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## **Editorial**

The OPUS Journal of Society Research (OPUS JSR) brings together a diverse range of theory, practice, and research in the pursuit of understanding human behavior in its social context. The interdisciplinary viewpoint lays the groundwork for presenting and establishing a holistic relationship with other disciplines, concepts, and methods. The OPUS JSR allows researchers to use an interdisciplinary approach to present different interpretations and alternative points of view. The theoretical frameworks that underpin the analyses and interpretations of the subjects under study are as important as the intersection of disciplines. This framing can lead to greater clarity of multiple, even contradictory findings, allowing for a better understanding of social dynamics that would otherwise be invisible if scholars concentrated on a single set of theoretical dynamics.

OPUS JSR reflects more than 10 years of journal sponsorship by ADAMOR Society Research Center and its partner organization, the Institute of Urban Studies. The OPUS Journal of Society Research is the direct successor of two previously published journals: OPUS Turkish Journal of Social Policies and Work Life Studies: OPUS International Journal of Society Research (ISSN 2528-9527 E-ISSN 2528-9535). Since its inception, our journal has steadily increased its issue numbers in the Year - Volume and Issue format. As of 2024, our issue numbers will be limited to 1-6.

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RESEARCH ARTICLE

# Antecedents of Customer Loyalty in Mobile Hotel Reservation Applications

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## Abstract

*This study aims to identify the determinants of customer loyalty in mobile hotel booking applications (MOHOREAPP) in Turkey. The research developed a model integrating variables such as performance expectancy, trust, social influence, customer satisfaction, convenience, compatibility, perceived risk, and loyalty, which was examined using structural equation modeling. A survey was conducted, and data were collected from 511 MOHOREAPP users across Turkey. The results indicate that performance expectancy and trust have a significant relationship with MOHOREAPP customer satisfaction. It was found that performance expectancy and trust have a positive and significant effect on loyalty. Additionally, customer satisfaction, convenience, and compatibility have a positive effect on loyalty, while perceived risk has been identified to have a negative effect on loyalty. These findings provide important insights for companies developing mobile hotel booking applications, highlighting the areas to focus on to increase customer loyalty. Consequently, this study makes a critical contribution to understanding the factors that influence the loyalty of MOHOREAPP users and in shaping customer relationship strategies.*

**Keywords:** Loyalty, Mobile Hotel Reservation Applications, Mobile Commerce, Hospitality

## Öz

*Bu çalışma, Türkiye'deki mobil otel rezervasyon uygulamaları (MOHOREAPP) üzerinden müşteri sadakatinin neye bağlı olduğunu keşfetmeyi amaçlamaktadır. Araştırmada, müşteri sadakatinin oluşumunda etkili olduğu düşünülen performans beklentisi, güven, sosyal etki, müşteri memnuniyeti, uygunluk, uyumluluk ve algılanan risk gibi değişkenleri içeren bir model geliştirilmiştir. Bu model, yapısal eşitlik modellemesi yöntemiyle detaylı bir şekilde incelenmiştir. Türkiye genelinde yapılan anket çalışmasıyla, 511 MOHOREAPP kullanıcılarından elde edilen veriler analiz edilmiştir. Araştırma sonuçları, performans beklentisi ve güven unsurlarının müşteri memnuniyeti ile güçlü bir ilişkiye sahip olduğunu ortaya koymuştur. Bu iki faktörün, müşteri sadakatini önemli ölçüde etkilediği ve sadakat üzerinde pozitif bir etki yarattığı görülmüştür. Ayrıca, müşteri memnuniyetinin, uygunluğun ve uyumluluğun da müşteri sadakati üzerinde olumlu bir etkisi olduğu, buna karşılık algılanan riskin ise sadakat üzerinde olumsuz bir etkiye sahip olduğu tespit edilmiştir. Bu bulgular, mobil otel rezervasyon uygulamalarını geliştiren şirketler için, müşteri sadakatini artırmak adına odaklanmaları gereken alanları belirlemede önemli bir kaynak teşkil etmektedir. Sonuç olarak, bu çalışma, MOHOREAPP kullanıcılarının sadakatini etkileyen faktörleri anlamada ve müşteri ilişkileri stratejilerini şekillendirmede kritik bir katkı sağlamaktadır.*

**Anahtar Kelimeler:** Sadakat, Mobil Otel Rezervasyon Uygulamaları, Mobil Ticaret, Konaklama

## Introduction

With the progression of communication technologies, the use of mobile devices has started to increase day by day. The quantity of mobile devices in the globe in 2021, which reached 14.92 billion with an increase of approximately 1 billion compared to 2020, is projected to amount to 18.23 billion by 2025 (Statista, 2022a). Mobile devices, which have increased enormously every year, are not only used for voice communication, but after the integration of the internet into mobile devices, communication of mobile devices with other internet-connected devices has been ensured. The number of smartphone users, which amounted to 6.26 billion in 2021 with an increase of approximately two times compared to 2016, is estimated to reach 7.51 billion in 2026 with a rise of 1.25 billion (Statista, 2022b). Due to the fact that people purchase mobile devices connected to the Internet in huge quantities, businesses have focused on mobile website design and mobile application development, where corporations will be in rich interactions with their customers.

With the prevalence of mobile devices among users, the adaptation of businesses to mobile technologies has led individuals to use mobile commerce. The preferences of users to use their mobile devices in their travel preferences have caused to the employ of mobile commerce in the hotel industry at a high rate (Murphy et al., 2016). Thanks to mobile devices connected to the Internet, users can make hotel research and access information about the hotel they want to go from any time and any place. Hotel transactions made by people without space and time restrictions have caused them to leave their personal computers and use the mobile devices they carry with them (Gibbs et al., 2016). 61 percent of American travelers booked and paid for trip via their smartphones in 2017 due to the convenience and flexibility of the mobile devices (Travel Agent Central, 2018).

In total tourism revenue, reservations made from mobile devices account for a considerable percentage, and hotels are one of the most widespread sectors for reservations made from smartphones (Dias and Alfonso, 2020). As three-quarters of hotel businesses has believed it is essential to suggest a mobile reservation

opportunity, the tourism industry has introduced mobile hotel reservation applications (MOHOREAPP), causing people who have transactions with hotels to complete their transactions in a short time (Wang and Wang, 2010; Ozturk et al., 2016b). With this application, which is always ready for use, consumers have the opportunity to find hotels, access information about hotels, compare hotel prices, and make hotel reservations. With the convenience of one-click transactions on mobile devices, hotel reservations made from mobile devices grew by 67% in 2017 compared to the prior year, while hotel reservations made from personal computers rose by only 4% (Travel Agent Central, 2017).

Since mobile hotel reservation systems have appeared as a crucial delivery technological innovation for hotel businesses and online travel agencies, it is necessary to realize the customer loyalty in MOHOREAPP. Customer loyalty has turn out to be an important matter for businesses because it is more costly to acquire new customers than retaining existing customers, increased long-term profits, reduced marketing costs, high market share gain and competitive advantage. (Aeker, 1991; Reichheld and Scheffer, 2000; Luarn and Lin, 2003; Lin and Wang, 2006). Due to these advantages provided to the hotels and agencies that launch the MOHOREAPP, it has become necessary for the relevant institutions to establish long-term connections that lasts many years with their customers.

Most of the past studies on mobile hotel reservations (Wang and Wang, 2010; Ozturk et al., 2016b; Wang et al., 2016; Kim et al., 2021; Mohamad et al., 2021) and mobile hotel applications (Huang et al., 2019; Stocchi et al., 2019; Hossny, 2021) have focused on user's adaptation and usage behavior. Research on customer loyalty in MOHOREAPP is limited. The aim of study is to investigate the factors affecting the customer loyalty within the context of MOHOREAPP in Turkey. By integrating performance expectancy, trust, social influence, satisfaction, convenience, compatibility, perceived risk and loyalty and investigating the effect of performance expectancy, trust, satisfaction, convenience, compatibility, perceived risk on loyalty in the study, research intends to fill the gap in the literature of mobile

tourism. The purpose of the study answers the following research questions: 1) How performance expectancy, trust and social influence affect satisfaction in MOHOREAPP? 2) How performance expectancy, trust, satisfaction, convenience, compatibility, perceived risk influence customer loyalty intentions within the context of MOHOREAPP?

## Literature Review

### Mobile Hotel Reservation Applications (MOHOREAPP)

MOHOREAPP is defined as online service systems that can be integrated with location-based information, where users can make hotel reservations anytime and anyplace for holiday plans using mobile applications (Wang and Wang, 2011). MOHOREAPP are downloaded on the mobile devices from platforms such as Google Play, App Store or Huawei AppGallery for free. With the global positioning systems used in these applications that identify the user's location, travelers looking for hotels can access the hotels closest to their location with a one simple button click, thus saving time.

MOHOREAPP fall into two main categories. In the first category, hotels design mobile applications that include their own brands for their customers. Many hotels such as Marriott Bonvoy, Radisson Hotels, Wyndham Hotels, Hyatt Hotels provide their customers with hotel reservation opportunities, information about their hotels and special offers with their own branded mobile applications. The second category is mobile applications such as Hotels.com, Etstur, Jolly Tour, which are the most used in Turkey, which collect information and reservation processes of many different hotels in their own application and offered by the third party institutions.

### Loyalty (LOYA)

LOYA has been defined as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future" (Oliver, 1999, p.34). LOYA consists of two dimensions, behavioral and attitudinal. While the behavioral

dimension includes the consumer's repeated purchases of the brand to which they are affiliated, attitudinal loyalty includes commitment and positive emotional ties to the relevant brand (Chaudhuri and Holbrook, 2001). While consumers with long-term loyalty do not easily change their brand preference, consumers with short-term loyalty may switch to another brand under the influence of external factors or marketing efforts of other brands (Jones and Sasser, 1995).

Earlier studies focused on the determinants of customer LOYA within the context of mobile commerce in Taiwan (Lin and Wang, 2006), in Canada (Cyr et al., 2006) and in Croatia (Delić et al., 2017). Constructs of perceived value, trust, customer satisfaction, habit (Lin and Wang, 2006), factors of usefulness and enjoyment (Cyr et al., 2006) determinants of reliability and satisfaction, convenience, price, innovativeness have positive effect on LOYA.

Lee and Lee (2019) investigated the factors that impact the brand LOYA in branded hotel mobile applications and found that customer engagement and brand trust had a direct and positive effect on brand LOYA. Ozturk et al. (2016b) examined the determinants of consumer LOYA in the mobile hotel booking systems and showed that perceived simplicity of usage, compatibility and realized convenience had a significant association with LOYA. Ozturk (2017) developed a framework for customer LOYA in mobile hotel booking systems and declared that trust had a positive influence and realized risk had a negative influence on LOYA.

### Performance Expectancy (PEEX)

PEEX refers to "the degree to which using a technology will provide benefits to consumers in performing certain activities" (Venkatesh et al. 2012, p.159). MOHOREAPP provides benefits in suggesting nearby hotels by using the GPS system while travelers are searching for hotels and presenting information about hotels more conveniently (Wang and Wang, 2010). Zhou et al. (2010) declared that PEEX is close to perceived usefulness in technology acceptance model in the meaning and the functions. Earlier studies have



found that perceived usefulness (Shang and Wu, 2017) and PEEEX (Marinković et al., 2020) has a positive impact on satisfaction within the context of mobile commerce. In the research of Tao et al. (2018) on mobile hotel booking, they have justified that PEEEX significantly affect customer loyalty. Thus, the following hypotheses which are related with PEEEX are proposed based on the previous literature.

H1a: PEEEX significantly influences customer satisfaction in MOHOREAPP.

H1b: PEEEX significantly influences customer LOYA in MOHOREAPP.

### **Trust (TRST)**

TRST has been referred as one party's belief that the other individual will meet his/her demands. TRST is defined as person's confidence in the honesty and trustworthiness of the party with whom he is in contact (Anderson and Weitz, 1989). In mobile commerce, which is a virtual world where there is no face-to-face communication, TRST emerges as an even more significant and complicated issue (Chong et al., 2010). Within the context of mobile reservation systems it reflects the positive expectations of individuals to MOHOREAPP and its providers such as hotels or third party institutions. Previous studies on mobile commerce posits a positive and significant relationship between TRST and customer satisfaction (Lin and Wang, 2006; Chong, 2013; Marinkovic and Kalinic, 2017). Besides, TRST positively affects LOYA within the context of MOHOREAPP and their systems (Ozturk et al., 2017), mobile commerce (Jimenez et al., 2016) and mobile banking (Barraies et al., 2017). Therefore, study proposes the following hypotheses:

H2a: TRST significantly influences customer satisfaction in MOHOREAPP.

H2b: TRST significantly influences customer LOYA in MOHOREAPP.

### **Social Influence (SOIN)**

SOIN is defined as "the extent to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003, p.453). If the MOHOREAPP that the

traveler uses when booking the hotel is placed in an important place by relevant consumer's family, friends, relatives, SOIN will occur. Hsiao et al. (2016) has investigated the continuance usage of mobile applications by collecting 378 questionnaires, they found that SOIN and ties have an effect on customer satisfaction. Marinković et al. (2020) has declared the significant impact of SOIN on shopper satisfaction within the context of mobile commerce. Thus, the following hypothesis about SOIN is suggested:

H3: SOIN significantly influences customer satisfaction in MOHOREAPP.

### **Customer Satisfaction (CUSA)**

CUSA establishes due to the positive experience of the consumer after the product usage and the fact that the relevant product meets the expectations of the consumer (Bogicevic et al., 2017). Moreover, CUSA occurs as a result of the positive perceived value in the consumer (Hallowell, 1996). Within the scope of hotel reservation systems, CUSA arises when the performance provided by the MOHOREAPP to the customer exceeds the customer's expectations about the mobile applications (Oliver, 1980). Based on the Kim et al. (2020) mobile hotel reservations systems study, they stated that CUSA has significant and positive impact on reuse intention. Lee and Wong (2016) examined the factors that influence LOYA in mobile commerce and demonstrated a significant relationship between CUSA and LOYA. Besides, in prior research of mobile commerce, CUSA was found to give rise to LOYA among Taiwan mobile users (Lin and Wang, 2006). Based on the empirical evidence about CUSA in MOHOREAPP and other mobile applications from the past studies, following hypothesis is proposed:

H4: CUSA significantly influences customer LOYA in MOHOREAPP.

### **Convenience (CONV)**

The CONV of a service or good depends on the attempt that the product triggers on the consumer and the time spent by the consumer (Berry et al., 2002). The product is believed to be a CONV when the consumer spends little time and effort on the

product. CONV is represented by five factors: time, location, gain, use and execution (Brown, 1990). The MOHOREAPP provides convenience in terms of time and place while providing hotel reservations to consumers, as consumers can use the application whenever and wherever they want. Besides, hotels and third-party organizations provide convenience to consumers by executing these mobile services. Delić et al. (2017) has found that CONV affects LOYA in the mobile commerce. Earlier mobile hotel booking research also presents what constructs drive to LOYA and CONV has been indicated to significantly impacts the LOYA (Ozturk et al., 2016a; Tao et al., 2018). Thus, Hypothesis 5 is established in the present study.

