelerinin olumlu (ya da olumsuz) sonuçlarına odaklanılmıştır. Ancak, Kreiner ve Ashforth'un (2004) "Genişletilmiş Örgütsel Özdeşleşme Modeli" nde belirtildiği üzere, bazı çalışanlar örgütleriyle kararsız bir şekilde de özdeşleşebilmekte, yani örgütün belirli bir yönüyle özdeşleşirken başka yönleriyle özdeşleşmemeyi tercih edebilmektedirler. Dolayısıyla, bu çalışma gerek ulusal gerekse uluslararası alan yazında ihmal edilen özdeşleşme kararsızlığı kavramı ve etkilerini inceleyerek, örgütsel özdeşleşme literatürüne de önemli bir katkı sağlamaktadır.

Çalışmanın teorik olarak üçüncü katkısı proaktif iş davranışları literatürüne olmaktadır. Örgütler için son derece önemli olan ve çalışanın değişim odaklı davranışlarını kapsayan proaktif iş davranışları, literatürde son yıllarda sıklıkla çalışılan konulardan birisidir. Yapılan araştırmalarda, çalışanları proaktif iş davranışı sergilemeye motive eden ya da engelleyen birçok faktörün olduğu tespit edilmiştir (Bindl ve Parker, 2011). Ancak, özdeşleşme kararsızlığının proaktif iş davranışlarını nasıl etkilediğine ilişkin alan yazında hemen hemen hiç çalışmanın yapılmadığı görülmektedir. Dolayısıyla, bu çalışmanın bulguları, kararsız özdeşleşmenin iş performansını aşarak, proaktif iş davranışları gibi çalışanın değişim odaklı davranışlarını da etkileyebileceğini göstermesi açısından literatüre önemli bir katkıda bulunmaktadır.

Son olarak bu çalışma, özdeşleşme kararsızlığının proaktif iş davranışlarına olan etkisinde psikolojik rahatlığın aracı rolünü inceleyerek, kararsızlığın örgütsel etkilerinin hangi mekanizmalar aracılığıyla gerçekleştiğini (Methot vd., 2017; Rothman vd., 2017) analiz etme açısından da alan yazına önemli bir katkı sunmaktadır. Öyle ki, çalışma sonuçları psikolojik rahatlığın özdeşleşme kararsızlığı ile proaktif iş davranışları arasındaki ilişkiyi açıklayan önemli bir aracı değişken olduğunu göstermiştir. Dolayısıyla bu araştırma, hem kararsız özdeşleşmenin proaktif iş davranışlarına olan etkisini inceleme, hem de bu ilişkinin kara kutusunu (*black box*) açma yönünden literatüre önemli bir katkı sunmaktadır.

Yukarıda sıralanan teorik katkılarının yanı sıra, araştırma bulguları pratik açıdan da literatüre önemli katkılarda bulunmaktadır. Öncelikle çalışma sonuçları örgütlerde kararsızlığın olumsuz etkilerine dikkat çekerek, bu etkilerin en aza indirilmesi ya da ortadan kaldırılabilmesi için yöneticiler tarafından gerekli önlemlerin alınması gerektiğine işaret etmektedir. Buna göre ilk olarak, örgüt ve yöneticiler çalışana çelişkili ya da belirsiz mesajlar göndermekten kaçınılmalıdır (Ciampa vd., 2019). Bunu sağlamak için, örgüt amaçlarının açık ve net bir şekilde belirtildiği bir misyon cümlesine sahip olunması ve yöneticilerin çalışanlarla açık bir iletişim kurup onların problemleriyle ilgilenmeleri önemli olacaktır (Ciampa vd., 2019). Buna ek olarak, çalışanların örgütün hangi yönleriyle özdeşleşmedikleri ya da hangi yönlerini desteklemedikleri tespit edilerek, uygulanacak stratejilerle bu unsurlara ilişkin gerekli düzeltmelerin alınması da yararlı olacaktır. Son olarak, geçmiş çalışmalarda rol içi çatışma ve psikolojik sözleşme ihlali gibi unsurların kararsız özdeşleşmeyi artırdığı göz önünde bulundurulduğunda, çalışana verilen rollerin daha açık ve net olmasının sağlanması, çatışma yaşanması durumunda gerekli desteğin verilmesi ve psikolojik sözleşmeye uygun prosedürlerin benimsenmesi de kararsızlığı azaltmada etkili olacaktır (Kreiner ve Ashforth, 2004). Bununla birlikte, çalışma bulguları yöneticilerin psikolojik olarak rahat bir iklim yaratarak da proaktif iş davranışlarının sergilenmesini artırılacaklarının altını çizmektedir.

Buna göre, örgütlerde oldukça yaygın olan kararsızlık durumunun (Ashforth vd., 2014) olası olumsuz sonuçlarını azaltmak ve çalışanın kendini daha rahat ve güvende hissetmesini sağlamak için, onlarla destekleyici ve güven temelli ilişkiler kurulması (May vd., 2004), başarısızlık durumunda cezalandırmak yerine yapıcı tepkilerde bulunulması (Chen vd., 2020), risk almayı ve yaratıcı düşünmeyi teşvik eden değişim odaklı liderlik davranışlarının sergilenmesi (Ortega vd., 2014), ve farklılıklara toleranslı (Singh vd., 2013) bir örgüt ikliminin oluşturulması da son derece önemli olacaktır.

## 6.2. Sınırlılıklar ve Öneriler

Her çalışmada olduğu gibi, bu çalışmanın da birtakım sınırlılıkları bulunmaktadır. Öncelikle, bu araştırmada Kaynakların Korunması Teorisi (Hobfoll, 1989) temel alınarak özdeşleşme kararsızlığının örgütsel açıdan negatif etkilerine odaklanılmıştır. Ancak, kararsızlık konusuna ilişkin son yıllarda yapılan çalışmalarda (Rothman vd., 2017) kararsızlığın örgütsel çıktıları her zaman olumsuz etkilemediği, bazı durumlarda yaratıcılığı artırma (Fong, 2006), stratejik konularda karar verme etkinliğini artırma (Plambeck ve Weber, 2009) gibi olumlu etkilerinin de olabileceği tartışılmaktadır. Bu bulgular, kararsızlığın sanıldığı gibi her zaman kaçınılması gereken bir durum olmadığını göstermesi açısından dikkat çekicidir. Bu noktada, gelecek çalışmalarda kararsızlığın hangi durum ve koşullarda ve hangi örgütsel çıktılar üzerinde olumlu bir etkiye sahip olabileceğinin araştırılması da önemli olacaktır. Buna ek olarak, bu çalışmada özdeşleşme kararsızlığı ile proaktif iş davranışları arasındaki ilişkiyi açıklayan bir mekanizma olarak psikolojik rahatlık değişkeninin aracı rolü incelenmiştir. Ancak, psikolojik rahatlık değişkeni dışında pek çok faktörün bu ilişkiye aracılık etmesi mümkündür. Bu sebeple, ileride yapılacak çalışmalarda kararsızlığın olumsuz etkilerinin başka hangi psikolojik süreçler (*mediators*; aracı değişkenler) vasıtası ile gerçekleştiğini araştırmak da yararlı olacaktır. Örneğin, negatif duygu yönelimi ve iş-aile çatışması gibi değişkenlerin kararsızlık ve örgütsel çıktılar arasındaki ilişkide nasıl bir aracılık rolü oynayacağını araştırmak önemli olabilir. Ayrıca, çalışmanın bulguları göz önünde bulundurulduğunda, kararsızlığın olumsuz etkilerinin her zaman aynı olup olmayacağını, hangi faktörler ya da durumların (*moderators*; düzenleyici değişkenler) bu ilişkinin gücünü azaltacağını (ya da artıracacağını) incelenmesinin de önemli olacağını altı çizilebilir. Mesela, lider davranışlarının düzenleyici bir değişken olarak incelenmesi literatüre önemli katkılar sağlayabilir. Öyle ki, çalışan örgütüyle kararsız özdeşleşiyor olsa bile, iletişime açık, destekleyici bir liderin varlığı durumunda, kararsızlığın olumsuz etkilerinin daha az olması beklenebilir. Son olarak, bu çalışmada kararsız özdeşleşmenin çalışanların algı (psikolojik rahatlık) ve davranışlarına (proaktif iş davranışı) olan etkilerine odaklanılmış ve gerek psikolojik rahatlık gerekse proaktif iş davranışları üzerinde olumsuz bir etkisi olduğu bulgulanmıştır. Buna göre, ileride yapılacak araştırmalarda kararsız özdeşleşmenin başka hangi örgütsel çıktıları olumsuz etkilediğinin ve çalışanı örgütüyle kararsız özdeşleşmeye iten faktörlerin neler olduğunun incelenmesinin de son derece önemli olacağı söylenebilir.