H5: CONV significantly influences customer LOYA in MOHOREAPP.

### Compatibility (COMP)

COMP is the degree to which innovations experienced by the user are consistent with people's beliefs, experiences, and demands. COMP at study is the degree to which the MOHOREAPP is compatible with the lifestyles and past experiences of travelers planning to book hotels. If shoppers feel that mobile commerce is compatible with their way of life and experiences, they will adapt to mobile shopping more certainly (Liébana-Cabanillas et al., 2015). Study of Wang et al. (2016) with 140 hotels in Taiwan has revealed that COMP has a positive impact on hotels' adoption on mobile hotel reservation systems. The studies about mobile hotel reservation systems have shown that LOYA is affected by the COMP (Ozturk et al., 2016a; Tao et al., 2018). Hence, the following hypothesis about COMP is proposed:

H6: COMP significantly influences customer LOYA in MOHOREAPP.

### Perceived Risk (PERI)

Kim et al. (2008) defined PERI as users' belief in the negative results in online transactions due to the ambiguity of these systems. More than 80 percent of individuals who are using internet are concerned about their personal information being found on the online systems (Rana et al., 2015). Because mobile devices have smaller screens and

keyboards, and limited functionality compared to personal computers, users are exposed to more risks on mobile devices when using the MOHOREAPP they use to book hotels. Regarding mobile commerce adoption, Zhang et al. (2012) has concluded that PERI negatively affects behavioral intention. PERI directly and negatively has influenced mobile hotel reservation system's LOYA through attitudes toward use of MOHOREAPP (Ozturk et al., 2017). Thus:

H7: PERI significantly and negatively influences customer LOYA in MOHOREAPP.

The proposed model which has integrated a set of variables, PEEEX, TRST, CUSA, CONV, COMP, PERI and LOYA, is shown in Figure 1.

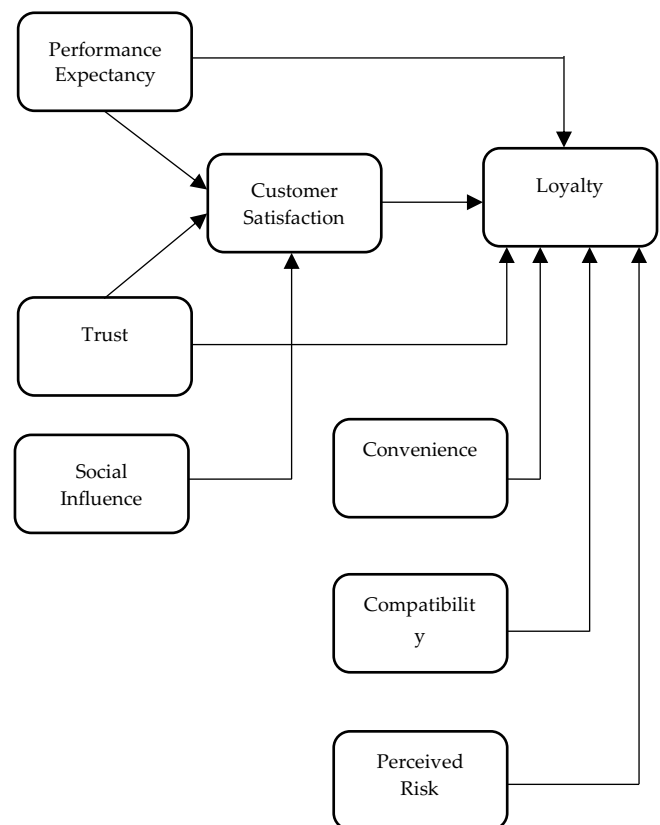


Figure 1. Research Model

## Methodology

### Instrument Development

The scales for PEEEX are adapted from Venkatesh et al. (2003), the scales for TRST are taken from Hsieh and Hiang (2004), and the scales for SOIN are adapted from Marinkovic and Kalinic (2017). CUSA consisting of three variables are adapted

from San-Martin and López-Catalán (2013) and CONV consisting of three variables are adapted from Yoon and Kim (2007). COMP is captured from the study of Wang et al. (2016) and PERI is captured from the study of Im et al. (2008). Finally, the three items of LOYA are based upon the study of Lin and Wang (2006). The items of the constructs of the study, which are PEEEX, TRST, SOIN, CUSA, CONV, COMP, PERI, and LOYA, are evaluated on a seven-point Likert-type scale.

### Data Collection and Sample

People living in Turkey and using the MOHOREAPP on their mobile devices constitute the population of this study. A screening question is employed to confirm that only respondents who are over the age of 18 and have prior knowledge using MOHOREAPP has participated in the survey. The survey with a convenience sampling design is carried out in provinces of Turkey. Based on the 1:5 measurement-observation recommendation by Hair et al. (2010), since there are 25 items, the minimum sample size to be valid for the study was calculated as 125. Based on this recommendation, a questionnaire was distributed to 550 people who are over the age of 18 and used the MOHOREAPP in the past. After eliminating 39 respondents due to the high missing value, A total of 511 valid questionnaires was retained for data analysis. Table 1 shows the demographics of the 511 respondents.

*Table 1. Demographics of Respondents*

Variables	Category	n	%
Gender	Male	362	70.84%
	Female	149	29.16%
Age	18-29	121	23.68%
	30-41	156	30.53%
	42-53	132	25.83%
	54 +	102	19.96%
Income	Less than 10000 TL	82	16.05%
	10000 - 14499 TL	111	21.72%
	15000 - 19999 TL	182	35.62%
	20000 TL +	136	26.61%
Education	Below high school	82	16.05%
	High school	141	27.59%
	Bachelor's degree	193	37.77%
	Master's or PhD degree	95	18.59%

### Results

Following the Anderson and Gerbing (1988), the first step is the measurement model which assess the validity and reliability of the scales by using AMOS 24 and SPSS 26 and the second movement is structural model estimation to test the hypothesis using structural equation modelling with AMOS 24.

### Measurement Model

Confirmatory factor analysis is carried out on measurement model to evaluate the validity and reliability of instruments. The measurement model had CMIN=310.473 (DF=247;  $p < 0.01$ ) and CMIN/DF=1.257. NFI was equal to 0.968, TLI was equal to 0.991, CFI was equal to 0.993, and RMSEA was equal to 0.022. As the goodness of the fit indices of the model consisting of PEEEX, TRST, SOIN, CUSA, LOYA, PERI, CONV, COMP constructs were in the recommended value (Bagozzi and Yi, 1988; Hair et al., 2010), it was inferred that the measurement model of MOHOREAPP fit well with the data.

Cronbach's alpha values of the measures ranged between 0.782 and 0.951 exceeding the recommended level of 0.7 (Nunnally, 1987) and composite reliability (CR) of latent constructs surpassed the recommended threshold of 0.6 (Bagozzi and Yi, 1988). Based upon the suggestion of Hair et al. (2010) factor loadings of the study were greater than 0.5 and items were significant ( $p=0.000$ ).

Average variance extracted (AVE) values of the constructs ranged from 0.539 to 0.859, exceeding the accepted threshold of 0.5 (Fornell and Larcker, 1981). Table 2 represents the validity and reliability of the MOHOREAPP's measurement model indicating that convergent validity and reliability were supported.

Discriminant validity is tested by the criteria of Fornell and Larcker (1981) which compares the square root value of AVE with the correlations between PEEEX, TRST, SOIN, CUSA, LOYA, PERI, CONV, COMP constructs. As it can be seen from Table 3, the square root of AVE values written in bold are higher than the correlation between the PEEEX, TRST, SOIN, CUSA, LOYA, PERI, CONV, COMP variables, so the discriminant validity was ensured.

Table 2. Results of Measurement Model

Constructs	Standardized Loadings	AVE	Composite Reliability	Cronbach's Alpha
PEEX		0.838	0.953	0.951
PEEX1	0.793			
PEEX2	0.972			
PEEX3	0.968			
PEEX4	0.918			
TRST		0.660	0.852	0.846
TRST1	0.694			
TRST2	0.877			
TRST3	0.855			
SOIN		0.547	0.784	0.782
SOIN1	0.765			
SOIN2	0.701			
SOIN3	0.753			
CUSA		0.828	0.935	0.933
CUSA3	0.898			
CUSA2	0.970			
CUSA1	0.860			
LOYA		0.859	0.948	0.946
LOYA1	0.879			
LOYA2	0.964			
LOYA3	0.936			
PERI		0.810	0.927	0.924
PERI3	0.859			
PERI2	0.968			
PERI1	0.869			
CONV		0.539	0.777	0.772
CONV3	0.807			
CONV2	0.719			
CONV1	0.672			
COMP		0.711	0.880	0.879
COMP3	0.803			
COMP2	0.902			
COMP1	0.822			

Table 3. Discriminant Validity Matrix

	PEEX	TRST	SOIN	CUSA	LOYA	PERI	CONV	COMP
PEEX	<b>0.915</b>							
TRST	0.177	<b>0.812</b>						
SOIN	0.252	0.188	<b>0.739</b>					
CUSA	0.181	0.258	0.131	<b>0.909</b>				
LOYA	0.365	0.253	0.350	0.302	<b>0.926</b>			
PERI	-	-	-	-	-	<b>0.900</b>		
CONV	0.051	0.069	0.167	0.078	0.365	-	<b>0.734</b>	
COMP	0.167	0.128	0.170	0.155	0.361	-	0.142	<b>0.843</b>
								0.217

Structural Equational Model

After completing the first step, the second step approach of Anderson and Gerbing (1988) is to test the hypotheses. The goodness of fit statistics revealed that all the model fit indices surpassed their tolerance levels indicated by Bagozzi and Yi (1988), Hair et al. (2010) (CMIN=330.103, DF=251, p<0.01; CMIN/DF=1.315; NFI=0.966; TLI=0.989; CFI=0.992; RMSEA=0.025).

Table 4. Results of Structural Modeling Analysis

Structural Paths	Std. Path Coefficients	t-value	p	Results
H1a: PEEEX -> (+) CUSA	0,126	2,706	0,007	Supported
H1b: PEEEX -> (+) LOYA	0,238	5,971	0,000	Supported
H2a: TRST -> (+) CUSA	0,225	4,551	0,000	Supported
H2b: TRST -> (+) LOYA	0,114	2,727	0,006	Supported
H3: SOIN -> (+)CUSA	0,063	1,213	0,225	Not Supported
H4: CUSA -> (+) LOYA	0,161	4,091	0,000	Supported
H5: CONV -> (+) LOYA	0,224	5,072	0,000	Supported
H6: COMP -> (+) LOYA	0,186	4,536	0,000	Supported
H7: PERI -> (-) LOYA	-0,264	-	0,000	Supported
		6,646		

Figure 2 and Table 4 represents the structural relationship among the PEEEX, TRST, SOIN, CUSA, LOYA, PERI, CONV, COMP constructs and the standardized path coefficients. PEEEX ( $\beta_{PEEEX-CUSA}=0.126, p < 0.01$ ) and TRST ( $\beta_{TRST-CUSA}=0.225, p < 0.001$ ) had positive effects on CUSA, supporting H1a and H2a. PEEEX ( $\beta_{PEEEX-LOYA}=0.238, p < 0.001$ ), TRST ( $\beta_{TRST-LOYA}=0.126, p < 0.01$ ), CUSA ( $\beta_{CUSA-LOYA}=0.161, p < 0.001$ ), CONV ( $\beta_{CONV-LOYA}=0.224, p < 0.001$ ), COMP ( $\beta_{COMP-LOYA}=0.186, p < 0.001$ ) were found to positively influence LOYA to use MOHOREAPP. Results supported H7 indicating a negative relationship between PERI and LOYA ( $\beta_{PERI-LOYA}=-0.264, p < 0.001$ ). Finally, SOIN didn't

exhibit a significant relationship with CUSA, therefore hypothesis 3 is not supported.

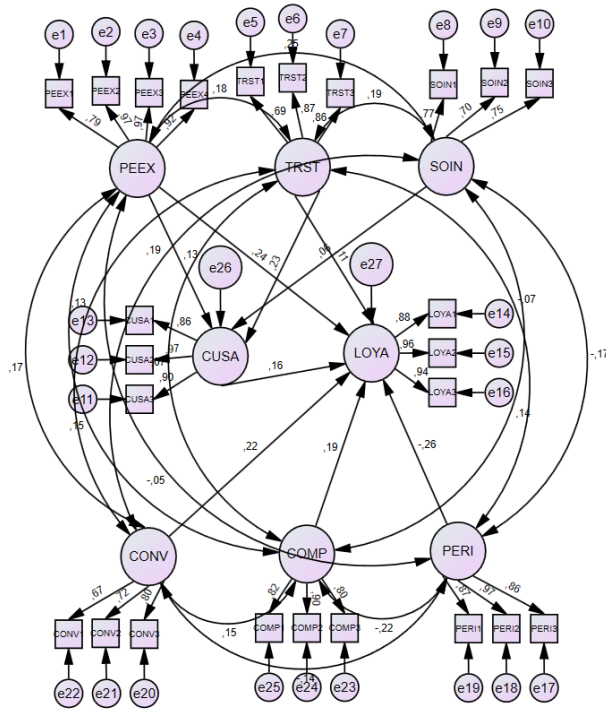


Figure 2. Analysis of Structural Model

**Discussion**

The study investigated the factors affecting the LOYA within the context of MOHOREAPP. Research integrated the PEEX, TRST, SOIN, CUSA, CONV, COMP, PERI into the proposed model and examined the impact of PEEX, TRST, SOIN on CUSA and PEEX, TRST, CUSA, CONV, COMP, PERI on LOYA. All the hypotheses except H3 were accepted in the study.

Study showed that PEEX positively impacts CUSA in MOHOREAPP and the result about PEEX-CUSA link is consistent with the prior study (Marinković et al., 2020). The perception of users that the MOHOREAPP will make hotel reservations faster and the idea of improving hotel reservation performance will increase CUSA. Besides, study found that PEEX influences LOYA like other study's findings (Tao et al., 2018). Travelers who think that they benefit from MOHOREAPP while using this application will go on to use the MOHOREAPP in the future.

Study results reveals a positive relationship between TRST and CUSA and this result is consistent with the studies of Chong (2013),

Marinkovic and Kalinic (2017). If the traveler perceives the transactions made in the MOHOREAPP as safe and the consumer's privacy is well protected, the mobile application will meet the expectations of the consumer. Moreover, the finding of the Hypothesis 2b indicates that TRST is positively related to LOYA, and this result is in line with the studies of Ozturk et al. (2017), Jimenez et al. (2016). When the transactions of MOHOREAPP are trustworthy and security measures in this application are passable, the LOYA level of the individual will improve.

The study's finding for hypothesis 3 stating that SOIN is positively related to LOYA is not significant and this finding supports research by Marinkovic and Kalinic (2017). The use of the MOHOREAPP by the person's social circle such as family and relatives will not increase the level of satisfaction of the person with the application. Travelers who start using the MOHOREAPP under the influence of media elements such as TV and radio will not be satisfied with the application.

The hypothesis 4 result of this study indicates that CUSA influences LOYA significantly in MOHOREAPP and this result confirms findings from prior research (Lin and Wang, 2006; Lee and Wong, 2016). When MOHOREAPP services meet travelers' expectations and customers' experience with using this mobile application is positive, level of the LOYA will rise and travelers will recommend other people to use this service.

Hypothesis 5 result of this study also confirms that the CONV has a significant influence on LOYA, similar to findings by Ozturk et al. (2016a), Tao et al. (2018). Making hotel reservations with MOHOREAPP at the desired place and time will lead to increase the loyalty level of the traveler. Other result of the study reveals that the changes brought by the MOHOREAPP are consistent with the current beliefs and values of the traveler causes him to continue using the mobile application and this is similar to the result found in studies of Ozturk et al. (2016a), Tao et al. (2018). Finally, the fact that the MOHOREAPP contains uncertainties and makes the traveler outraged because of the poor performance of the mobile application causes the individual not to use the application in the future. This finding supports research by Zhang et al. (2012), Ozturk et al. (2017).

### Implications, Limitations and Future Research

From a theoretical perspective, study empirically validated the proposed model consisting of PEEEX, TRST, SOIN, CUSA, CONV, COMP, PERI, LOYA in the MOHOREAPP, examining the direct and indirect impacts of PEEEX, TRST, SOIN on CUSA and PEEEX, TRST, CUSA, CONV, COMP, PERI on LOYA. According to the path coefficients TRST showed the strongest effect on CUSO and PERI exhibited the strongest negative impact on LOYA. Outcomes of study contributed to the present MOHOREAPP systems' literature by exploring antecedents of CUSA and antecedents of LOYA in MOHOREAPP within the hotel industry. Even though many existing literatures in mobile hotel reservations system concentrates on the adoption and behavioral intention of the travelers, research delivers insight into the customer LOYA and consumer's continued use of the MOHOREAPP. With very little research focusing on how mobile hotel reservation users keep loyal in the MOHOREAPP, research serves up as a valuable underpinning by offering an intuitive insight of MOHOREAPP for researchers.

From a managerial perspective, study reveals the significance of user LOYA of MOHOREAPP within the hospitality and tourism industry. When service providers of mobile application design and develops MOHOREAPP, they should focus on PEEEX, TRST, CUSA, CONV, COMP, PERI to rise travelers LOYA. Hotels and third-party organizations should design the MOHOREAPP to quickly complete the customer's hotel reservations in order to enhance the LOYA and CUSA level of their customers. Hotels should provide the necessary infrastructure in the MOHOREAPP so that transactions are secure, confidentiality of the travelers is well protected and adequate security measures are taken. Hospitality managers and MOHOREAPP designers should design surveys in the mobile applications that measure satisfaction level, and fix problems caused by customer dissatisfaction to keep customers engaged. While designing and implementing the MOHOREAPP, mobile application service providers should focus on features where their customers can make check-in, manage the room key, use room service in the

application to raise the convenience of the individual. MOHOREAPP that provide convenience to customers will increase customer loyalty (Tao et al., 2018). Hotels, third-party institutions, and mobile app developers should ensure that new changes and modifications introduced in the MOHOREAPP are consistent with the mobile existing application. Hotels have to reduce the user's perception of risk by providing up-to-date information to eliminate uncertainties in the MOHOREAPP and by establishing a system that will prevent unexpected problems while the user is making a hotel reservation.

This study has some limitations. First, the survey applied to analyze the data was conducted in Turkey and the results cannot be generalized to other countries. Future studies can examine the loyalty of consumers in different cultural backgrounds in MOHOREAPP. Second, since the survey was carried out in a single period, future research is recommended to be conducted to observe dynamic changes in the behavior of travelers. Third, proposed models of the future researches is suggested to include additional constructs such as privacy concern, innovativeness to examine the LOYA in the MOHOREAPP.

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## RESEARCH ARTICLE

# A Qualitative Research on the Process of Drug Addict Individuals Accessing Substances

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## Abstract

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*This study aims to thoroughly examine the processes through which individuals who use substances access these substances. The main focuses of the study are the channels and locations of substance access, the process leading from substance use to procurement, communication with sellers, and applied privacy strategies. This research is designed according to qualitative research methods. During data collection, a semi-structured interview form was preferred, and interviews were conducted with 10 substance users. The collected data were analyzed using descriptive analysis methods, and the results were interpreted. The findings are presented under four themes: "Initiation of Substance Use, Methods of Accessing Substances and Privacy Strategies, Language and Trust Relationships in the Substance Acquisition Process, Locations for Substance Procurement, Risky Situations, and Social Consequences." According to the results of the study, it is highlighted that the process of starting substance use due to curiosity and experimentation, often influenced by social environment and friendships, turns into addiction, and individuals usually begin using substances between the ages of 14 and 18. The study finds that while experienced users resort to traditional neighborhood channels like street dealers, the new generation prefers social media platforms (such as Telegram, Instagram, WhatsApp, Facebook) and certain games (like PUBG mobile, Minecraft) as covert channels. It has also been determined that the language and communication methods used in the process of procuring substances are developed using various names and jargons specific to different substances. On the other hand, the need to secure financial resources for continuous consumption and procurement during the transition from substance use to procurement often leads individuals to illegal actions such as theft, robbery, and violence, as well as to dangerous and risky behaviors.*

**Keywords:** Substance Use, Substance Supply Routes, Addiction, Substance Shopping Language

## Öz

*Bu çalışma, madde kullanıcısı bireylerin maddeye erişim süreçlerini derinlemesine incelemeyi amaçlamaktadır. Çalışmanın odaklandığı başlıca konular; maddeye erişim kanalları ve mekanları, madde kullanımından temin etmeye götüren süreç, satıcılarla kurulan iletişim ve uygulanan gizlilik stratejileridir. Bu araştırma, nitel araştırma yöntemine uygun olarak tasarlanmıştır. Veri toplama sürecinde yarı yapılandırılmış bir mülakat formu tercih edilmiş ve 10 madde kullanıcısı ile görüşmeler yapılmıştır. Toplanan veriler, betimsel analiz yöntemi kullanılarak analiz edilmiş ve sonuçlar yorumlanmıştır. Bulgular ise "Madde Kullanımına Başlangıç, Maddeye Erişim Yolları ve Gizlilik Stratejileri, Madde Edinim Sürecinde Kullanılan Dil ve Güven İlişkisi, Madde Temin Yerleri, Riskli Durumlar ve Sosyal Sonuçlar olmak üzere 4 tema ile adlandırılarak verilmiştir. Araştırmanın sonuçlarına göre; sosyal çevre ve arkadaşlık ilişkileri, merak ve denemeyle madde kullanımına başlanan sürecin, bağımlılığa dönüştüğü, kişinin madde kullanımına 14-18 yaş aralığında başladığı öne çıkmaktadır. Araştırmada, madde teminindeki yöntemlere bakıldığında; deneyimli kullanıcılar, sokak satıcıları gibi geleneksel mahalle kanallarına başvururken, yeni nesil kullanıcılar ise sosyal medya platformları (Telegram, Instagram, Whatsapp ve Facebook) ve bazı oyunları (PUBG mobile, Minecraft gibi) gizli kanal olarak kullanmayı tercih etmektedirler. Ayrıca bağımlı bireylerin madde temin etme sürecindeki dil ve iletişim yöntemleri, çeşitli maddelere özgü farklı isimler ve jargonlar kullanılarak oluşturulduğu saptanmıştır. Öte yandan madde kullanımından temine geçiş aşamasında, sürekli tüketim ve temin için gerekli maddi kaynakların sağlanması zorunluluğu, bireyleri hırsızlık, gasp ve şiddet gibi yasa dışı eylemlere, aynı zamanda tehlikeli ve riskli davranışlara ittiği görülmektedir.*

**Anahtar Kelimeler:** Madde Kullanımı, Madde Temin Yolları, Bağımlılık, Madde Alışverişi Dili

## Introduction

Substance use has become a progressively prevalent and multifaceted issue in society in recent years, capable of causing harm to the social environment. Numerous factors influence an individual's engagement in substance use. These are typically individual or societal factors such as stress, trauma, social pressure, genetic predisposition, and curiosity (Briand & Blendy, 2010; Rhee et al., 2003, p.1262). The initiation process of substance use can vary depending on an individual's life circumstances and can lead to the development of addiction following the individual's introduction to the substance. Initially perceived by individuals merely as a means of relaxation and escape, substance use over time becomes a part of daily routines, characterized by a behavior-stimulus relationship, and evolves into a habit with repeated use (Titus, 2008, p.39). It is indicated that individuals who use substances often start this habit during adolescence (Sheehan et al., 1998, p.314). On the other hand, it is observed that substance use often begins due to reasons like the need for acceptance by peers and the environment at an early age, the desire to gain prestige, and conforming or imitating others (Cousijn et al., 2018, p. 2; Kramer et al., 2009, p.56). In a study conducted by Titus et al. (2008) on 85 cases, it was found that 75% of adolescents' reasons for starting substance use could be explained by just two factors: peer influence and experimentation.

For individuals who start using substances for various reasons, over time, the most crucial issue becomes the procurement and supply of the substance. Substance use can be accelerated with easy access to the substance. People often begin using substances without considering the risk of addiction and believing that they can control themselves. However, this situation often leads to addiction, facilitated by the ease of access (Bahar, 2018, p.8). Although the methods of accessing substances vary from individual to individual, this situation often involves collaboration with other substance users, dealers, or intermediaries (Baggio et al., 2016). Furthermore, diversifying methods to access substances brings a variety of effects and

allows for the selection of specific locations and the development of a unique communication language among users (Spohr et al., 2019, pp.143-150). In this context, one of the common methods of procuring substances is through street dealers, and particularly in today's era of technology, social media platforms and various applications can be used as covert channels for substance procurement. Additionally, another increasingly common method of substance procurement worldwide is through crypto markets. Crypto markets are online venues where drugs are purchased, protected by technology that allows for anonymous communication and uses currencies (e.g., Bitcoin) designed to be difficult to trace (Bachhuber & Merchant, 2017). In Aldridge et al.'s (2018) study on online purchasing, it is emphasized that considering people will continue to buy drugs, crypto markets may offer several advantages over offline purchases in terms of personal and public health. The use of information systems for this purpose is leading to the emergence of new types of crimes in the virtual environment (Bahar, 2018, p.13). This situation makes monitoring substance procurement in various dimensions and environments even more challenging.

Individuals seeking substances may seek help from their friends and family to access them. With the diversification of these access channels, communication between substance dealers and users is becoming more concealed. The social structure and culture in which substance users are embedded can influence their substance-seeking processes and subsequently shape the pathways they choose for procurement, as suggested by Bourdieu (1977). Furthermore, Sandberg's (2008) study demonstrates that individuals involved in substance dealing often represent a situation that emerges as a result of the interaction between a marginalized environment and a specific social context. The existence of a marginalized environment can lead individuals towards different illegal behaviors as part of a crime-prone demeanor. Thus, an individual who starts using substances due to mere curiosity, peer influence, or economic conditions may diversify their means of accessing substances within this different habitus.

In this context, individuals who interact with drug dealers can encounter three distinct groups (Hunt, 1990, p. 190; Ünlü & Demir, 2012, p.163). The first group consists of individuals who are both users and dealers. These individuals often transition into dealers after beginning as substance users, engaging in this role to secure substances at a lower cost, ensure access to higher-quality products (Fairlie, 2002, p.551), and provide for their friends (Atkyns & Hanneman, 1974, p.37). Preble & Casey (1969) have noted that this can be a means to sustain their addictions. On the other hand, this procurement process makes dealers feel like the protagonists of their lives (Sandberg, 2008). The second group comprises individuals from another profession (Ünlü & Demir, 2012, p.163). These individuals, who make up the majority of the market and are forced to leave their initial professions due to economic reasons (Macit, 2018, p.6; Guy & Chomczyński, 2023), see substance dealing as a temporary means of livelihood. In Fairlie's (2002) study, it was noted that 47% of substance dealers were employed, 44% were unemployed, 7% were government employees, and 1% were self-employed individuals. The third group consists of those who deal substances more professionally. This group includes individuals who are part of specific communities or deliver substances to individuals through intergenerational transmission among family members (Macit, 2018, p. 7). According to Ömer and Demir's (2012) research, dealers who are not addicted themselves often view drug dealing as more of a professional occupation.

Overall, the primary aim of this study is to understand how individuals who seek substances on the street reach dealers, what kinds of places they use in the process, their methods of communication, and how they establish conditions of secrecy. There is a notable lack of studies focused specifically on finding and buying substances on the street, with a direct emphasis on the street environment itself. The absence of comprehensive research on individuals engaged in substance-seeking highlights a gap, particularly as existing studies often discuss the role of substance dealers within the process, leading to an incomplete understanding of the entire scenario. Therefore, the research concentrates on how

individuals access substances following their initial use, the various environments where substances are obtained, the nature of communication established in the acquisition process, and identifying the social risks associated with this access process. The understanding of the initiation process of substance use and the factors leading individuals to procure substances offers an opportunity for a holistic view of the issue.

## Method

This research employs a qualitative research design to explore the methods used by substance users to procure substances, their strategies for maintaining secrecy, the language utilized in accessing substances, and the potential risks involved in this process. While structuring the research, the phenomenology technique from qualitative research methods was utilized. Phenomenology aims to derive meaning from individuals' own experiences and to conduct in-depth examinations of topics that are recognized but little known in detail (Yıldırım & Şimşek, 2006, p.224). The phenomenological research design was chosen to help explore the process of users' relationships with dealers and understand the dynamics behind this process.

## Sample

In the study, interviews were conducted with ten substance users residing in Istanbul. The snowball sampling method was used to reach the participants. Accordingly, the research team's initial contact was made through the guidance of experts actively working with substance users in the field. In the subsequent stages, additional participants were recruited for the study based on direct referrals from both the experts and the initial participants. The criteria for inclusion in the sample were that the individuals should have been actively using substances for at least two years and have played an active role in the substance procurement process. On the other hand, limiting the number of participants to 10 in this study is related to data saturation in qualitative research, where the research is concluded once no new information or themes are observed in the data

(Baltacı, 2018). In qualitative studies, the fundamental point regarding how many people to interview is centered around reaching data saturation, with the recommendation to conclude the research when no new insights or aspects emerge (Creswell, 2016, p.189). All the study participants are male, aged 18-50. Detailed socio-demographic data of the participants are shown in Table 1.