Bunlara ek olarak, çalışmanın bir takım metodolojik sınırlılıkları da bulunmaktadır. İlk olarak, araştırma modelinde yer alan değişkenleri ölçmek için kullanılan ölçüm araçları çalışanların öz değerlendirmelerini (*self-reports*) içermektedir. Her ne kadar kararsız özdeşleşme ve psikolojik rahatlığın ölçümünde bu tür ölçeklerin kullanılması araştırmanın amacına uygun olsa da proaktif iş davranışlarının ölçümünde öz değerlendirmelerin yanı sıra yönetici ya da iş arkadaşları gibi farklı kaynaklardan toplanan verilerin kullanımı da yararlı olacaktır. Bu sebeple, gelecek araştırmalarda çok kaynaklı verilerin (*multi-source data*)

kullanılmasının literatüre katkı sağlayacağı söylenebilir. Bununla birlikte, çalışmada yer alan anket sorularına verilen yanıtlar katılımcılardan tek bir zaman diliminde yani kesitsel (*cross-sectional*) olarak toplanmıştır. Kesitsel verilerle değişkenler arasındaki uzun dönemli ilişkileri görebilmek ve nedenselliğe ilişkin kesin sonuçlar çıkarabilmek mümkün olmamaktadır. Örneğin, bu çalışmada her ne kadar teorik ve ampirik temellere dayandırılarak örgütle kararsız özdeşleşen bireylerin psikolojik rahatlık algılarının düşeceği öngörülmüş olsa da iki değişken arasında ters yönlü bir ilişkinin varlığı da mümkündür. Öyle ki, çalışanın psikolojik rahatlık algısı düştükçe, örgütünün bazı yönlerine ilişkin negatif bağlar geliştirmesi ve zamanla bu durumun kararsız özdeşleşmeye yol açması da olasıdır. Bu noktada, gelecekte kararsız özdeşleşme ve etkilerini incelemede birden fazla zaman dilimini kapsayan yani boylamsal (*longitudinal*) nitelikte çalışmalar yapılmasının da son derece önemli olacağı söylenebilir. Çalışmanın diğer bir sınırlılığı analiz düzeyi ile ilgili olup, bu araştırmada tüm değişkenler “birey” düzeyinde (*individual-level*) çalışılmıştır. Oysa son yıllarda örgütsel davranış literatüründe çok düzeyli (*multi-level*) çalışmalara olan ihtiyacın da altı çizilmektedir. Bu sebeple, gelecek araştırmacıların konuyu farklı analiz düzeylerinde (örneğin; takımlarda özdeşleşme kararsızlığı gibi) çalışması da literatüre önemli katkılar sunacaktır. Son olarak, bu araştırmacının örneklemini Türkiye’de çalışan bir grup akademisyen oluşturmaktadır. Bilindiği gibi çalışanların risk alma ve belirsizliğe karşı tolerans gösterme eğilimleri kültürden kültüre farklılık gösterebilmektedir. Bu nedenle, kültürlerarası karşılaştırmaların yapılabilmesi ve çalışma bulgularının genelleştirilebilirliği açısından, gelecek araştırmacıların konuyu farklı kültürlerde ve farklı sektörlerde çalışan bireylerden toplanan verilerle incelemesi de önemli olacaktır.

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### Extended Summary

#### What if I Feel Ambivalent? The Role of Psychological Safety on the Relationship between Ambivalent Identification and Proactive Work Behaviors

Ambivalence is defined as “simultaneously positive and negative orientations toward an object” (Ashforth et al., 2014, p.1454). Although the notion of ambivalence has been studied for many years in such disciplines as psychology, sociology, and social psychology, it is only recently that the term has begun to attract interest from organizational researchers. Today, there exists both theoretical (Ashforth et al., 2014; Methot et al., 2017; Rothman et al., 2017) and empirical studies (Ashforth et al., 2013; Lee et al., 2019; Ziegler et al., 2012) examining ambivalence in organizations. In these studies, ambivalence is investigated from different perspectives, such as job ambivalence, CEO ambivalence, LMX ambivalence, and organizational identification ambivalence. Although some theoretical research indicates that ambivalence may have both negative and positive consequences (Rothman et al., 2017), the majority of the evidence from empirical studies (Ashforth et al., 2013; Dechawatanapaisal, 2021; Lee et al., 2019; Lim et al., 2021; Ziegler et al., 2012) reveals a negative effect of ambivalence in organizations. With the purpose of extending this area of research, the current study focuses on examining ambivalent identification and its impact on employee proactive work behaviors. Moreover, this research aims at opening the black box of the relationship between the two constructs by identifying psychological safety as a mechanism through which the effect of ambivalent identification on proactive work behavior is transmitted.

The term ambivalent identification has been introduced to the literature by Kreiner and Ashforth (2004) in their Expanded Model of Organizational Identification and described as “a state of simultaneously holding two contrary positions about one’s organization—such as loving some aspects while hating others” (p. 9). While the topic of organizational ambivalence has recently attracted considerable interest, less attention has been given to the concept of ambivalent identification. In order to fill this gap in the literature, this study examined the impact of ambivalent identification on proactive work behaviors and the mediating role of psychological safety in this relationship. Specifically, drawing on the Conservation of Resources Theory (Hobfoll, 1989), this research proposed that employees who experience high ambivalent identification would be less likely to perform proactive work behaviors as they lack the required resources (such as motivation and energy) to go above and beyond their prescribed role requirements (Kreiner & Ashforth, 2004). Thus, there would be a negative relationship between ambivalent identification and proactive work behaviors. This study further predicted that it is through psychological safety that ambivalent identification would influence proactive work behaviors. That is, when employees feel ambivalent toward their organization, their levels of psychological safety would decrease as they feel not safe to take risks in a place toward which they experience ambivalent feelings (Kreiner & Ashforth, 2004). This in turn would make them less likely to engage in proactive work behaviors.

The data for this study were collected from 452 academicians working in Turkey. Most of the participants in the study were female (59%), had a PhD degree (55%), and working at a public university (67%). 40% of them were in the age category of 25-34 years, and the majority (79%) were not working in a managerial position. SPSS Process Macro (Model 4; Hayes, 2013) was used to test the proposed hypotheses. The findings revealed that ambivalent identification had a negative influence on both psychological safety and proactive work behaviors. That is, employees who experienced high ambivalent identification felt not only less psychologically safe but also less motivated to perform proactive work behaviors. On the other hand, the results showed a positive effect of psychological safety on proactive work behaviors. This suggested that participants with high psychological safety were more motivated to perform extra role behaviors than their counterparts. Finally, it was found that psychological safety mediated the relationship between ambivalent identification and proactive work behaviors. That is, ambivalent identification resulted in lower levels of psychological safety, which in turn, negatively influenced proactive work behaviors.

This research makes several important contributions to the literature. First, to date, numerous studies have been conducted examining positive (or negative) consequences of high (or low) organizational identification. However, as indicated by Kreiner and Ashforth (2004) employees may also experience ambivalent feelings toward their organizations and which may have an important impact on employee outcomes. Thus, this study adds to the literature on organizational identification by examining a neglected research area, ambivalent identification. Next, this research contributes to the literature on proactive work behaviors by empirically testing the proposition that the consequences of ambivalent identification can go beyond job performance (Kreiner & Ashforth, 2004). The study results confirm this prediction by revealing a negative effect of ambivalent identification on proactive work behaviors. This finding is important in that it also adds to the limited research in the literature underlining the negative impacts of ambivalence in organizational identification (Ciampa et al., 2019; Mignonac et al., 2018; Pratt, 2000; Schuh et al., 2016; Vadera & Pratt, 2013). Finally, this study contributes to the psychological safety literature through an examination of psychological safety as a mediator of the relationship between ambivalent identification

and proactive work behaviors. The findings suggest that psychological safety is an important variable which is not only influenced by ambivalent identification but also plays an intervening role in the relationship between ambivalent identification and proactive work behaviors.