**Table 1. Socio-Demographic Data of the Participants**

Participant	Age	Marital Status	Education Level	Occupation	Substance Used	Duration of Use
P1	27	Single	Middle School	Signboard Maker	Bonzai, Weed, Meth	11 years
P2	43	Married	Middle School	Farmer	Bonzai, Ecstasy, Weed, Meth	2 years
P3	32	Divorced	High School	Grilled Sheep Intestine Chef	Glue (Toulene), Weed, Cocaine	4 years
P4	40	Married	Elementary School	Freelance	Weed, Cocaine, Crack	30 years
P5	27	Single	Middle School	Pita Chef	Ecstasy, Weed, Meth	15 years
P6	28	Single	Elementary School	Plasterer, Painter	Heroin, Meth	14 years
P7	33	Married	College	Engineer	Heroin, Cocaine, Crack	18 years
P8	22	Single	High School	Tattoo Artist	Meth	7 years
P9	23	Single	Middle School	Textile Worker	Bonzai	5 years
P10	28	Married	High School	Baker	Lyrica, Crack	7 years

## Data Collection Tools

In this research, in-depth interviews were employed as a data collection method. In-depth interviews are an integral part of qualitative research and enable a more detailed and holistic understanding of the foundations of social problems. This method allows researchers to delve into the depths of observed social issues and to grasp these problems comprehensively (Kümbetoğlu, 2015, p. 72). Within the scope of the study, data were collected using a semi-structured interview form containing 15 questions developed by the researcher. The questions in this research cover the reasons for individuals' initiation into substance use, the effects of this habit on their

social environments, and the methods of procurement. Additionally, they address the users' communication with dealers, privacy strategies, perceptions of trustworthiness, and the challenges and risks encountered in the procurement process. The questions also encompass substance users' involvement in illegal activities, use of coded language and jargon, and significant experiences during this process. In the process of developing the interview form, opinions were sought from experts with experience in working with substance users and academics who have conducted studies on addiction. Participation in the study was based entirely on voluntary consent. Before each interview, a consent form was presented to the participants, either verbally or in writing. Once these consents were obtained, the interviews commenced. Two participants did not consent to audio recording but allowed for written notes, while the remaining eight consented to audio recording. The interviews were conducted face-to-face at locations and venues deemed suitable by the participants.

## Analysis of Data

The data of the research were examined according to the descriptive analysis technique. The purpose of descriptive analysis is for the researcher to reinterpret the findings obtained and convey them to the readers. In this process, pre-established themes from the data collection phase can be used, as well as new themes that emerge during the research process, which can be fully or partially integrated (Yıldırım & Şimşek, 2018). In this study, a total of 296 minutes of audio recordings were transcribed for analysis. The transcription process resulted in 186 pages of raw transcript text, which was then used for coding. Approximately 323 codes were extracted from the text, and after eliminating repetitive codes, sub-themes and main themes containing the remaining codes were identified. Categories and headings were formed based on the main themes. Four themes emerged through final readings in line with the descriptive analysis technique. These are: *“Individual's Initiation into Substance Use,” “Methods of Accessing Substances and Secrecy Strategies,” “Language Used and Trust in the Substance Acquisition Process,”* and

*"Substance Procurement Locations, Risky Situations, and Social Consequences."*

## Findings

From the gathered data, four distinct themes emerged. The first theme delves into the various factors that contribute to an individual's beginning of substance use, attempting to understand the process that leads individuals to the need to procure substances. The second theme focuses on how substances are accessed, through what means and channels, and how this process is kept secret. The third theme focuses on the language used to access substances and how trust is built with the dealers. The final theme examines the types of locations/venues where substances are accessed, explores the potential risks associated with these, and identifies the possible social consequences arising from the entire substance procurement process.

## Beginning Substance Use: Where, When, and How?

In this section, the theme explored is 'the beginning and evolution of substance use.' Here, a brief overview will be given of how, when, and where an individual starts using substances to understand the process that leads to the procurement of substances.

It is observed that in the process of substance use, the influence of peer groups and a sense of curiosity are predominantly highlighted. The notion of experimenting with substances out of curiosity within one's circle of friends, accompanied by the belief that 'trying it once won't hurt,' is a common statement mentioned by most participants.

*"I was 16, with our friends in middle school, and there was this lane we called 'Lovers' Lane' where we'd hang out with girls. Someone asked if I wanted to try 'glue' (toulene). I said 'sure, I'll try it,' without knowing anything about it. It became a daily thing for a day or two. When 'glue' (toulene) seemed too mild, I moved on to marijuana. To be honest, my family had no idea. Curiosity was what got me started (P3, user for 4 years)."*

*"When I was a child, around 14-15 years old, I started [using substances] with a friend who was using at the time. I thought, 'Let's try it, it won't do any harm.' We smoked a bong and then I couldn't stop (P8, user for 7 years)."*

Substance use that begins at an early age can continue for many years. It is observed that many of the participants started using substances during their adolescence. Additionally, it has been noted that times of celebration, such as army send-off parties, weddings, and birthday celebrations, also play a significant role in starting substance use.

*"It wasn't any emotional state that got me started, but rather an army send-off party. Friends had gathered, and I joined them. Someone there had rolled a joint, you know, weed. Everyone was passing it around, taking a puff each. That's how the introduction happened, out of curiosity, really, just to see what it was like (P2, user for 2 years)."*

On the other hand, during the adolescent period, feelings such as the need for acceptance, approval, being a role model, becoming a feared individual, emulation, idolizing, and aspiration are also influential components in an individual's initiation into substance use.

*"I was under the impression it would magnify me. I thought it would exalt me. Now you're on the streets, I told myself, you need to be strong, I thought it would strengthen me. I mean, being accepted in the neighborhood and being that person who is pointed out, being different, I used to think it was something that would bring pride. I wanted to be called 'big brother', I wanted people to fear me (P6, user for 14 years)."*

Unstable, incompatible, unsupported, or conflict-ridden family environments can pose a higher risk for individuals turning to substance use. Particularly, the father-son relationship is among the most significant factors influencing the initiation of substance use.

*"When I was 13 years old, we left the mosque and a friend wanted to come to us. When we got home, my father kicked me out. Of course, I had a friend with me,*

*and I couldn't accept it. I went outside and saw an older guy with marijuana, and I got 2-3 pieces from him (P6, user for 14 years)."*

P6 has addressed temporal processes in the onset of substance use and described the evolution of the habit using terms such as 'honeymoon period' and 'return to the starting point.'

*"At first, you enter a honeymoon period. Like how people get happy when they get married, everything is good and beautiful, but gradually the body gets used to it and that level of pleasure decreases. After the honeymoon period, your addiction has already developed. Even if you want, you can't give it up. Then what do you do? Afterwards, to catch that initial high we always increase the dose. Then we become dependent on high doses. After this phase of dependency, our losses start. When the losses pile up, you completely hit rock bottom. You can never be happy again."*

### **Methods of Accessing Substances and Secrecy Strategies**

This part addresses how access to substances is obtained after the onset of substance use. In this regard, it is generally observed that when a person first starts using substances, they usually do not have direct access to a dealer. It is often revealed that the substance is obtained through the person who initially introduced them to substances.

*"It's quite simple, really. The friend who first gets you to try it already has a source since he uses it himself. He then directs you. What is it that I want to get now, for example? Ecstasy, but I can't find it. I ask Ali. Ali directs me. I don't know the dealer. We exchange numbers with the dealer. And then, as time goes by... when you need it... (P3, user for 4 years)."*

On the other hand, while the initial steps in substance use occur through acquaintances, it becomes evident that as dependency intensifies over time, substances are obtained by directly reaching out to dealers.

*"If someone close to you uses drugs, this person becomes a mediator for you; they buy from the dealer and bring it to you. You use together, and this process continues*

*in this way for a while. However, over time and perhaps depending on financial means, as your dependency intensifies, there arises a need to meet the dealer directly and purchase from them (P1, user for 11 years)."*

Furthermore, it is observed how creative and determined individuals who use substances can be in obtaining the substances they desire. Undoubtedly, P2's method of procuring substances using 'pigeons' during the COVID-19 pandemic underscores their determination.

*"At the beginning of the pandemic, during the strictest periods, I was living in a village in Bursa. There were curfews, and we couldn't access substances then. I keep pigeons, racing pigeons. They can be released from Konya, Ankara, Eskişehir and return to my cage. I would take three to five pigeons with me. Police would ask where I was going, and I'd say I was taking them to the vet. I went to my dealer and left 5-6 pigeons, then called every three to five days. I'd say, 'Send one back to me.' He would tie it to their legs. So, in this way, you can also get access. For someone who uses substances, there's no such thing as impossible. The bird would arrive at my house, my village, even before I did."*

Another method of substance procurement is through social media. While long-time users tend to prefer traditional street channels, it is observed that the new generation of substance users attempts to secure their supply via social media.

*"Someone who wants to find it uses Facebook, Telegram, Instagram, etc. But there's this thing, as we are old users, we don't really engage much in that social media network. But these new kids who are using, they operate more through social media. Those of us who have been using for over 10 years tend to find it through street channels. But look at these new ones, who have been using for only 2 or 3 years, they don't even know what weed is and try to find it directly through social media (P1, user for 11 years)."*

P6 similarly noted that social media platforms are the most common channels for procuring substances, and also mentioned that digital games like PUBG Mobile and Minecraft are actively used for this purpose.

*“But most of my friends obtain it through Telegram, previously a lot through Facebook. How do the large amounts of money circulate in this business? Let me tell you that as well. By the kilo, those who we call Barons, they choose a certain game for themselves. For example, they make deals through games like PUBG, Minecraft. This has been happening in recent years.”*

Instead of using modern methods such as motorbike couriers, dealers can also distribute substances on foot or while working in different professions. Consequently, it is observed that individuals using substances can procure them in places like barbershops, *çiğköfte* (Turkish spicy meatball) shops, cafes, and coffee houses.

*“For instance, there are itinerant sellers. And by couriers, I don’t mean those on motorbikes, not them. Like you said, they can distribute these substances on foot. Someone could be working in a restaurant. For example, there was this guy in Istanbul, he was a kebab seller, he would drop off, and then leave (P5, user for 15 years).”*

### **Language Used and Trust Relationship in the Substance Acquisition Process**

The process of obtaining substances has revealed the critical role of trust and communication strategies. With the increase in substance use, the building and maintaining of this trust from the beginning of the addict's relationship with the dealer is vital for the continuity of the bilateral relationship, as understood from the participants' statements. P5 explains this situation as follows:

*“The buyer must trust the dealer first. The dealer takes the money and then gives the stuff. He wouldn’t give it to someone he doesn’t know.”*

Dealers generally trust their buyers because they aim to make them dependent for future transactions. P4 has described this relationship as having a hundred percent trust rate:

*“No, I mean, in the end, he is selling it, and you are buying it. There is a trust between the dealer and the buyer due to necessity. You already knew this, you do the math. The dealer might be suspicious of the buyer, but the trust is always one hundred percent.”*

Initially seen only as a customer, a buyer can, over time and with their economic contribution, attain a more valued position in the eyes of the dealer, which can lead the user from the position of a buyer to having the potential to become a dealer.

*“So at first, look, initially everyone is a customer. Then, for example, you get along well with the dealer, you are loyal in paying your debts or he likes you, sees you’re a good kid, he takes you under his wing. Then he gives you the first 5 grams. You bring the money, he gives you 10 grams, then 15 grams. Sell it, make the return, settle the account. He gives you a house, a car. Opens up possibilities for you (P8, user for 7 years).”*

The economic power of the buyer influences how much 'credit' the dealer will extend to them. Moreover, most participants have stated that these mutual relationships are entirely based on self-interest.

*“It’s not really much about trust. If he knows you, knows you’re from his neighborhood, if there’s money involved. There’s nothing beyond self-interest. So, when he gives you an extra 2-3 grams, he is actually using you. He thinks you will make a profit for him (P9, user for 5 years).”*

In the context of a substance-dependent individual's process of obtaining substances, the language and communication methods used have also been considered. Different names and jargons are used for various substances. For example; 'meal' for marijuana, 'wheel' or 'tire' for ecstasy, 'white' or 'cheese' for cocaine, 'stone' or 'beşiktaş'<sup>1</sup> for crack, 'Metin amca' or 'ice' for methamphetamine, 'sister' for bonzai, 'Mother Mary' for marihuana, and so on.

<sup>1</sup> It is the name of a football team in Türkiye and is used as the street language of the users of the article.



*“What I mean by coded language is, how much for a meal? What’s meant by meal? Marijuana. For pills (ecstasy), they say ‘wheel’ or ‘tire’. Because it’s round. They call cocaine ‘white’. They say ‘cheese’. They say ‘powder’. For ‘stone’, that’s crack (P3, user for 3 years).”*

*“For instance, ‘Is there any cold?’ Another name for methamphetamine is ‘ice’. Because it’s ice, they ask, ‘Is there any cold?’ (P6, user 14 years).”*

*“For instance, some say ‘Beşiktaş’ when they want to buy crack. There are examples like ‘uncle’. Back then, we used to call Bonzai ‘foreign’ or ‘sister’. Sister for Bonzai, brother for Meth, or Uncle Metin<sup>2</sup>, because it has started to become a label (P8, user for 7 years).”*

On the other hand, terms used for substances can often be matched with amounts of money. For example, the term ‘500 lira’ can be used to purchase a substance.

*“For instance, I say, I’m bringing you the 500 lira I owe you. Where are you? What does that 500 lira correspond to? It means I want 500 lira worth of stuff (marijuana, heroin etc.) (P1, user for 11 years).”*

The world of substance use is a complex and dangerous labyrinth. It has been observed that this labyrinth is usually navigated through coded language. Phrases like ‘store is open’ or ‘new cars have arrived’ are code words that mark the beginning of an agreement between the buyer and the dealer.

*“For example, they send a message saying, ‘new cars have arrived’ or ‘store is open’ and so on. When they say ‘store’, it’s clear what that person’s business is. Or we say, ‘Give me two cars’. (P7, user for 18 years).”*

Individuals use coded phrases such as ‘two cars,’ ‘two bags,’ ‘furniture maker,’ or ‘two apples’ to indicate the quantity of the substance. This approach is considered a security measure for the buyer and the dealer. P10 explained this situation as follows:

*“When it’s over the phone, of course, the conversation becomes coded. For example, instead of directly talking*

*about drugs, you ask how much to rent that car? If he wants double that amount, you would say, ‘I’m coming to get two cars.’ Not two bags, but ‘I’m coming to get two cars’ worth of rent from you. Or I’m coming to get two apples. Or he treats you like a grocer, or a furniture maker, think of any profession (P10, user for 7 years).”*

### **Substance Procurement Locations, Risky Situations, and Social Consequences**

Individuals using substances often seek out places and environments that vary to access these substances, and they undertake various risks in doing so. According to P2, the locations where substance transactions occur are typically inconspicuous, away from surveillance cameras, and include abandoned buildings, wooded areas, vehicles, or park-like regions.