Overall, the current study seeks to shed light on the consequences of ambivalent identification by examining the psychological mechanism through which ambivalence influences proactive work behaviors. It is important that future studies consider what other intervening variables (e.g., work-family conflict) may play a mediator role in transmitting the effect of ambivalent identification on work behaviors. In addition, more research is needed to identify the boundary conditions or moderators (e.g., leadership) under which the effect of ambivalence on relevant outcomes is enhanced or weakened. Another avenue for future work is to replicate these findings by collecting data from individuals working in different occupations and with different cultural background. Finally, we encourage future studies to collect longitudinal data and examine the effects of ambivalence from a multi-level perspective.

## The Importance of Store Image in Retail Food Markets: An Analysis within the Framework of the S-O-R Paradigm

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<b>Perakende Gıda Pazarlarında Mağaza İmajının Önemi: S-O-R Paradigması Çerçevesinde Bir Analiz</b>	<b>The Importance of Store Image in Retail Food Markets: An Analysis within the Framework of the S-O-R Paradigm</b>
<b>Öz</b> Rekabetin son derece yoğun olduğu perakende sektöründe mağazaların rakiplerinden farklılaşması ve avantaj elde etmesi oldukça zorlayıcı bir hal almıştır. Bu bağlamda tüketicilerin satın alma niyetini belirlemeye yönelik birçok çalışma yapılmış olmasına rağmen mağaza imaj boyutlarının belirlenerek uyarıcı-organizma-tepki (S-O-R) modeli çerçevesinde ele alınan çalışma sayısı oldukça sınırlıdır. Bu çalışmada mağaza imajının marka bilinirliği, müşteri memnuniyeti, algılanan değer ve satın alma niyeti üzerindeki etkileri S-O-R modeli kullanılarak incelenmiştir. Bu çalışmanın sonucunda, perakende pazarlarının mağaza imajını nasıl güçlendirebileceğine ve dolayısıyla mağaza performansını nasıl iyileştirebileceğine dair kanıtlar sunulmaktadır.	<b>Abstract</b> In the retail industry, where competition is extremely intense, it has become quite challenging for the stores to differentiate themselves from their competitors and gain an advantage. In this context, although many studies have been conducted to determine the purchase intention of consumers, the number of studies that have been handled within the framework of the stimulus-organism-response (S-O-R) model by determining the store image dimensions is quite limited. In this study, the effects of store image on brand awareness, customer satisfaction, perceived value and purchase intention were investigated using the S-O-R model. As a result of this study, evidence is presented on how retail markets can strengthen store image and therefore improve store performance.
<b>Anahtar Kelimeler:</b> Mağaza İmajı, Algılanan Değer, Memnuniyet, Satın Alma Niyeti, Uyarıcı-Organizma-Tepki (S-O-R)	<b>Keywords:</b> Store Image, Perceived Value, Satisfaction, Purchase Intention, Stimulus-Organism-Response (S-O-R)
<b>JEL Kodları:</b> M10, M30, M31	<b>JEL Codes:</b> M10, M30, M31

<b>Araştırma ve Yayın Etiği Beyanı</b>	Bu çalışma Karamanoğlu Mehmetbey Üniversitesi Bilimsel Araştırma ve Yayın Etik Kurulu tarafından 10.12.2021 tarih ve 13 sayılı 217-224 Etik Kurul Onay Belgesi ile bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
<b>Yazarların Makaleye Olan Katkıları</b>	Yazar 1'in makaleye katkısı %50, Yazar 2'nin makaleye katkısı %50'dir.
<b>Çıkar Beyanı</b>	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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## 1. Introduction

The retail sector in the world continues to grow with the effect of many factors. According to Statista data, sales of 27 trillion dollars were realised in the retail sector in 2021 and it is estimated that this figure will reach 30 trillion dollars by 2024 (Sabanoglu, 2021). This growth attracts the interest of many businesses in the sector and can increase competition in the sector. Therefore, it becomes very important for businesses to be able to influence the behaviour of consumers in an increasingly competitive environment. Consumers today seek an experience in retail stores that is more than product variety and quality. This situation, which is a very critical issue for retail management, includes factors such as determining the factors affecting satisfaction, identifying and targeting customer segments, and long-term customer retention (Theodoridis and Chatzipanagiotou, 2009: 709). The concept of retail store image first attracted attention when Pierre Martineau (1958) defined the personality of the retail store (Porter and Claycomb, 1997: 374). Retailers can have the advantage of differentiation in the market thanks to the store image related to the offered product or service, which increases the purchase intention of the customers. Retailers must be vigilant in responding to customer needs and strategically communicating their market image (Graciola et al., 2020: 1). Similarly, some scholars (Yeniçeri, 2005; Erciş et al., 2016; Ülker and Tosun (2021) stated that store image is a strategic marketing tool that can provide retailers with a competitive advantage. Therefore, realising how to store image is perceived by consumers and understanding the impact of store image dimensions can be a critical factor for retailers.

Many studies have been conducted on determining the purchasing behaviour of consumers. Different studies have been conducted to reveal the purchase intentions of store image (Schlosser, 1998; Diallo, 2012; Graciola et al., 2020). When we examined the literature, it was observed that the existing studies (Theodoridis and Chatzipanagiotou, 2009; Aghekyan-Simonian et al., 2012; Graciola et al., 2020) mostly focus on different designs in store image dimensions. On the other hand, there are many studies examining the relationship between store image and structures such as customer satisfaction, perceived value, and brand awareness (Chang and Tseng, 2013; Sharifi, 2014). However, the relationship of store image with these dependent variables has been tested through the main structure. However, explorations on whether store image dimensions have an effect on these dependent variables have been ignored. Testing these relationships directly will be clearly understood whether the store image dimensions have a direct effect on the dependent variables. In summary, the relationship of store image dimensions with these variables has been examined indirectly. However, no study has tested the relationship between dimensions such as customer service, price level and customer satisfaction, perceived value and brand awareness variables. In this study, it is thought to reveal the relationship between these variables. Therefore, a clear understanding of these relationships will provide important implications for business managers in practice. The stimulus-organism-response (S-O-R) model has an important function in revealing these relationships. In the context of consumer behaviour, the S-O-R model provides a theoretical infrastructure to reveal the relationship between many structures (Xu et al., 2020). In this study, the relationship between store image dimensions (price level, customer service, merchandise and architecture project), brand awareness, customer satisfaction, perceived value and purchase intention in retail grocery stores is examined within the framework of S-O-R model.

It is thought that this study will make some contributions to the existing literature. Firstly, this study will explore the direct relationship between store image dimensions and perceived value, brand awareness and customer satisfaction in retail grocery stores. This discovery may provide an extension of the relationship of store image discovered through the main construct in the existing literature. Secondly, the S-O-R model is used as the theoretical infrastructure to investigate the effect of store image on other variables. This will provide an infrastructure for explaining the relationships between similar constructs in future research. Finally, it provides evidence on how retail markets should improve store image, achieve higher brand awareness and greater customer satisfaction, increase perceived value with find, and therefore improve store performance.

The structure of this study is as follows. In the second section, the theoretical background of the study and the relationship between the used theory and the variables in the research model is explained. In addition, hypotheses regarding the relationship between variables are also explained in this section. In the third section, the methodology is included. In the fourth section, the findings are explained; in the fifth section, the results of the study are discussed and suggestions for future studies are made.