*“Like they say, a true believer finds another in Mecca, similarly. Usually, the places like park edges, dilapidated houses, areas like forests. Generally, they are places not so visible, without camera systems. Sometimes, the dealers, can even come to you. When they arrive in a car, you just get into the car, do the transaction without them leaving the car.”*

The locations for obtaining substances can occasionally be made on an impromptu basis. Furthermore, in districts or cities where dealing substances is prevalent, it has been observed that children are frequently employed in the streets for the procurement of these materials. Additionally, P10 notes that transactions involving substances are commonly conducted in establishments such as scrapyards and mobile phone stores;

*“There are stalls, you know, and at a stall, it’s usually just one person. That person’s location is known. Either children stand there or the person themselves. So, the stalls are on the streets, somewhere on the street, could be a house, could be anything, a scrapyard, doesn’t matter. You never know where it will be. It could be a mobile phone store. Only the locals know, we can’t know. Wherever that person who sets up the stall is, that’s the place. Of course, that’s their place, their territory.”*

<sup>2</sup> Street language in Türkiye

P4 states, "Home. You go to a home. Yes, directly to the dealer's home. So, you either go to their home or they come to your place." Similarly, P7 describes, "You enter a house to purchase the stuff. The dealer doesn't come outside due to fear. Questions like 'Will they catch me? Will they see me? Will they record me on video?' compel the dealer to open up their home to you. They turn it into a trade area." These accounts indicate that the transaction of substances commonly occurs in residential settings. The procurement of substances involves certain routines and tactics for some addicts. For example;

*"My meeting place, for instance, was at a bus stop. I would, get off at the stop, and the guy would be there too. He would sit next to me, hand over the substance, and then, as if his bus had arrived, he would get up and leave, and then I would get on the next one. (P7, user for 18 years)."*

The location and method of substance transactions can vary depending on the quantity and type of the substance procured. The exchange of substances is carried out through different venues and methods, contingent upon the amount and nature of the substance being purchased. P8 articulates this situation as follows;

*"When purchasing in bulk, it's generally at gas stations. For smaller amounts, it's done in the backstreets or quickly in a car. But for something like cocaine, it happens in residences and such places. Usually, cocaine dealers arrive in large cars. The buyer goes wherever the dealer calls them to, and the transaction is quickly done and over with."*

Within the scope of the study, participants were asked about the types of risks and problems they encountered in procuring substances. Prominent issues identified include police intervention, the necessity to venture into dangerous neighborhoods, financial difficulties, and the challenge of finding suitable locations for use.

*"The primary risk is usually the police. If the dealer realizes the police are around, they won't let you into the neighborhood. Or they'll tell you on the phone that it's risky and not to come. Then, as a second obstacle,*

*not having a vehicle is a major hindrance for purchasing substances, for getting there (P2, user for 2 years)."*

Another barrier and difficulty in accessing substances is identified as financial constraints. P6, highlighting the societal risks (such as theft, robbery, and signaling) that arise due to financial issues in procuring substances, equates the inability to access substances to the death of one's parents.

*"The biggest obstacle is money. To get money, you've committed theft, engaged in robbery, I don't know, done signaling. What if you couldn't find the money somehow? Do you know what it means for an addict not to have money? It's like your parents have died (P6, user for 14 years)."*

P2 has emphasized the various risks and consequences that substance use has brought to all aspects of their life, both financially and emotionally.

*"Finding a place to use or money isn't the problem. But you get lost in society, you're alienated from it, you're not among people, and because you don't mix with others, you always remain on the fringes. Accordingly, you end up using in some secluded place."*

Particularly, the continual consumption and procurement of substances and the need for financial resources to sustain this can deviate individuals from their moral values, leading them to engage in illegal activities such as theft and robbery.

*"I committed theft. Things like holding, signaling. Some people beg for money, some deal drugs. Like, for example, they tell you to hold the stuff. Generally, when I ran out of money, I would steal. I would steal motorcycles. I would take apart high-end motorcycles. I've taken about 50 bikes and never got caught (P8, user for 7 years)."*

It is understood that there is a transition from holding a bag to committing theft; initially, bag holding is sufficient, but subsequently, a need to resort to riskier methods like theft emerges. Furthermore, when experiencing a lack of financial

support, users tend to resort to more radical methods, believing that 'all means are justified' in procuring substances. P6 extensively explains the risks and social consequences arising from the process of substance use and procurement as follows:

*"I started by robbing my own home. Stealing my own stuff. I sold my phones and such. When that wasn't enough, I learned to commit theft. I held a bag at first, bag holding was an easy thing. They call, come, and give. After that, I started to steal. Do you know what we would say among ourselves? To get the stuff, all means are justified. It's a necessity. If there's no source of money at home, you're forced to do it. Either go and signal for a few bucks, or go and steal, or deal drugs. There's no other way out."*

The use and procurement of substances emerge as conditions that negatively impact individuals' lives in all aspects, leading them into a detrimental spiral. On the other hand, the reality that every user can potentially become a dealer highlights the potential for the spread of addiction and its associated societal risks.

## Discussion and Conclusion

This research has meticulously examined the methods used by addicted individuals to procure substances, locations utilized for access, the risks encountered in this process, their communications with dealers, and the trust relationships involved. This study, distinct from others, delves into the specific dynamics of substance access processes, particularly the relationships established with dealers and the confidentiality strategies. It places a special emphasis on how these factors impact the daily lives, social relations, and risky outcomes of addicted individuals. This approach significantly contributes to the existing literature by providing a deeper understanding of substance addiction and procurement processes.

According to this research, the commencement of substance use typically occurs among teenagers aged 14-18, influenced by neighborhood culture, social environment, and peer relationships, starting with curiosity and the thought of trying just once, which then leads to addiction

particularly, the role of curiosity and the belief that trying once or underestimating substance use with the notion that 'it won't hurt' has been noted in many studies as a starting point for substance use (Bahar, 2018, p.9; Litman et al., 2005, p.579; Dingel et al., 2015). Additionally, it is emphasized in numerous studies that adolescents and young adults are excessively exposed to substance portrayals through digital media. These portrayals influence substance use, and consequently, substance misuse rates in society have been spreading due to this (Jackson, Janssen & Gabrielli, 2018; Scott et al., 2016, p.84). Lisdahl's (2013) study demonstrates that early-age substance use increases the risk of addiction and has adverse effects on cognitive functions. On the other hand, the need for belonging, acceptance, and gaining respect within neighborhood groups can influence substance use (Bozkurt, 2015, p.59). Lastly, the presence of substance users within the family can play a role in encouraging substance use among other family members, and family ties can be utilized in the procurement of substances. Research indicates that family relationships, particularly the quality of the father-son relationship, play a significant role in adolescents beginning to use substances (Rusby et al., 2018, p.312). Another study examining factors affecting adolescent substance use points to the influence of parenting style and intrafamily communication on substance use (Gresko et al., 2022, p.2). After evolving into addiction, it has been observed that the frequency of substance use increases, the type of substance changes, and an evolutionary process begins, leading to a complete transformation of the individual's life. In this process, the individual evolves from merely being a user of substances to taking on the role of a dealer.

The evaluations on substance procurement methods investigated in the study reveal that long-term users generally prefer traditional means. In contrast, the newer generation of users predominantly utilize media and technological tools in procuring substances. Individuals who access substances through traditional channels, such as street dealers, friends, acquaintances, family, and relatives, are predominantly long-term users. For the newer generation of users who have recently started using substances, social media

platforms, and online games have become significant mediums for procurement. This finding highlights the evolutionary change in substance use practices and emphasizes the critical role of technology and media in this process. Indeed, this shift in substance procurement channels results from the global paradigm shift in other forms of shopping. Customers have developed new purchasing models through social media platforms akin to digital marketing methods (Premnath & Nateson, 2021, p.3127; Alhamad et al., 2021).

The study identifies explicitly that social media platforms such as Telegram, Instagram, WhatsApp, and Facebook, as well as certain games like PUBG Mobile and Minecraft, have been used as covert channels for substance procurement. In the study by Van der Sanden et al. (2021), it is noted that these platforms facilitate illegal drug transactions at the retail level, and among those who use social media for substance procurement, 48% utilize Facebook, 48% use Snapchat, and 20% use Instagram. The practice of substance transactions being conducted through social media applications like Instagram, Twitter, Facebook, and Snapchat and the transformation of street-level drug dealers into virtual dealers have also been emphasized in other studies (Urbanik & Haggerty, 2018, p.1343; Bahar, 2018, pp.6-13). In another study, it has been stated that modern-day substance dealers have adopted social networking platforms like Instagram and TikTok as direct marketing tools for consumers. These platforms are used to upload short videos and images showcasing illegal products using code words and emojis to attract buyers. Furthermore, it is mentioned that transactions are often conducted through mobile payment applications such as Venmo and CashApp (Hu et al., 2021).

Additionally, another increasingly prevalent substance procurement channel worldwide is the crypto market. Crypto markets are online venues where drugs are purchased, protected by technology that allows for anonymous communication and employs currencies (e.g., Bitcoin) that are difficult to trace (Bachhuber & Merchant, 2017). In a study on online purchasing by Aldridge and others (2018), it is emphasized that considering people will continue to buy drugs,

crypto markets could offer numerous advantages over offline purchases regarding personal and public health.

According to this study, one of the common traditional methods used for procuring substances is through street dealers. It is observed that access to street dealers is typically facilitated by the person who initially introduces an individual to substance use, such as friends at school or in the workplace. According to other studies, street dealers often play a significant role in the substance procurement phase. Furthermore, these sellers, driven by the motive of making money through drug sales and thereby supplying substances to young people, increase the risks faced by youth and contribute to the proliferation of addiction (Degenhardt, 2010, p.95; Yaman, 2012, p.343).

Some participants have reported accessing substances through the help of close friends or family members. In the studies by Denton and O'Malley (1999), dealing or accessing substances through family members is emphasized as a typical situation. According to research by Rosenberg (1971), children of parents with antisocial personality disorders who use substances or alcohol can be more prone to substance use and dealing. According to the results of a study conducted in Türkiye, drug dealers got involved in this business due to the influence of friends (28%), to make easy money (19%), and to gain access to drugs (17%) (TUBİM, 2010). Additionally, it was found that substance addicts can procure drugs through peddlers who distribute on foot or through individuals working in different sectors, obtaining substances from various places such as barbershops, spicy meatball vendors, cafes, and coffee houses.

On the other hand, it has been observed how creative and determined substance addicts can be in obtaining the drugs they desire. Indeed, one of the most critical findings in the study was the method of attaching substances to pigeons' feet during the COVID-19 pandemic when curfews were in place. In a study conducted by Acar, Yaman, and Semerci (2022) during the COVID-19 pandemic on substance addiction, measures like social distancing, isolation, and quarantine were

reported as challenges faced by addicted individuals in accessing alcohol and substances.

Another sub-theme addressed in the study is the trust and communication established between the substance user and the dealer during the process of obtaining the substance. The dealer aims to gain more customers, while the buyer, influenced by their addiction, desires rapid access to the substance. Consequently, mutual need creates a compulsory and pragmatic trust relationship between the buyer and dealer. Kahya and Özerkmen (2007) also emphasized that establishing a trust relationship is a necessary step for forming connections with other drug dealers and customers.

During the process of procuring substances, the language and communication methods used by addicted individuals have been observed to form a subculture among those who use and procure substances. It has been emphasized that forming friendships becomes inevitable due to these individuals speaking the same language and sharing similar experiences in the addiction and procurement process. However, these friendships and their common language carry risks (Danışmaz Sevin & Erbay, 2021, p.73). The language used in substance transactions varies from street to street and city to city (Van Hout, 2010, p. 128). However, the most striking aspect of this jargon is using everyday words in a different context. For instance, ordinary words like 'bread,' 'meal,' 'sugar,' 'cheese,' 'item,' or 'tire,' as well as daily phrases like 'store is open,' 'new cars have arrived,' 'owe 100 lira,' 'uncle Metin is here,' can become coded names varying according to the type of substance. In the study by Loupos et al. (2023), it was noted that users employ various emojis like pills and syringes or slang terms such as 'greens' and 'blues' to indicate different drugs. It was also mentioned that quantities of drugs like cocaine and marijuana are often disguised with coded terms like 'pizza' or 'cake.'

Furthermore, it has been found that the language and communication methods used by addicted individuals in the process of procuring substances involve various names and jargon specific to different substances; for instance, 'meal' for marijuana, 'wheel' or 'tire' for ecstasy, 'white' or 'cheese' for cocaine, 'rock' or 'Beşiktaş' for crack,

'uncle Metin' or 'ice' for methamphetamine, 'sister' for bonzai, 'Mother Mary' for marihuana. Similarly, Yaman's (2012, p.225) study highlights that a substance brotherhood relationship forms among young addicts, using terms like sugar, blue heart, yellow dolphin, Mitsubishi for substances like ecstasy.

On the other hand, it is observed that individuals with addiction use coded language to specify the quantity of substances during the procurement process, such as 'two cars,' 'two bags,' 'two apples,' or to communicate the location of purchase, they use phrases like 'need two tables from the furniture maker, going to make a cupboard.' All these communication methods are seen as a security measure for buyers and dealers. In a recent study by Loupos et al. (2023), it was emphasized that this coded language used in substance transactions is prevalent among the millennial generation and that deciphering the details of this language is crucial, as it provides a more detailed understanding of the social network structure and behaviors of those who deal substances through illegal channels. According to Bhaskar and Roketskiy (2021), despite the challenges in interactions between dealers and buyers, substance access can be facilitated through specific dynamics and channels due to the dealers' secrecy strategies. While substance addicts take risks to access drugs in various locations, their engagement in illegitimate activities and dangerous relationships leads to societal issues, creating a broad spectrum of impacts ranging from increased crime rates to the loss of the young population (Evren & Çakmak, 2002, p.189).

Among the most significant findings of the research are the locations used for substance procurement, the risks taken, and the ensuing social consequences. In this context, the places where substance transactions occur vary according to the region's characteristics; these locations can be as covert as someone's home, back alleys, abandoned buildings, and wooded areas, or as overt and public as bus stops, cafes, and gas stations. This situation illustrates that substance transactions can occur in hidden and public spaces. However, as Goffman (2014) noted, individuals involved in substance dealing often do not stay in one place for long due to the fear of being found by

police, other dealers, or family members, and they frequently change locations. Additionally, while special locations are preferred for bulk purchases, transactions involving small quantities are swiftly carried out in backstreets or cars, and for more luxurious substances, prestigious venues and large vehicles are typically used. For new-generation users, substance procurement locations can also include online websites. The study by Tofghi et al. (2016) underscores this emerging shift, highlighting how online websites like Craigslist are facilitating contemporary drug consumption.