## **2. Theoretical Background and Hypothesis Development**

### **2.1. Stimulus-Organism-Response (Stimulus-Organism-Response: S-O-R) Paradigm**

Mehrabian and Russell's (1974) S-O-R model describes how humans respond to environmental stimuli in three stages: stimulus, organism, and response. Following changes in the inner personality, such as exposure to environment-stimulating sensory systems (stimulus) and emotions or thoughts (organism), affect approach-avoidance behaviors (response) that respond to the environment, according to the S-O-R model (Lee et al., 2021: 535). This model aims to integrate individuals' perceptions and feelings about external stimuli and their individual responses to explain positive or negative behaviors that are subsequently created (Chen and Yao, 2018: 2). Donovan and Rossiter (1982) applied the S-O-R model to retail contexts and discovered that shopping experiences (stimulus) in a retail store lead to changes in consumers' inner identities (organism), and that these changes (organism) mediate the causality between shopping experiences (stimulus) and store preferences (response).

Despite its origins in environmental psychology, the S-O-R model has been used in numerous studies in the marketing literature to reveal the effects of stimuli on consumer behavior in the retail industry (Chang et al., 2011; Kim and Lennon, 2013; Chen and Yao, 2018; Mkedder et al., 2021; Tuncer, 2021). There are also studies combining the store image with the S-O-R model (Oh et al., 2008; Kim et al., 2009; Decré and Pras, 2013; Saricam, 2022). Adopting the S-O-R model while examining consumer behavior helps to distinguish between environmental stimuli and internal and external behaviors of consumers (Chen and Yao, 2018: 2). This model shows that the created environment (S - Stimulus) can affect the customer's mood (O - Organism) and evoke behavioral response (R - Response) (Goi et al., 2014: 462).

Store image consists of a number of components such as merchandise, price and physical characteristics. These components that make up the image can be an environmental stimulus for consumers. For example, the excellent service provided by the store staff can increase the satisfaction and excitement of customers (Kim and Lennon, 2013). Therefore, image can affect the cognitive and emotional mood of consumers. Tian et al. (2022) used image as an environmental stimulus in their study. On the other hand, perceived value (Wu and Li, 2018),



customer satisfaction (Dagger and David, 2012) and brand awareness (Xu, Bai, and Li, 2020., 2020) can create an emotional and cognitive state in consumers with the effect of environmental stimuli. Hewei and Youngsook (2022) used purchase intention as a reaction factor. In light of this information, store image dimensions (stimulus), brand awareness, satisfaction, perceived value (organism) and purchase intention (response) were used in this study. The research model created in this context is shown in Figure 1.

## 2.2. Store Image Dimensions

Store image is defined as the set of brand associations associated with the store in the consumer's memory. It focused on factors such as the dimensions of the store image, the quality and variety of the products sold, the prices of the products, the physical facilities of the store and the services provided by the sales personnel (Erdil, 2015: 199). Through the manipulation of store attributes, retailers can develop strong and unique retail brand associations, namely store image (Noordwyk, 2008:15). Retailers can create a brand/store image among consumers based on various factors, including the range of products they offer, their pricing policies, the quality of their services, and other related aspects (Keller, 1993: 11). The image of a store serves not only as a direct indicator of store quality, but also as a risk mitigating factor (Semeijn et al., 2004: 249). The perception of consumers regarding the extensive range of products and services offered by a retailer within a single establishment holds a significant impact on the formation of the store's image (Ailawadi and Keller, 2004: 334).

Store image is seen as a multidimensional concept that includes some elements for retail stores. For example, Graciola et al. (2020) discussed the dimensions of price level, merchandise, store atmosphere, customer service and architectural structure in the context of store image. On the other hand, Ulusu (2009) divided the store image into three dimensions: physical features, after-sales service and employees. Noordwyk (2008), on the other hand, collected the dimensions of store image defined in the literature in eight dimensions store atmosphere, convenience, facilities, corporate, product, promotion, sales personnel and service. Semeijn et al. (2004: 257) argued that a better understanding of the effects of various store image factors could lead to greater strategic consistency and better resource allocation decisions.

There are studies in the literature examining the relationship between store image and purchase intention. For example, Wu et al. (2011) found that store image dimensions such as product variety, product quality, price, value for money, and store atmosphere have a direct and positive effect on purchase intention. Porral and Lang (2015), in their study of the Spanish market, revealed that variables such as price, familiarity, and store image greatly affect purchase intention. Mathur and Gangwani (2016), in their study in India, showed that store image significantly affects the purchase intention of private label apparel brands in retail stores. Graciola et al. (2020), on the other hand, investigated the relationship between store image and purchase intention on different store formats in Brazil and concluded that there is a direct significant effect on this relationship. In this study, the store image consists of 4 dimensions adapted from previous store image studies (Price level, customer service, merchandise and architecture project).

Price Level. Pricing is one of the most important issues of retail competition (Zielke, 2006: 297). Customers are more satisfied when they shop at a low-cost store because they can buy products that are proportional to their purchasing power (Jinfeng and Zhilong, 2009: 489).

The price level refers only to the amount of money customers have to pay (Zielke, 2006: 300). Graciola et al. (2018: 209) showed that low price level affects purchase intention. Erdil (2015), on the other hand, concluded that price image has a significant effect on consumers' purchase intention in his study investigating the effects of brand image, price image, and perceived risk on consumers' store image and purchase intention.

Merchandise. Customers' perception of product variety is a factor that affects their shopping preferences. Therefore, the products must be well stocked and displayed correctly (Graciola et al., 2020: 3). Product perception refers to the degree to which a product category is associated with a store in the minds of consumers. A high level of product perception corresponds to a strong perceptual link between a store and a product. Store image and product perception offer store-specific clues (Bao et al., 2011: 221). Mathur and Gangwani (2016) concluded that product quality, variety and style lead consumers to purchase private label products.

Customer service. In this study, within the scope of the customer service dimension of the store image, the appearance and physical attractiveness of the store employees and other non-verbal factors such as body language that contribute to these are also focused. Qualified features of store employees contribute to the perception of quality service offered by the store, and this affects the purchase intention (Graciola et al., 2020: 3). According to the study of Diallo (2012), it is emphasized that investment in the quality of customer service is necessary in order to make inferences about the purchasing behavior of consumers.

Architecture project. Retailers make distinctive visual identities a part of their store strategies in order to reinforce the power of their brands (Kirby and Kent, 2010). In addition, retail stores include the use of architecture in their strategies to present their brands to consumers. Designing stores from a commercial point of view is seen as a strategy for retail stores that facilitates the creation of distinctive visual identities and reinforces the brand's leadership and strengths in the market (Graciola et al., 2020: 3). Yuan et al. (2021) showed in their study that the architecture project has a very high impact on the consumer experience.

### **2.3. The Relationship Between Store Image Dimensions and Brand Awareness**

Brand awareness creates a specific brand image with strong associations. Since high brand awareness can be a sign of quality and loyalty, it leads the buyer to consider the brand at the point of purchase (Yoo et al., 2000: 197). The store image in the minds of customers is the foundation of brand equity (Ailawadi and Keller, 2004: 332). Brand awareness affects consumer decision making by influencing the formation and strength of brand associations in the brand/store image (Keller, 1993: 3). Brand awareness is the extent to which consumers recognize a specific brand, as well as a brand's ability to achieve a predetermined level of recognition and awareness (Sharifi, 2014: 45). Keller et al. (2011) regarded brand recognition and brand recall as two main constructs of brand awareness. According to Yoo et al. (2000), perceived quality, brand associations, and brand awareness can all impact brand equity by influencing brand loyalty. Graciola et al. (2020: 12), in their research on the relationship between store image and brand awareness, found a significant result with high effect. Huang and Sarigöllü (2012) found a positive relationship between price and brand awareness. From the point of view of brand awareness, an attractive in-store atmosphere and architectural structure offers great potential in terms of creating a unique store image and providing differentiation (Ailawadi and Keller, 2004). According to Keller (1993), consumers' recall of

products in a store supports brand awareness. Graciola et al. (2020) found that investment in customer service has positive effects on brand awareness.

From this point of view, we propose the following hypotheses regarding store image dimensions and brand awareness:

- H1a. Price level positively influences brand awareness.
- H1b. Merchandise positively influences brand awareness.
- H1c. Customer service positively influences brand awareness.
- H1d. Architecture positively influences brand awareness.

#### **2.4. Store Image Dimensions and Customer Satisfaction Relationship**

There is no single accepted measure for customer satisfaction, which has become an important structure in marketing. In the literature, customer satisfaction tends to be a combination of reactions after purchasing and consuming a product/service within a certain timeline (Dash et al., 2021: 612). The majority of current marketing research focuses on the impact of store image on customer satisfaction and loyalty (Jinfeng and Zhilong, 2009: 486). Because the level of customer satisfaction is derived from the approval or disapproval of expectations regarding all features of the service, satisfaction may be the strongest predictor of behavioral intentions (Grace and O’Cass, 2005: 228). On the other hand, addressing the hedonic and utilitarian motives of customers increases satisfaction (Bolton et al., 2021: 5). When purchasing decisions are made with the assistance or advice of store staff, the manner in which this service is provided has an effect on customer satisfaction. However, the extent to which interaction with store employees affects customer satisfaction may vary (Grace and O’Cass, 2005: 229). Theodoridis and Chatzipanagiotou (2009) stated that pricing and products are the main determinants of customer satisfaction. Kursunluoglu (2014) showed that customer service is effective in customer satisfaction and loyalty. Jalil et al. (2016) found that the architectural structure and atmosphere of the store (facility aesthetics, ambiance, spatial layout and employee factor) have a significant impact on customer satisfaction.

From this point of view, we propose the following hypotheses regarding store image dimensions and customer satisfaction:

- H2a. Price level positively influences customer satisfaction.
- H2b. Merchandise positively influences customer satisfaction.
- H2c. Customer service positively influences customer satisfaction.
- H2d. Architecture positively influences customer satisfaction.

#### **2.5. The Relationship Between Store Image Dimensions and Perceived Value**

In research on consumer behavior, perceived value is used as an important antecedent (Jin et al., 2015: 85). Perceived value includes utilitarian value and hedonic value (Chang and Tseng, 2013: 865). By bringing together the customer and the retailer, the store's image influences perceived value in terms of both hedonic and utilitarian values. As a result, perceived value is determined by the benefits versus sacrifices that customers accept when purchasing a product or service (Graciola et al., 2020: 3). This service delivery is important in the value equation because the store's service benefits customers during the retail exchange experience (Grace and O’Cass, 2005: 230). It is assumed that stimuli in retail environments, such as music and ambient odors influence consumers' internal evaluations, such as emotional responses, which in turn elicits approach or avoidance responses. When these

stimuli are used correctly, the customer's perception of the store environment can be positively influenced, making the location more convenient for shopping (Spangenberg et al., 2006: 1282). Ligas and Chaudhuri (2012) studied a comprehensive model that explains the effect between the price level and perceived value and obtained positive results. Jalil et al. (2016) found that the architectural structure and atmosphere of the store (facility aesthetics, ambiance, spatial layout, and employee factor) had a significant impact on perceived value. Kumar (2017) argues that stores can increase perceived value by offering sufficient goods and affordable prices. Helkkula and Kelleher (2010) found significant results between customer service experience and perceived value.

Therefore, we propose the following hypotheses regarding store image dimensions and perceived value:

- H3a. Price level positively influences perceived value.
- H3b. Merchandise positively influences perceived value.
- H3c. Customer service positively influences perceived value.
- H3d. Architecture positively influences perceived value.

## **2.6. The Relationship Between Brand Awareness, Customer Satisfaction and Perceived Value and Purchasing Intention**

The likelihood and willingness of consumers to purchase a specific product or service is referred to as purchasing intention (Wu et al., 2011). Purchase intention represents the degree of probability and willingness of consumers to purchase the product or service. Brand awareness, on the other hand, shows that consumers recognize and remember the brand, which can reflect the attitude of consumers towards the brand (Tan et al., 2021: 3). Brand awareness is the measure of a brand's accessibility in the customer's memory (Shahid et al., 2017: 35) and has a significant impact on consumer decision-making. In this context, consumers typically make decisions based on brand awareness. A well-known brand is much more likely to be chosen by consumers than an unknown brand (Huang and Sarigöllü, 2012: 93). According to Huang and Sarigöllü (2012), brand awareness has a positive relationship and effect on customer reactions. While this relationship represents improved brand performance, it also influences consumer purchasing decisions and intentions. As a result, brand awareness is critical in the customer's decision-making process and serves as a guide in purchasing decisions. Shahid et al. (2017), a brand with high brand awareness will achieve more growth in the market. Therefore, it will help the company to make profits and eventually there will be an increase in market share and profitability. Therefore, for this study, it is important to know the effects of brand awareness on purchase intention. Accordingly, we propose the following hypotheses:

- H4. Brand awareness positively influences purchase intentions

Customer satisfaction is widely acknowledged as a significant consumer response variable (Grace and O'Cass, 2005: 230). Consumers who are more satisfied are more likely to repurchase and recommend the product they purchased. In other words, as customer satisfaction rises, repeat purchases may become more common (Kuo et al., 2009: 890). Customer satisfaction is considered a good indicator of purchase intention, a strong predictor of customer loyalty, and a combination of transaction-specific evaluation and overall evaluation (Dash et al., 2021: 612). Accordingly, we propose the following hypotheses:

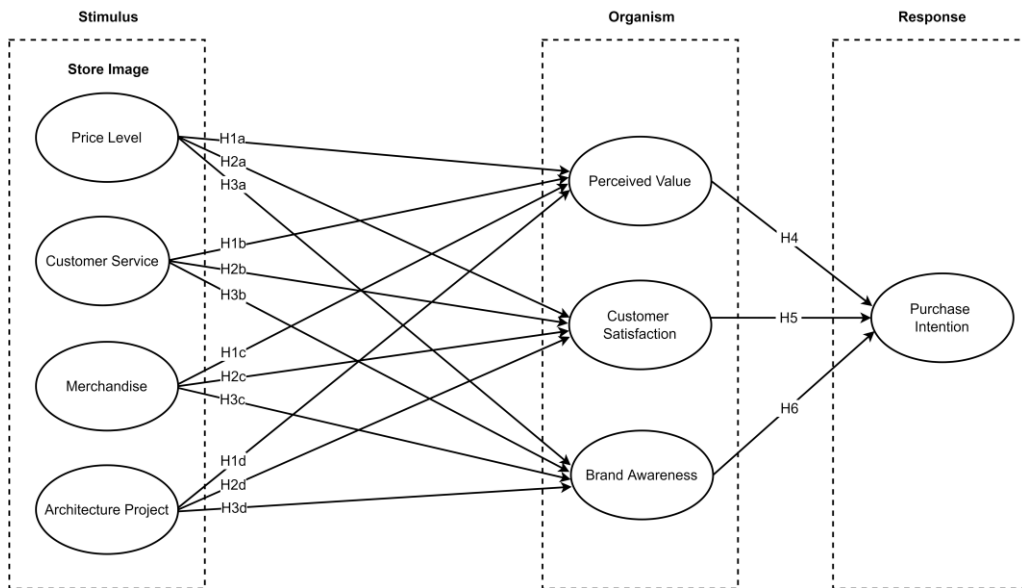
H5. Customer satisfaction positively influences purchase intentions

Zeithaml (1988: 14) defines perceived value as “the consumer's overall assessment of the usefulness of a product or service based on his perceptions of what is given and received”. Zeithaml (1988) points out that the customer sees value in different ways. Some customers describe it simply as a low price, while others simply see the benefits they get. Others consider quality as a value obtained from the product or service they pay for, or view value as the value they get in return for what they give. The research conducted by Konuk (2018) confirms that perceived value increases purchase intention. As a result, consumers tend to buy from stores that offer products at maximum value. Accordingly, we propose the following hypotheses:

H6. Perceived value positively influences purchase intention.

Figure 1 depicts the research model developed within the framework of the S-O-R model.