Addicted individuals often engage in risky behaviors during the process of procuring substances, including illegal activities, theft, or forming relationships with dangerous individuals. Particularly, the continual need for substances and the financial resources required for their procurement can lead individuals to deviate from their moral values, pushing them towards illegal actions such as theft and robbery. Similarly, some studies have shown that addicts resort to crimes such as robbery, theft, murder, and prostitution to procure substances, and particularly among heroin and cocaine users, there is a significant relationship between substance use and committing crimes (Nurco, 1984; Nurco, 1998). Moreover, when experiencing a lack of financial support, users often resort to more radical methods, adopting the belief that 'all means are justified' for procuring substances. This situation sometimes results in the sale of inherited houses, household items, or the jewelry of a spouse or mother. It can even lead to the loss of employment, resulting in various socio-economic losses.

Overall, in the process of substance procurement, individuals have been observed to develop a network of strategies within their own context. The channels used for accessing substances range broadly from street dealers to technology and media networks, and the locations for procuring substances are found to be highly diverse. Particularly, modern-day substance dealers are using coded words, emojis, and short videos on social media and online gaming platforms to attract buyers. Therefore, understanding the role of technology and social media in substance procurement can provide a foundation for developing new strategies for

prevention and awareness of substance use among young people who use these platforms. A detailed analysis of how these platforms are used for substance procurement can provide educators and policymakers with the necessary tools to protect young people from such dangers.

In addiction treatment, it's crucial for experts to understand the social and cultural roots of substance use, particularly neighborhood culture, social environment, and friendships, and to develop treatment strategies that align with these factors. The impact of technology and social media, especially on substance acquisition among youth, should be considered, integrating approaches that adapt to these new changes into treatment processes. Experts should grasp the language and communication methods used by addicted individuals, understanding the jargon and symbols of this subculture, to facilitate more effective communication and deeper understanding during the treatment process.

Law enforcement agencies need to utilize advanced technology and data analysis to monitor illegal activities such as drug trafficking. These methods will enhance their ability to identify and intervene in extensive networks. Additionally, monitoring social media and digital communication channels plays a critical role in tracking and preventing drug trade. Law enforcement must also be familiar with new trends and technologies in substance access. The legal framework used in combating drugs should be adapted to current developments and new methods in drug trafficking.

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## RESEARCH ARTICLE

# Bibliometric Analysis of The Concept of "Organizational Differences" Using Visual Mapping Technique

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## Abstract

*In this study, it is aimed to perform a bibliometric analysis of the research related to the concept of organizational differences and to make inferences about the general structure of the field. In this direction, in the research, 303 scientific publications on "organizational differences" were examined with the bibliometric analysis method using the Web of Science database, and then the obtained data were visualized using the VOSviewer software program. Bibliometric methods such as keyword analysis, citation analysis, co-author analysis, co-citation analysis of authors were used on the identified scientific publications. Using bibliometric methods, a comprehensive view of the dynamics of the field is presented; the development of the literature on the concept of "organizational differences" has been mapped by determining the basic studies, types, years, authors, countries and publication areas. As a result of the study, it was found that the subject of "organizational differences" was not studied sufficiently in the literature; the most publications on a country basis were from America, the most publications on a year basis were published in 2019, and the most commonly cited author was Alstemark B. It is thought that the findings obtained as a result of the analysis will provide resources for future studies on "organizational differences".*

**Keywords:** Organizational Differences, Bibliometric Analysis, Vosviewer

## Öz

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*Bu çalışmada örgütsel farklılık kavramı ile ilgili yapılan araştırmaların bibliyometrik analizinin yapılması ve alanın genel yapısına ilişkin çıkarımlarda bulunulması amaçlanmaktadır. Bu doğrultuda, araştırmada Web of Science veri tabanı kullanılarak "Örgütsel farklılıklar" konusunda yapılan 303 bilimsel yayın bibliyometrik analiz yöntemi ile irdelenmiş, ardından elde edilen veriler VOSviewer yazılım programı kullanılarak görselleştirilmiştir. Bilimsel yayımlar üzerinde anahtar kelime analizi, atıf analizi, ortak yazar analizi, yazarların eş atıf analizi gibi bibliyometrik yöntemler kullanılmıştır. Bibliyometrik yöntemleri kullanarak, alanın dinamiklerine ilişkin kapsamlı bir görüş sunularak; temel çalışmalar, türleri, yılları, yazarları, ülkeleri, yayın alanları belirlenerek "örgütsel farklılıklar" kavramına ilişkin literatürün gelişimi haritalandırılmıştır. Çalışma sonucunda, literatürde "örgütsel farklılıklar" konusunun yeterince çalışılmadığı; ülke bazında en çok yayının Amerika'dan, yıl bazında ise en çok yayının 2019 yılında yayımlanmış olduğu, en çok ortak atıf yapılan yazarın Alstemark B. olduğu bulunmuştur. Analiz sonucunda ulaşılan bulguların "örgütsel farklılıklar" konusunda gelecekteki çalışmalara kaynak sağlayacağı düşünülmektedir.*

**Anahtar Kelimeler:** Örgütsel Farklılıklar, Bibliyometrik Analiz, Vosviewer

## Introduction

Awareness of differences is growing rapidly around the world. Today's business world is shaped by rapidly differentiating global economic, technological and social factors, and these differences present new challenges and opportunities for organizations. Organizations attach importance to differentiation strategies in order to gain and maintain competitive advantage, and special policies and programs are developed in response to increasing differences in the labor market (Barca & Saban, E. S. E. N., 2012). In this context, the concept of organizational differences plays a critical role for businesses to achieve these goals (Öncer, 2004). Organizational differences include elements that can emerge in many dimensions such as the internal structure of the business, management practices, strategies, culture and processes. Sources of organizational differences can appear in various fields and new differences can be created in various fields.

What is important is that the existing sources of organizational difference are analyzed and managed by the organizational management and that differentiation efforts are carried out courageously in the areas necessary for the organization to gain a competitive advantage. Organizational differences help businesses to develop distinctive features that distinguish them from other competitors in the market and to respond more effectively to customer needs. However, managing and sustaining these differences effectively requires a complex and multifaceted process. In this context, a bibliometric analysis of the publications investigating "organizational differences" was investigated using visual mapping technique. Bibliometric analysis is a quantitative method that uses statistical techniques to analyze patterns of publication and citation in a particular field. Visual mapping technique is the one such bibliometric tool that can be used to identify the intellectual structure of a research field and the relationships between different concepts. We will explore the intellectual structure of the research field identify the most influential authors, publications, countries and e number of citation in researchs over time.

## Conceptual Framework

Differences are a combination, a mosaic, reflecting a mix of elements characterized by differences and similarities, a mixture that includes difference in global conditions (Hubbard, 2004, p.27). Difference can be defined as "the state of being different, distinctiveness, otherness" (tdk.gov.tr, 06.10.2009). From another point of view, a difference is something that is different, not similar or equal, other than what is (Meydan Larousse, 2004, p.1790). The concept of organizational differences refers to the dissimilarities that exist between organizations in terms of their structure, culture, and processes (Denison, 1996). Hyde and Hopkins (2004, p.61) define the concept of difference as the degree of heterogeneity of employees within an organization. Difference is categorized under four interconnected and sometimes overlapping headings. These are workforce differences, behavioral differences, structural differences and job differences (Hubbard, 2004, p.33).

- Labor differences include group and situational identities (language, race, cultural or ethnic identity, age, gender, disability status, family status and geographical background) of organizational employees.
- Behavioral differences include ways of working and communicating, thinking and learning styles, belief/value systems, changes in employees' attitudes and expectations.
- Structural differences include differences between organizational levels in the hierarchy and interactions between functions, strategic alliances between parent companies and subsidiaries. It also focuses on structural changes in organizations such as flexibility, team-based, cross-functionality, and number of levels.
- Business differences include differences in organizations' expansion and segmentation policies. It covers the difference of customer markets, the difference of products and services offered, and the power to operate and compete (i.e.

legal and regulatory contexts, labor market realities, societal expectations/relationships, business cultures and norms) (Alay, 2022).

Organizational differences need to be managed strategically to transform organizational differences into business values and to prevent differences from turning into alienation and negative conflict in the organization. One of the internal sources of alienation in organizations is that the ideas and thoughts of the employee are not taken and the person (the characteristics of the person) is not valued. However, giving importance to individual differences within the organization will ensure that differences such as age groups, gender, national identity, religious affiliation, ethnicity, etc. will be transformed into the differences of the business while trying to attract talented individuals. This will be a factor that positively affects organizational culture and thus organizational climate, which reduces costs for the organization. Organizational culture includes not only how employees feel about their organizations, but also the beliefs, values and assumptions that give the organization its identity and standards of behavior, while climate includes the perceptions that employees share with their units and organizations. Culture includes climate, but climate does not include all aspects of culture (Terzi, 2000, p.93). Organizational culture plays an important role in the emergence of organizational climate by providing continuity in organizational actions and harmony in organizational behaviors (Moran and Wolkvein, 1992, p.42). Because organizational culture and thus organizational climate can be summarized as the perceptions of employees towards the organization. In this respect, when the differences within the organization are cared for and managed, it will lead to the emergence of new ideas, alternative solution suggestions, and different performance criteria, and ultimately increase the effectiveness and efficiency of the business. When evaluated in this way, the positive effect of managing differentiation on organizational culture is of vital importance for businesses today where the competitive power is people (Kızıl, 2011). In Schneider (1987, p.12), another study on organizational culture and climate, it is

emphasized that the best reference when interpreting organizational conditions and events is to refer to the climate. For this reason, climate is seen as an important focal point by academics who study organizations, especially those who study difference in working life. Differentiation climate, which has been a very popular topic recently, is "the set of perceptions that employees share that their organizations have policies, practices, and procedures that strengthen and protect difference and eliminate discrimination" (Gelfand et al. 2005, p.2).

When we look at the organizational differences among the sources of differences in organizations, it is seen that there are differences arising from the organizational structure within the enterprises as well as individual differences. Organizational differences may be present in the establishment of the business, as well as in the form of the formation of new differences with various requirements during the operation process. The first organizational difference is the difference in the property structure of the enterprise, in other words, the difference in capital ownership. The second source of organizational differences arises in the legal structure of the enterprise. The last source of organizational differences is the functional structure of the enterprise (Öncer, 2004).

Although the theories and models developed in relation to organizational difference are limited, many theories and models in other fields of social sciences such as sociology, psychology and social psychology form the basis of organizational differences/organizational difference climate. In this In this part of the stud this section elaborates on these theories and models.

***Social Identity Theory;*** is a basic social psychology theory to explain intergroup behavior, group membership and group formation processes. It was developed by Henri Tajfel and John Turner in 1979. This theory explains the relationship between social groups and individual identity through the meanings people attribute to their membership in identity groups such as race, ethnicity or gender (Tajfel, 1982: 64).

***Intergroup Relations Theory;*** especially in the context of work life, the constant interaction

between managers and employees, the presence of differences such as ethnic, religious, ideological or lifestyle differences can cause conflict, uncertainty and unhappiness. When intergroup relations are negative, negative attitudes and prejudices towards outgroups may emerge. Over time, these prejudices can lead to increased social distance towards different groups (Şerif, White, 1996).

*Social Categorization Theory*; is based on the premise that the human brain generally prefers the simplest and shortest path and prefers classification to facilitate information processing (Hewstone et al., 1996:56). This theory, which is used to explain intergroup relations in social life, deals with the emergence of identity structures as a result of different social categorizations.

*Equity Theory*; was developed by John Stacey Adams in 1963 (Adams, 1963, p.422). According to this theory, employees desire an environment where everyone is treated equally at work. This desire affects the motivation of employees. Employees' levels of achievement and job satisfaction are linked to the level of equality and inequality in the work environment. In addition, employees tend to compare what they get in return for their efforts in the organization with those of other employees.

*Racial Identity Theory*; states that a person's perception of identity is shaped by the racial or ethnic group to which he/she belongs, his/her level of commitment to that group and his/her participation in cultural activities (Koray-Alay, 2020).

*Cox's Interactional Model of Cultural Difference*; this model states that feeling excluded or worthless in the work environment negatively affects employees' job satisfaction, commitment and performance. On the other hand, companies where differences are accepted, supported and given equal opportunities may be more successful and achieve their corporate goals better than others (Cox, 1993, p.68).

*Hicks-Clarke and Iles Positive Difference Climate Model*; Hicks-Clarke and Iles' model examines the

impact of organizational difference on the career perceptions, behaviors and attitudes of employees in an organization. Studies show that a positive difference climate positively affects factors such as employees' organizational commitment, job satisfaction, career planning and career commitment (Sürvegil, 2010).

### Differences in Organizational Structure

The first source of organizational differences arises from the separation of enterprises in terms of capital ownership. This separation, which we can also call ownership differences, occurs as follows:

- Private Sector Organizations
- Public Sector Organizations
- Foreign Capital Organizations
- Mixed Organizations

This difference is also important in terms of defining who owns the organizations in terms of ownership and management.

### Legal Structure Differences in Organizations

Another area where businesses are differentiated from an organizational point of view is the legal structure. The legal structure, which is formed based on the decision made during the establishment phase of the organizations, changes later when there is a need or when businesses want to create a differentiation in this direction (Mucuk, 2001).

#### Single Person Organizations

- Organizations in the form of a Company (Partnership)

- Ordinary organizations

#### Trade Organizations

- Sole Proprietorships
- Capital Organizations
- Cooperatives
- Public Organizations
- Foreign Capital Organizations

### Differences in Functional Structure in Organizations

The last type of organizational differences are differences in functional structure. These

differences arise as a result of differences in organizational design. Organizational design aims to create a structure that will facilitate the achievement of the objectives of the organization by shaping many elements and responding to the demands and needs of the environment. In this direction, the functional structure the main elements that make a difference are division of labor and specialization, formalization, centralization, and departmentalization (Sabuncuoğlu, 2001). Differences in the organizational dimension are the characteristics that occur within organizations. In general, such characteristics arise due to reasons such as position, department, union, etc.

They arise due to job-related characteristics such as employees' professional, functional, or business knowledge such as marketing, finance, accounting, manufacturing, production, etc., job tenure or seniority, department or division, hierarchical ranking within the organization (e.g. top management, middle management and lower management) and work or professional experience (Choy, 2007, p.11).

These characteristics refer to the organization of performance-related attributes, including job, task, training, etc., which are likely to be related to the knowledge, skills, and abilities required in the workplace (Demirel & Özbezek, 2016).

Jungblut & Jungblut (2022), who examined whether organizational differences and different communication strategies lead to different results, investigated how the German police use Twitter and the differences between police units. As a result of the research, it was determined that the German police force differs in the use of Twitter, and this difference can be explained by environmental and organizational differences (Jungblut & Jungblut, 2022).

Engbring & Hajar (2021), who investigated the key factors shaping the organization of four Community Forest Enterprises (CFEs) in Mexico to examine how they are organized concluded that the internal organization of the cases varied beyond the archetypal distinctions often drawn by the community forestry literature.