Figure 1: Research Model



### 3. Method

The purpose of this study was to investigate the relationship between store image, brand awareness, satisfaction, and perceived value in retail markets using the Stimulus-Organism-Response (S-O-R) model. The design of the research is relational and the quantitative research method is used. Furthermore, the data was collected using the convenience sampling method. The data collected by the online survey method are tested using partial least squares structural equation modeling (PLS-SEM).

#### 3.1. Sampling and Data Collection

The sample of this study consists of individuals over the age of 18. Social networking platforms such as Instagram, Facebook, Twitter and WhatsApp were used to reach the target participants. Before collecting primary data, a face validity test was performed. First, the questionnaires were distributed to 37 participants in a pilot study. The participants were

asked if there was any uncertainty in the scale items, and they were asked to complete a questionnaire. Adjustments were made on some items in line with the suggestions of the participants. Opinions of one expert and three academicians were taken on content validity and translation processes. Furthermore, the obtained data were analyzed, and the factor loadings and other item values were controlled.

A total of 210 people participated in the online survey. 57.1% of the 210 participants were female and 42.9% were male. The sample's age distribution shows that the majority of participants are young. 51.4% of the participants are under the age of 34 and 35.7% are between the ages of 35-49. 62.4% of the respondents have a bachelor's degree or higher.

### 3.2. Scale Design

All scales used in this study were taken from the previous literature. A comprehensive literature review was carried out in order to create a questionnaire. The scales determined as a result of the literature review were adapted and included in the survey. The sources used for the survey are presented in Table 1.

Table 1: Scales and Resources Utilized

Scales		Number of Items	Scale Creation Format	Resources
Store Image	Price Level (PL)	4	Adapted	Zielke and Toporowski (2012)
	Customer Service (CSE)	5	Adapted	Theodoridis and Chatzipanagiotou (2009)
	Merchandise (ME)	5	Adapted	Kumar and Kim (2014)
	Architecture Project (AP)	4	Adapted	Wang et al. (2012)
Brand Awareness (BA)		6	Adapted	Yoo et al. (2000)
Customer Satisfaction (CSA)		3	Adapted	Slack et al. (2020)
Perceived Value (PV)		6	Adapted	De Toni and Mazzon (2014)
Purchase Intention (PI)		4	Adapted	Watanabe (2014)W14)

The questionnaire form consists of six parts. The first part includes store image, the second part includes perceived value, the third part includes customer satisfaction, the fourth part includes brand awareness, and the fifth part includes purchase intention scales. In the sixth part, there are statements about the demographic characteristics of the participants (age, gender, education level and monthly income and monthly grocery shopping amount). The survey parts were formed in accordance with the 5-point Likert Scale Type, between 1 and 5 as "1 = I strongly disagree", "5 = I strongly agree". There are 37 items in total in the questionnaire, excluding demographic information. Variables and scale items are given in Appendix 1.

### 3.3. Data Analysis

The collected data were analyzed with SmartPLS software using Structural equation modeling (SEM). Before the analysis of the research model, reliability and validity analyzes of the structures included in the research were carried out. In this context, reliability, convergence and divergence validity were evaluated.

Table 2: Measurement Model Results

Variables	Items	Loadings	Cronbach's $\alpha$	CR	AVE
Price Level (PL)	PL1	0.871	0.774	0.858	0.608
	PL2	0.549			
	PL3	0.843			
	PL4	0.814			
Merchandise (ME)	ME1	0.715	0.753	0.835	0.504
	ME2	0.774			
	ME3	0.682			
	ME4	0.742			
	ME5	0.626			
Customer Service (CSE)	CSE1	0.841	0.887	0.918	0.691
	CSE2	0.883			
	CSE3	0.870			
	CSE4	0.840			
	CSE5	0.713			
Architecture Project (AP)	AP1	0.929	0.930	0.950	0.827
	AP2	0.923			
	AP3	0.923			
	AP4	0.861			
Perceived Value (PV)	PV1	0.505	0.878	0.910	0.634
	PV2	0.847			
	PV3	0.899			
	PV4	0.829			
	PV5	0.879			
	PV6	0.751			
Customer Satisfaction (CSA)	CSA1	0.894	0.848	0.908	0.767
	CSA2	0.908			
	CSA3	0.824			
Brand Awareness (BA)	BA1	0.685	0.758	0.831	0.503
	BA2	0.788			
	BA3	0.781			
	BA4	0.829			
	BA5	0.792			
Purchase Intention (PI)	PI1	0.913	0.903	0.932	0.774
	PI2	0.900			
	PI3	0.827			
	PI4	0.877			

**4. Findings**

**4.1. Common Method Variance**

Before applying the PLS method, it is necessary to examine the data for the presence of common method bias (Tehseen et al., 2017). The most commonly used method to examine common method variance is Harman's Single Factor Test. This test is performed to determine whether a single factor explains the variance in the collected data (Chang et al., 2010). Accordingly, all items were subjected to factor analysis under a single factor. Data were analyzed with SPSS. The percentage of variance explained by a single factor was 35.8%. The results show that there is no problem with common method variance in the study.

**4.2. Reliability and Validity**

The validity and reliability of the research model were tested using the measurement model. The measurement model results are shown in Table 2. To test its reliability, Cronbach's alpha and composite reliability (CR) coefficients were examined. According to the measurement model results in Table 2, it is observed that cronbach's alpha values vary between 0.753 and 0.930 and CR values vary between 0.831 and 0.950. Therefore, it shows that both parameters exceed the threshold value of 0.7 (Fornell and Larcker, 1981), which provides the reliability requirement, and the reliability of the scales is ensured.

For construct validity, convergent and discriminant validity were examined. The mean variance (AVE) and indicator loads extracted for convergent validity were examined. It is expected that the explained mean variance (AVE) value will be  $\geq 0.50$  (Fornell and Larcker, 1981) and factor loads  $\geq 0.50$  (Hair et al., 2021: 96). Accordingly, as shown in Table 2, all AVE values are above the recommended 0.5 level. The loadings of all items are above the expected threshold of  $\geq 0.5$ . Accordingly, the convergent validity was confirmed. Only BA06 was excluded because it gave results below the expected value (-0.047).

For discriminant validity, Fornell-Larcker criterion, cross-loads and HTMT ratio were examined. According to the Fornell and Larcker criterion, which is the first method, the square roots of AVE must exceed the correlation coefficients of each latent variable (Fornell and Larcker, 1981). According to the information in Table 3, the validity was confirmed since the condition that the Fornell Larcker values were higher than the correlation values in the rows and columns of the latent variables was met.

Table 3: Fornell-Larcker Criterion

	PV	PL	BA	CSE	CSA	AP	PI	ME
PV	<b>0.796</b>							
PL	0.619	<b>0.780</b>						
BA	0.393	0.313	<b>0.709</b>					
CSE	0.560	0.337	0.353	<b>0.832</b>				
CSA	0.656	0.514	0.467	0.528	<b>0.876</b>			
AP	0.586	0.309	0.221	0.568	0.495	<b>0.909</b>		
PI	0.591	0.485	0.628	0.460	0.722	0.396	<b>0.880</b>	
ME	0.585	0.445	0.286	0.442	0.561	0.490	0.485	<b>0.710</b>



In the second step, cross factor loadings were examined. Chin (1998) proposed determining discriminant validity by determining whether each factor loading is greater than all of its cross-loadings. Table 4 shows that each factor loading is greater than all cross loadings.