In study Checa-Morales et al.(2021), it was tried to determine the organizational differences between three universities with different

international contexts and satisfaction levels. An analysis of discriminant power in distinguishing among three universities revealed that variables such as alignment of objectives with instructors and administrative personnel, as well as effective problem-solving communication among peers, exhibited the most pronounced discriminatory capacity.

In Liefbroer & Berghuijs, (2019); based on a survey among spiritual caregivers in a secularized European country (the Netherlands), the study shows how personal and organizational factors of spiritual caregivers are related to attitudes towards religious and spiritual difference.

## Methodology

### Method

Bibliometric research method, one of the qualitative research methods, is used in the study. The concept of "organizational differences", which is one of the important issues in the field of management, is included with many different concepts in scientific research. For this reason, a case study design was adopted in the study since it was desired to determine the current situation by examining academic research on the concept of organizational differences with bibliometric parameters. Case study is a methodological approach that uses more than one form of data collection to systematically collect information about how a limited system functions or works, allowing in-depth investigation of this limited system (Chmiliar, 2010, p.582). The basic component of bibliometric study (Pritchard, 1969, p.348), which is the application of mathematical and statistical methods to scientific communication environments, is the scope of the database (Thompson, 2018). The most widely used bibliometric databases in research are Web of Science, Scopus and Google Scholar (Demir & Gedik, 2022). The reason for choosing this database is that Web of Science (WoS) is a reliable database for bibliometric research in previous systematic literature review studies (Zupic & Čater, 2015). In this context, publication information was accessed through online searches in Web of Science in May 2023. First of all, the "Search" option on the Web of

Science search page was used to search for publications with the word "organizational differences" in all fields and without any year etc. restriction.

As a result of the search, it was seen that the number of publications containing the word "organizational differences" was 303. Since the number was not high, it was not aimed to restrict the study. The 303 identified publications were examined in terms of bibliometric indicators and categorized by the VOSviewer program. VosViewer software is an analytical tool used to create maps based on network data and to visualize and explore these maps. VOSviewer can be used to create networks of scientific journals, scientific publication networks, researchers, countries, research organizations, keywords or terms (Van Eck & Waltman, 2018, p.3).

Accordingly, the research questions are as follows:

- What is the distribution of the publications related to the concept of "Organizational Differences" scanned in WOS according to their countries?
- What is the distribution of the publications related to the concept of "Organizational Differences" scanned in WOS according to their types?
- What is the number of publications and citations by years in WOS related to the concept of "Organizational Differences"?
- Who are the most published authors in publications related to the concept of "Organizational Differences" in WOS?
- What are the Top 10 most cited authors and number of citations in publications related to the concept of "Organizational Differences" in WOS?
- What are the Web Of Science Categories of publications related to the concept of "Organizational Differences" in WOS?
- What is the Keyword Analysis of publications related to the concept of "Organizational Differences" in WOS?
- What is the Co-authorship of authors' analysis of publications related to the concept of "Organizational Differences" in WOS?
- How is the Co-citation of co-authors analysis of publications related to the

concept of "Organizational Differences" in WOS?

- What is the Co-Citation-Co-Sources Density of publications related to the concept of "Organizational Differences" in WOS?

### Limitations of the Study

The limitation of the research is that only 303 publications in the Web of Science Core Collection database were examined. Due to context differences, the word "organizational distinctiveness" was not searched. A Web of science search was conducted only with the concept of "organizational differences".

### Data collection tools and data collection process

For the analysis used in this study, documents were obtained from the Clarivate Analytics Web of Science (WoS) database. The documents included in the analysis consisted of a list of publications published in all fields at all times. The WoS database was searched using the word "organizational differences". In the study, 303 publications published in all fields at all times (without restriction) were listed.

### Data analysis

The findings of the research were analyzed with descriptive analysis technique and network maps were used with the help of bibliometric mapping program with VOSviewer, one of the software developed for bibliometric purposes.

### Findings

In the bibliometric study on the concept of "Organizational Differences", 303 publications were obtained from the WOS database in all fields at all times. Accordingly, there is more detailed information about "organizational differences" in tables and figures.

**Publications By Country**

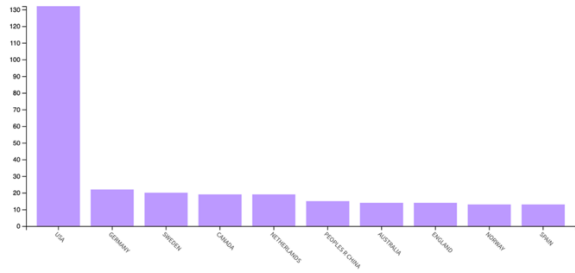


Figure 1. Publications by Country

According to Figure 1, the countries that publish the most in WOS regarding the concept of "Organizational Differences" are the USA, Germany and Sweden

**Publications By Type**

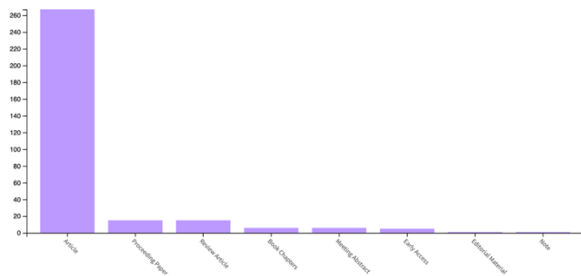


Figure 2. Publications By Type

It is observed that the most published type in WOS regarding the concept of "Organizational Differences" is "article". It is noteworthy that the article genre is the most prominent publication type when compared to other genres.

**Number Of Citations And Publications By Years**

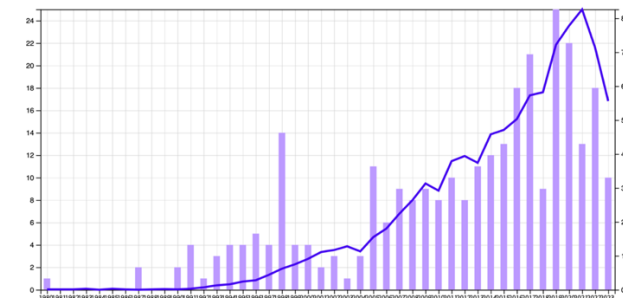


Figure 3. Number of Citations and Publications by Years

■ :number of publications  
 ■ :number of citations

The most citations to the publications related to the concept of "Organizational Differences" scanned in WOS were given in 2021 (826 citations). The year with the most publications was 2019 (25 publications).

**Most Published Authors**

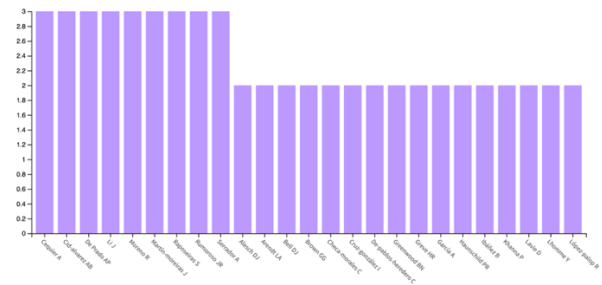


Figure 4. Most Published Authors

Figure 4 shows that Cequier A, Cid-alvarez AB, De Prado Ap, Li J, Moreno R, Martin-Moreiras J, Martin-Moreiras J, Rumoroso JR, Seedor A are the authors who published the most on the concept of "Organizational Differences" in WOS.

**Top 10 Most Cited Authors and Number of Citations**

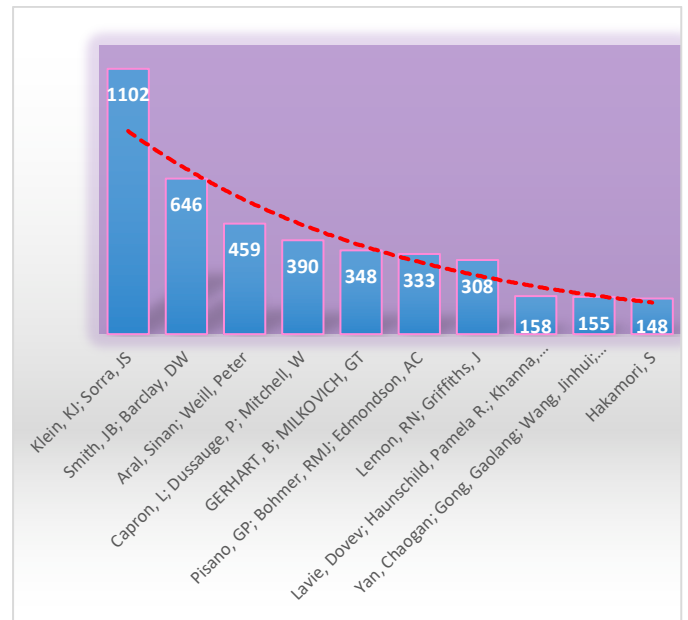


Figure 5. Top 10 Most Cited Authors and Number of Citations

According to Figure 5; Klein, KJ; Sorra JS are the most cited authors of the publications published in

WOS related to the concept of "Organizational Differences".

### Web of Science Categories of Publications

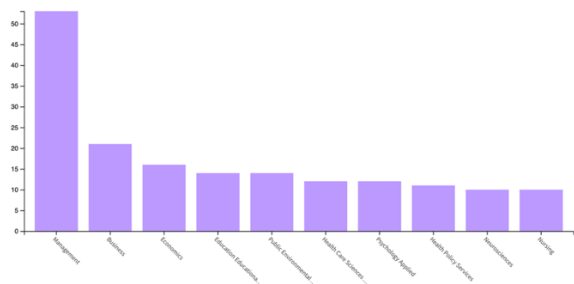


Figure 6. Web Of Science Categories of Publications

When the categories of publications related to the concept of "Organizational Differences" published in WOS are examined, it is seen that the most publications are in the field of "management". This result is not surprising considering the context to which the concept of "organizational differences" belongs.

### Keyword Analysis



Figure 7: Keyword Analysis

In keyword analysis mapping, the VosViewer algorithm calculates the total strength of the links established with other keywords for each of the 135 keywords and visualizes the keywords with the highest total link strength. "The total link strength represents the power of common use between concepts, and a higher value means that the frequency of the relationship between concepts is higher (Coşkun and Tabak, 2016, p.295). The analysis was conducted with the idea of determining the relationships between concepts and the most frequently used topics. Figure 7 shows the first 12 most frequently repeated keywords, relationship networks and total connection strength. In the keyword analysis; by

selecting the minimum number of occurrences of keyword as 1, 135 meet the threshold out of 135 keywords, the largest set of connected items consist of 12 items and 3 clusters as shown above (Cluster 1(5items); Cluster 2(4items); cluster 3(3items)).

### Co-Authorship Of Authors Analysis

Co-author analysis refers to the examination of authors' scientific publications produced in collaboration with each other. Important researchers are identified through co-author analysis (Savaş, 2023).

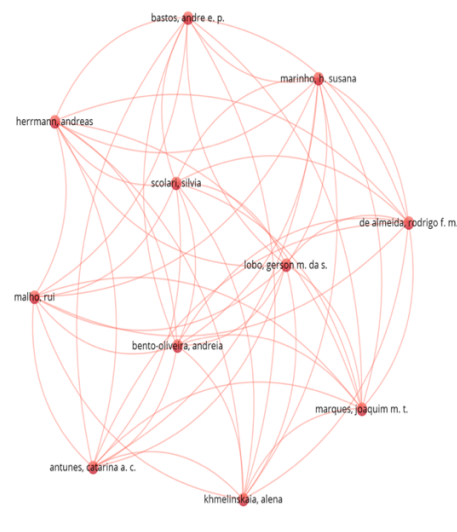


Figure 8: Co-Authorship of Authors

Figure 8 shows the mapping analysis of the researchers with the highest number of co-authorships. During the analysis, 135 authors were included in the collaboration analysis process. However, as a result of the analysis, the number of citations and publications of the authors was selected as one of the criteria and it was determined that 11 authors collaborated the most among 107 authors on the concept of "organizational differences". According to the analysis, as can be seen in the figure above, it is seen that these 11 authors are the most suitable researcher authors for collaboration.





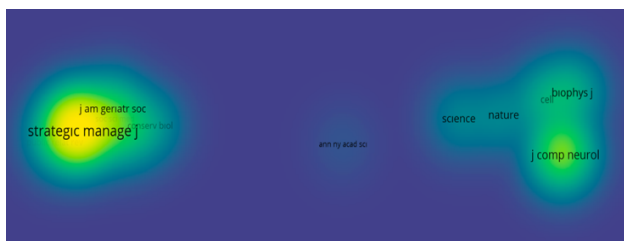
### Co-Citation Of Co-Authors Analysis

In co-citation analysis of authors, by analyzing the citation frequency of two authors cited together in a study, it allows to identify the most salient authors in a field (Small, 1973, p.265). A visualized map of co-citation analysis is presented in Figure 9 below.

**Figure 9.**Co-Citation of Co-Authors

As a result of the analysis, when the minimum number of citations is selected as 2 in Figure 9, the result that 217 of the authors in 1750 citations met the threshold value is mapped. Alstemark, B. (427 total link strength) was the author with the highest number of co-citations in the studies on the concept of "organizational differences".

### Co-Citation-Co-Sources Analysis



**Figure10.** Co-Citation-Co-Sources Density

Figure 10 shows that Strategic management journal, CAD management journal, journal of neurophysiol are the highest co-cited sources.

### Discussion And Conclusion

This study aims to examine the publications in the Web of Science database directly related to the concept of "organizational differences" in all fields at all times by using bibliometric methods. Bibliometric studies using analytical tools are extremely important for obtaining the "big picture" of the subject areas. In this respect, it enables scientific discovery of phenomena that field researchers are aware of but cannot prove concretely. It guides other researchers in the field by making it possible to identify effective research institutions and researchers. It contributes to the science communication process by revealing the research content and orientations of researchers within network clusters. Thus, researchers who evaluate the current situation in the field can move toward new and original research areas. As a result of the analysis made through VOSviewer software, it is understood that Alstemark B. is the author with the highest number of co-citations, 11 authors collaborated on the subject, and 3 clusters emerged as a result of keyword analysis. The most frequently used keywords in these clusters are "management, organization, and community forest enterprise". The keywords with the highest linkage strength are "management and organization". Also "Strategic management

journal", "CAD management journal", "Journal of neurophysiol" are the highest co-cited sources. Clusters connected by these linking elements form the linking foci of related clusters. This result is also supported by "management" and "business", which are the most published categories in WOS.

It was determined that the most publications were made in the field of "management" in WOS, the most cited authors were Klein KÍ, Sorra JS., the authors with the most publications were Cequier A, Cid-alvarez AB, De Prado Ap, Li J, Moreno R, Martin-Moreiras J, Rumoroso JR, Seeador A. and all of them had the same number of publications, the most cited year was 2021 (826 citations), and the most published year was 2019 (25 publications). In addition, it can be considered that most publications were made in the article type, and the reason for this is that the article type is seen as the most important type of academic publication (Güney, 2011, p.284). Article type provides objective indicators in determining the academic activity and scientific productivity of scientists. In this respect, it is an expected result that articles are preferred as the type of document in the literature. In some studies in the literature, similar to our study, the most studied document type was "article" (Glänzel & Moed, 2002; Hsieh, Chiu, Lee, & Ho, 2004; Chao, Yang, & Jen, 2007; Karagöz & Koç Ardıç, 2019; Chiu & Ho, 2007).