Table 4: Cross Factor Loads

	PV	PL	BA	CSE	CSA	AP	PI	ME
PV01	<b>0.505</b>	0.258	0.262	0.241	0.338	0.371	0.360	0.215
PV02	<b>0.847</b>	0.503	0.333	0.542	0.598	0.516	0.524	0.570
PV03	<b>0.899</b>	0.571	0.329	0.527	0.561	0.536	0.506	0.496
PV04	<b>0.829</b>	0.547	0.339	0.468	0.528	0.505	0.459	0.516
PV05	<b>0.879</b>	0.558	0.354	0.451	0.563	0.485	0.525	0.510
PV06	<b>0.751</b>	0.457	0.257	0.378	0.505	0.366	0.436	0.410
PL01	0.625	<b>0.871</b>	0.222	0.344	0.485	0.382	0.409	0.420
PL02	0.337	<b>0.549</b>	0.242	0.266	0.300	0.181	0.249	0.152
PL03	0.458	<b>0.843</b>	0.275	0.258	0.423	0.176	0.435	0.382
PL04	0.465	<b>0.814</b>	0.254	0.173	0.369	0.186	0.396	0.388
BA01	0.346	0.338	<b>0.685</b>	0.288	0.372	0.261	0.376	0.320
BA02	0.309	0.282	<b>0.788</b>	0.248	0.327	0.113	0.488	0.203
BA03	0.242	0.217	<b>0.781</b>	0.289	0.312	0.106	0.478	0.141
BA04	0.336	0.241	<b>0.829</b>	0.286	0.414	0.189	0.557	0.252
BA05	0.243	0.102	<b>0.792</b>	0.243	0.349	0.152	0.515	0.169
CSE01	0.444	0.281	0.329	<b>0.841</b>	0.428	0.444	0.404	0.360
CSE02	0.403	0.238	0.312	<b>0.883</b>	0.407	0.416	0.373	0.293
CSE03	0.512	0.361	0.342	<b>0.870</b>	0.510	0.486	0.413	0.379
CSE04	0.448	0.207	0.263	<b>0.840</b>	0.384	0.486	0.293	0.400
CSE05	0.503	0.290	0.210	<b>0.713</b>	0.446	0.517	0.416	0.396
CSA01	0.638	0.521	0.447	0.511	<b>0.894</b>	0.432	0.709	0.483
CSA02	0.604	0.441	0.373	0.473	<b>0.908</b>	0.514	0.619	0.532
CSA03	0.465	0.377	0.411	0.395	<b>0.824</b>	0.342	0.560	0.458
AP01	0.565	0.311	0.222	0.535	0.502	<b>0.929</b>	0.401	0.475
AP02	0.505	0.283	0.260	0.500	0.456	<b>0.923</b>	0.398	0.467
AP03	0.532	0.244	0.158	0.526	0.391	<b>0.923</b>	0.325	0.431
AP04	0.528	0.279	0.159	0.502	0.441	<b>0.861</b>	0.308	0.405
PI01	0.445	0.408	0.637	0.390	0.600	0.296	<b>0.913</b>	0.410
PI02	0.441	0.350	0.591	0.322	0.559	0.290	<b>0.900</b>	0.394
PI03	0.702	0.546	0.482	0.526	0.743	0.453	<b>0.827</b>	0.498
PI04	0.453	0.371	0.503	0.352	0.609	0.331	<b>0.877</b>	0.387
ME01	0.412	0.328	0.196	0.239	0.418	0.286	0.418	<b>0.715</b>
ME02	0.382	0.361	0.207	0.272	0.395	0.400	0.358	<b>0.774</b>
ME03	0.366	0.370	0.279	0.310	0.357	0.285	0.321	<b>0.682</b>
ME04	0.540	0.306	0.138	0.374	0.464	0.444	0.290	<b>0.742</b>
ME05	0.347	0.211	0.215	0.373	0.340	0.304	0.348	<b>0.626</b>

### 4.3. Structural Model

After the measurement model was verified, as a second step, a path analysis test was applied to test the hypotheses. The effect levels between the variables were analyzed using the SmartPLS program. While examining the relationship between the observed variables and latent variables in the measurement model, the relationships between the latent structures that constitute the aims of the research were tested at this stage. In this study, 15 hypotheses were tested. While 13 of these hypotheses were accepted, 2 of them were rejected. The analysis of the structural model including  $R^2$ , beta ( $\beta$ ) and P values obtained as a result of the analysis is presented in Figure 2.

In the table of hypothesis results in Table 5, the results of the dimensions of the store image such as price level, customer service, merchandise and architecture project on perceived value, customer satisfaction and brand awareness are seen.

The dimensions of store image are price level (H1a,  $\beta=0.384$ ,  $P<0.00$ ), customer service (H1b,  $\beta=0.194$ ,  $P<0.01$ ), merchandise (H1c,  $\beta=0.201$ ,  $P<0.00$ ) and architecture project (H1d),  $\beta=0.194$ ,  $P<0.01$ ), there is a positive and significant relationship on the perceived value. Accordingly, H1a, H1b, H1c and H1d were accepted. On the other hand, the dimensions of the store image are price level (H2a,  $\beta=0.272$ ,  $P<0.00$ ), customer service (H2b,  $\beta=0.238$ ,  $P<0.00$ ), merchandise (H2c,  $\beta=0.263$ ,  $P<0.00$ ) and architecture project (H2d,  $\beta=0.146$ ,  $P<0.05$ ) there is a positive and significant relationship on customer satisfaction. Accordingly, H2a, H2b, H2c and H2d were accepted. Finally, while price level (H3a,  $\beta=0.185$ ,  $P<0.05$ ) and customer service (H3b,  $\beta=0.268$ ,  $P<0.01$ ) found a positive and significant relationship on brand awareness; merchandise (H3c,  $\beta=0.100$ ,  $P<1.126$ ) and architecture project (H3d,  $\beta=-0.043$ ,  $P<0.592$ ) do not have a positive and significant relationship on brand awareness. Accordingly, H3a, H3b were accepted, while H3c and H3d were rejected.

On the other hand, the effects of perceived value, customer satisfaction and brand awareness on purchase intention were also examined. As a result of the findings obtained in this context, a positive and significant relationship was found between perceived value and purchase intention (H4,  $\beta=0.151$ ,  $P<0.05$ ). A positive and significant relationship was found between customer satisfaction and purchase intention (H5,  $\beta=0.454$ ,  $P<0.00$ ). A positive and significant relationship was found between brand awareness and purchase intention (H6,  $\beta=0.361$ ,  $P<0.00$ ). Accordingly, hypotheses H4, H5 and H6 were accepted.

Figure 2: Analysis of the Structural Model

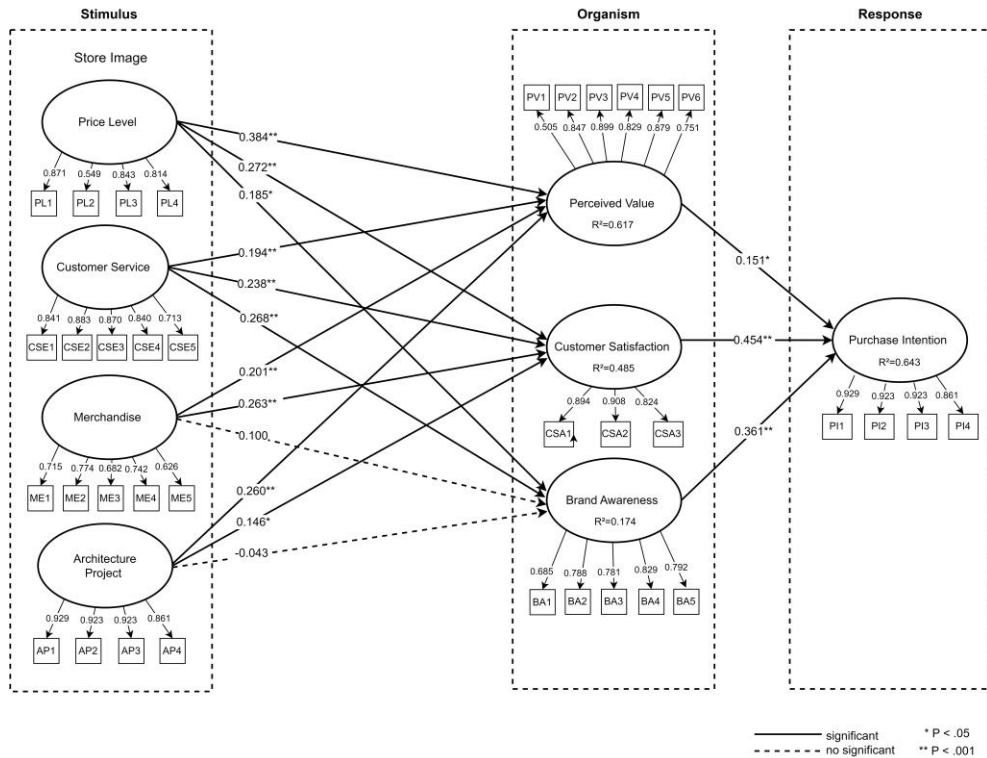


Table 5: Hypothesis Results

	Hypothesis	Path coefficient ( $\beta$ )	t-value	p-value	Result
PL -> PV	H1a	0.384	7.226	0.000	Supported
CSE -> PV	H1b	0.194	3.337	0.001	Supported
ME -> PV	H1c	0.201	3.960	0.000	Supported
AP -> PV	H1d	0.260	4.694	0.000	Supported
PL -> CSA	H2a	0.272	5.722	0.000	Supported
CSE -> CSA	H2b	0.238	3.649	0.000	Supported
ME -> CSA	H2c	0.263	3.516	0.000	Supported
AP -> CSA	H2d	0.146	2.100	0.036	Supported
PL -> BA	H3a	0.185	2.512	0.012	Supported
CSE -> BA	H3b	0.268	3.289	0.001	Supported
ME -> BA	H3c	0.100	1.126	0.261	Not supported
AP -> BA	H3d	-0.043	0.592	0.554	Not supported
PV -> PI	H4	0.151	2.425	0.016	Supported
CSA -> PI	H5	0.454	7.068	0.000	Supported
BA -> PI	H6	0.361	7.076	0.000	Supported

\*\*\* PL: Price Level, CSE: Customer Service, ME: Merchandise, AP: Architecture Project, PV: Perceived Value, CSA: Customer Satisfaction, BA: Brand Awareness, PI: Purchase Intention

## 5. Discussion and Conclusion

Based on the S-O-R framework, the main purpose of this study is to examine the relationships between price level (S), customer service (S), merchandise (S) and architecture project (S), perceived value (O), customer satisfaction (O), brand awareness (O) and purchase intention (R). It is thought that the findings of this study contribute to the literature.

According to the research findings, price level, customer service, merchandise and architecture project have a positive and significant effect on customer satisfaction. Therefore, these findings show that maintaining an appropriate price level for the customer, providing product variety, equipping sales staff with the competencies to represent the store and investing in the attractiveness of the store architecture (stimuli such as decor, music and ambient odours) can increase customer satisfaction. Product and price level are the dimensions that have the highest impact on customer satisfaction. Similarly, it was confirmed that image dimensions have a positive and significant effect on perceived value. It can be stated that price level has the strongest effect on perceived value. This finding shows that customers are more price sensitive and have a cost-benefit based perspective. The customer service dimension has the weakest effect. Therefore, this finding shows that the level of customer service is a less utilitarian factor on the customer. While price level and customer service have a positive effect on brand awareness, architectural structure and product have no effect on brand awareness. In previous studies, contradictory results have emerged on the relationship between store image and brand awareness. Therefore, these different results may be due to the samples obtained from different types of shopping stores. For example, consumers who shop in price competition-oriented grocery stores may have an awareness of the price level of the brand. Therefore, the architectural structure of such stores may not create a brand association in the customer. The relationship between perceived value, customer satisfaction and brand awareness and purchase intention was confirmed by positive and significant effects. These findings indicate that a good image and a high awareness brand can increase customer satisfaction and improve customer purchase intentions. These results are consistent with Chi et al. (2009), Kuo et al. (2009) and Jiao et al. (2021), is consistent with the results of studies developed by.

The findings of this study offer several theoretical contributions to the existing literature. Firstly, in previous studies (Chang and Tseng, 2013; Graciola et al., 2020; Sharifi, 2014), the relationship between store image and other dependent variables has been analysed on the basis of the main construct. In this study, the relationship between store image dimensions and other dependent variables was directly explored and the impact level of each image dimension was revealed in more detail. For example, previous studies (Beneke and Zimmerman, 2014; Jinfeng and Zhilong, 2009) have revealed different results between store image and brand awareness. However, it was unclear which store image dimensions were effective in these results. This uncertainty has been clarified with the findings of this study. Therefore, the literature on store image has been expanded. Secondly, the theoretical background of the research model of this study is the S-O-R model. Therefore, since this theoretical background is used for the first time within the framework of the model formed by these variables, it has created an infrastructure for similar future studies. Thirdly, perceived value, customer satisfaction and brand awareness of the dimensions of store image within the framework of retail grocery stores have been tested for the first time in this study. Therefore, these findings provide important contributions to the literature. Finally, the results

of previous studies have become stronger by confirming the effect of perceived value, customer satisfaction and brand awareness on purchase intention.

The findings of this study provide various managerial contributions for retail stores. According to the findings of this study, price level affects customer satisfaction, perceived value and brand awareness. Therefore, the fact that the products offered to customers are cheaper and more favourable than competitor stores may affect customer satisfaction and perceived value. On the other hand, the cheap product approach may increase brand awareness by creating an image in the consumer. Moreover, product, customer service and architectural structure affect customer satisfaction and perceived value. These findings suggest that businesses with quality products, product variety and sufficient stock can increase consumer satisfaction and perceived value by creating an image. On the other hand, polite, friendly and empathetic store personnel can positively affect consumers. Therefore, it may be useful for businesses to provide customer service training to their staff. Moreover, the importance given by business managers to issues such as the atmosphere, lighting and decoration of the store may affect the satisfaction and perceived value of consumers.

#### **5.1. Limitations and Recommendations**

There are some limitations to the study that should be addressed in future research. This research is limited to data obtained through an online survey. In future studies, data can be physically collected in market environments. On the other hand, most of the factors in the research model, which includes the important factors affecting consumers, are of a quality that can attract the attention of researchers who examine their purchasing behavior. More research is needed to determine the extent to which these factors change consumers' purchasing behavior. The findings reflect the consumer preferences of retail markets. As a result, caution should be taken when generalizing these study findings to other retail categories. Finally, using environmental factors, this study can be replicated and applied to other retail sectors.

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### Appendix 1. Variables and Scale Items

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**Price Level**

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PL01 – Prices in this market are usually very low.

PL02 – Prices in this market are usually very high.

PL03 – We can buy cheap products from this market.

PL04 – Prices in this market are lower than other markets.

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**Customer service**

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CSE01 – Salespeople have a good appearance.

CSE02 – Salespeople take care of the customer.

CSE03 – Salespeople are friendly.

CSE04 – Salespeople are knowledgeable enough.

CSE05 – There are enough salespeople.

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**Merchandise**

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ME01 – Market offers reliable products.

ME02 – There is a wide range of products in the market.

ME03 – The market is full of products.

ME04 – The market has high quality products.

ME05 – Market has differentiated products

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**Architectural Project**

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AP01 - The architecture of the market has an attractive character.

AP02 – Your market is attractively decorated.

AP03 – The interior wall and floor color schemes are attractive.

AP04 – The overall design of this market is interesting.

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**Perceived Value**

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PV01 – Money is easily spent in this market.

PV02 – The saying “You get what you pay for” applies to this market.

PV03 – The benefits offered in this market are in line with the sacrifices/costs made.

PV04 – The benefit I will get from this market is very high.

PV05 – The price in this market is more than good value for money.

PV06 – I think the prices in this market represent the real value of the competitor market.

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**Customer Satisfaction**

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CSA01 – Based on my overall experience with supermarkets, I am very satisfied

CSA02 – The shopping experience offered by supermarkets exceeds my expectations

CSA03 – I am happy to shop at supermarkets.

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**Brand awareness**

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BA01 – I know what this store's brand/logo looks like.

BA02 – I can recognize this store among other competing brands.

BA03 – I am aware of this store.

BA04 – Some features of this store immediately come to mind.

BA05 – I can quickly remember the symbol or logo of this store.

BA06 – I have a hard time imagining this store in my mind.

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**Purchasing Intention**

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PI01 – I will most likely shop from this supermarket again.

PI02 – I will definitely shop at this supermarket again.

PI03 – I will recommend this supermarket to my friends and family.

PI04 – I plan to shop at this supermarket in the near future.

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