In the distribution of the studies published in WOS related to the concept of "organizational differences" according to countries, it was found that there were the most publications from the USA. When the above results are examined, it is seen that the subject of "organizational differences" has not been sufficiently studied in the literature; it is hoped that the study will shed light on the researchers who will work on the subject in the future. After this study, the root causes of the low number of publications on "organizational differences" in the literature can be empirically analyzed. Thus the analysis of the concept of "organizational differences" can be revealed over the years and the following suggestions can be improved.

- It is noteworthy that the USA has the highest number of publications on "organizational differences". In this context, collaboration and information sharing with researchers in other

countries is important to understand different perspectives and local dynamics. This will support addressing the issue from a global perspective and analyzing it in a broader context.

- Comparative analyses across different industries, cultures or geographical regions can be conducted to trace the evolution of "organizational differences" over time, offering different perspectives.
- The impact of technological developments on "organizational differences" can be explored. In addition, global perspectives and cultural context can be used to encourage studies that take into account cultural nuances and global differences in organizational differences.
- Interdisciplinary publications related to the concept of "organizational differences" can be encouraged: As a result of the bibliometric analysis, most publications were in the management, business and economics categories, and encouraging researchers from different disciplines such as sociology, anthropology etc. to explore "organizational differences" will provide an understanding that includes multiple perspectives.

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RESEARCH ARTICLE

# Comparison of Executive Functions in Offenders and Non-Offenders: A Meta-Analysis

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## Abstract

Executive function is one of the structures that explain aggressive and violent behavior. However, the existing literature has inconsistencies regarding criminal behavior due to the division of executive functions into three constructs: inhibition, monitoring, and task shifting. Therefore, the main aim of this study is to assess the effect of executive functions on criminal behavior and the second aim is to examine the impact of executive functions on different crime types. The research is based on a meta-analysis of 17 studies which were selected upon the inclusion and exclusion criteria. The meta-analysis involved calculating individual effect sizes for each study and then the overall effect size was calculated by using the random effects model. Then subgroup analyses were conducted to evaluate the differences due to crime types and psychological assessment tools. The results revealed that offenders made more errors in tasks involving executive functions than non-offenders and the findings were consistent with the literature. Additionally, no publication bias was found in the study. It is expected that this study will lay the groundwork for future studies.

**Keywords:** Executive Function, Criminality, Metaanalysis, Impulsivity, Cognition

## Öz

Yönetici işlevler, saldırgan ve şiddet içeren davranışları açıklayan yapılardan biridir. Ancak mevcut literatür, yönetici işlevlerin ketleme, izleme ve görev değiştirme olmak üzere üç yapıya ayrılması nedeniyle suç davranışı konusunda tutarsızlıklara sahiptir. Bu çalışmada yönetici işlevlerin suçluluk üzerindeki etkisinin ortaya konması amaçlanmıştır. Bununla birlikte, bu çalışmanın ikinci amacı da önceki çalışmalara ek olarak yönetici işlevlerin suç davranışlarına olan etkisini suç türlerine göre kategorize ederek incelemektir. Çalışmada meta-analiz için gerekli verilerin toplanması amacıyla öncelikle uygun anahtar kelimeler kullanılarak literatür taraması yapılmıştır. Dışlama ve dahil etme kriterlerine göre 17 çalışmaya ulaşılmıştır. Daha sonra 17 ayrı çalışmadan elde edilen verilerin etki büyüklükleri hesaplanmıştır. Sonrasında rastgele etkiler modeline göre genel etki büyüklüğü hesaplanmıştır. Son olarak, suç türleri ve psikolojik değerlendirme araçlarındaki farklılıklara göre alt grup analizleri yapılmıştır. Bulgular, suçlu bireylerin kontrol gruplarına göre yönetici işlevler içeren görevlerde daha fazla hata yaptıklarına işaret etmektedir. Ayrıca çalışmada yayım yanlılığına rastlanmamıştır. Çalışma, suçlu grubunun yönetici işlevlerde kontrol grubuna göre daha düşük performans gösterdiği sonucuna varmıştır. Elde edilen bulguların literatürle uyumlu olduğu görülmektedir. Bu çalışmanın gelecek çalışmalara zemin hazırlaması beklenmektedir.

**Anahtar Kelimeler:** Yönetici İşlevler, Suçun Önlenmesi, Metaanaliz, Dürtüsellik, Biliş

## Introduction

Human behavior depends on many biopsychosocial factors. Depending on these factors, individuals exhibit different behavioral patterns. Likewise, the concept of criminal behavior consists of specific patterns and is affected by biological, psychological, cognitive, and sociological factors (Polat, 2004; Marsh, 2006; Özaşçılar, 2016). In recent years, the expanding literature draws attention to the importance of neuropsychological structure in the emergence of criminal behavior (Joyal et al., 2013). By focusing on neuropsychological factors, researchers aim to provide a different perspective that increases the explanatory power of criminal behavior.

Social norms, the informal rules that govern behavior in groups and societies, are very important because they provide order in a society by guiding appropriate behavior. And following social norms is important for individuals because violating them often leads to negative consequences (Gross & Vorontsov, 2022). To maintain their behaviors in harmony with the community, individuals need some cognitive mechanisms, such as behavioral suppression/inhibition, impulse control, emotional self-control, and reviewing behaviors (Barkley, 2012; Çarkıt & Yalçın, 2023). In other words, the individual's ability to adapt to appropriate behaviors depends on the functionality of the self-regulation mechanism. Self-regulation components include working memory, regulation of emotions, problem-solving, analysis, and synthesis of new behavioral goals (Barkley, 2012; Goldstein & Naglieri, 2014). From this perspective, when an individual regresses in these functions, the individual's behaviors tend to deviate from the expected social behaviors.

Executive functions refer to a neuropsychological structure that controls cognitive processes that have an impact on regulating social behaviors (Barkley, 2012). These functions involve complex cognitive structures and can be seen as an umbrella term for various putative cognitive processes, including planning and working memory. These processes are performed mainly by the prefrontal areas and extend to subcortical areas in the brain (Goldstein

& Naglieri, 2014; Yalçın & Yılmaz, 2023). Miyake et al. (2000), in their Unity and Diversity of Executive Functions Model, consider the executive functions as a three-factor structure: inhibiting, monitoring, and shifting. The inhibition function can be defined as the ability to suppress dominant behavior, in other words, voluntarily inhibiting dominant responses (Miyake et al., 2000). When the inhibition function is considered, impulsive behaviors emerge in cases of impaired activity. Shifting can be defined as enabling adaptation to a changing situation or a task and provides flexibility between cognitive tasks (Zakzanis et al., 2005). The shifting function affects the problem-solving and strategy-making abilities of an individual. Any deterioration in this function causes the individual to behave violently due to regressions in his prosocial skills (Cruz et al., 2020). Finally, monitoring information is related to an individual's active use of the working memory. Working memory provides temporary storage and reshaping of the information. Since it plays an active role in the process of analyzing information, it also affects the outputs of compatible and incompatible behaviors (Karakaş et al., 2003). Although executive functions have different functions, the essential function can be seen as inhibition since the functions of protecting, monitoring, and shifting information are closely related to cognitive inhibition skills (Miyake et al., 2000). Considering this information, it can be predicted that when executive functions cannot fulfill their functions as a complex structure, there are going to be regressions in many cognitive skills and an increase in impulsive behaviors. In other words, deterioration in executive functions leads to important deficits such as reduced self-regulating behaviors (Barkley, 2012), impulsivity (Ogilvie et al., 2011), and behavioral problems in individuals (Cruz, 2020).

Executive functions include self-regulatory functions that organize social behaviors. Hayes et al. (1996), in their Behavioral Analytical Model, focus on the behavioral dimension of executive functions. In this model, executive functions come into play when previously learned behavioral regulation resources conflict with the rules that were previously set by the rule maker. Executive functions try to facilitate the generation of new

rules by considering society's reactions to the individual's behaviors. By the help of executive functions, individual can suppress his/her behavior to comply with the social expectations or make some behavioral adjustments in accordance with these rules (Hayes et al., 1996). Thereby, executive function is a functional ability of rule-managed behavior (Barkley, 2012; Kılıç, 2002). Barkley's (2012) Extended Phenotype Model for Executive Functions (2012), another model that refers to the social function of executive functions, also states that individuals need certain cognitive mechanisms to adapt to social rules. Executive functions cognitively provide these skills to individuals, contributing to the individual's adaptation within the group. In this model, executive functions form the basis of the individual's self-regulation mechanism and take part in the analysis and maintenance of behavior. Problem solving, behavior inhibition and emotion regulation skills provided by executive functions enable the individual to carry out harmonious behavior within the group (Barkley, 2012; Goldstein & Naglieri, 2014). Since executive functions contain self-regulation components, they may lead to inappropriate or antisocial behaviors in the case of dysexecutive functions (Cruz et al., 2020; Moffitt, 1993).

Another important function related to executive functions is self-control. While self-control is thought to develop through the environment, new insights have indicated that biological factors are also effective (Beaver et al., 2007). Executive functions hosted by the prefrontal cortex regulates people's impulsivity and self-control (Glenn & Raine, 2018; Glenn & Raine, 2014). There are three neural regions mainly related to executive functions. These are dorsolateral prefrontal cortex, orbitofrontal cortex, and medial prefrontal cortex (Ongur et al., 2003). The dorsolateral prefrontal cortex (DLPFC) is responsible for working memory, cognitive control, behavioral suppression, and information processing skills. In contrast, the orbitofrontal cortex is located just above the eye and communicates with other brain regions. It regulates emotions, complex decision-making processes, and goal-directed behavior. On the other hand, the medial prefrontal cortex acts at many points in the brain (amygdala,

hypothalamus, DLPFC) to perform tasks that require attention. These regions in the brain perform essential tasks in terms of executive functions, and when any dysfunction occurs in these regions, many behavioral and cognitive disorders may appear (Cruz, 2020). Brain imaging studies support the relationship between impulsive behaviors and executive functions.

The relationship between executive functions and antisocial behavior patterns has attracted attention in researchers. A meta-analysis conducted by Morgan and Lilienfeld (2000), the relationship between antisocial behaviors and executive functions was investigated by considering studies with many different experimental designs and revealed that there was a significant relationship between executive functions and antisocial behaviors. According to the study, when the group exhibiting antisocial behavior was compared with the control group, deficits in executive functions were observed in the antisocial group. Another meta-analysis, including 126 studies conducted by Ogilvie et al. (2011), has demonstrated significant effect sizes between executive functions and criminal behaviors ( $d = .61$ ), psychopathy ( $d = .42$ ), and conduct/defiant disorder ( $d = .54$ ). In addition, in a previous meta-analysis, the frontal lobe was evaluated as an executive function. However, evaluating the frontal lobe as an executive function remains erroneous (Miyake et al., 2000) because recent studies have shown that, in addition to the anterior and posterior regions of the cerebral cortex, some subcortical areas are also associated with executive functions (Chung et al., 2014). In summary, although there are some research and analysis on this subject, it is thought that new research and meta-analysis, including experimental design studies that address methodological problems (Ogilvie et al., 2011), would indicate more promising results in understanding the nature of crime and executive functions relationship. Therefore, a meta-analytic review in which three dimensions of executive functions (inhibiting, monitoring, and shifting) are discussed would be better to explain the relationship between criminal behavior and executive functions.

Many studies indicate that impairments in executive functions often lead to problems in

cognitive mechanisms, such as impulsive behaviors, planning ability, suppression of impulses, and difficulty in concentrating. A study about juvenile crime revealed that juvenile offenders have a higher number of omission errors in the Stroop Test than juveniles in the control group (Şenses et al., 2014). Another study examined the individuals who started committing crimes at an early age. According to this study, the likelihood of an individual for reoffending is related to their neuropsychological functioning during childhood and adolescence (Enns et al., 2007). In addition, many other studies have indicated that recidivism in crime is closely related to dysexecutive functions (Moffitt, 1993; Moffitt et al., 2002; Moffitt & Henry, 1991; Piquero & White, 2003). Another study by Bergeron and Valliant (2001) examined the personality patterns and executive functions of delinquent and non-delinquent adolescents. Findings indicated that personality traits and dysexecutive functions were effective in the maladaptive behaviors of delinquent adolescents. Similarly, studies conducted by Seruca and Silva (2016) and Yalçın et al. (2018), examined the executive functions in relation to the types of crime and found that there was a significant difference in executive functions between the offenders who committed violent crimes and those who committed non-violent crimes (e.g., white-collar crime). Offenders performed worse than non-offenders on their mental flexibility and planning measures, and offenders against property had poorer performance on mental flexibility measures, while violent offenders performed worse on planning ability (Seruca & Silva, 2016). Considering these findings, it can be argued that while there are differences in executive functions between criminals and non-criminals, there are also differences in executive functions depending on the type of crime (Baker, 2007; Barbosa & Monteiro, 2008; Brito et al., 2013). Along with these, there are also studies that do not find any significant relationship between these two factors (Ross & Hoaken, 2011; Morgan & Lilientfield, 2001; Syngelaki, 2009). Youngs (2004) suggests that these inconsistent results might be due to the differences in criminal behaviors. For example, since white-collar crime is characterized by more manipulative

behaviors, they are expected to have high cognitive flexibility and inhibition skills, that is, their executive functions are expected to be better, whereas interpersonal violent criminals are expected to have more impairment in their executive functions because they are characterized by more impulsive behaviors (Raine et al., 2012). Moreover, another review of the effectiveness of executive functions on criminal behaviors stated that each executive function domain is differentiated in effect according to crime or aggression type (Cruz, 2020). Considering all these findings, it can be suggested that although executive functions might be related to criminal behaviors, it remains controversial that which executive functions are related with criminality and to what extent. This difference raises the question of which of the executive functions dimensions is effective in the emergence of antisocial behavior. Thus, there is a need for a meta-analysis on studies of executive functions using more comprehensive variables and this study has been an attempt to clarify these debates.

Additionally, as stated before, while most studies focus on the psycho-social aspects of criminality (Boduszek et al., 2013; Eryılmaz, 2018a; Eryılmaz, 2018b; Galinari & Bazon, 2021; Molido-Quilez, 2020), this study focuses more on cognitive processes. Furthermore, the meta-analyses previously performed as part of the current investigation were seen to include different research designs (e.g. correlational, experimental) and no study could be found that included only experimental or quasi-experimental designs. Therefore, this study aimed to conduct a meta-analysis that only includes studies with an experimental or quasi-experimental design. The main purpose behind all of these is to contribute to the prevention of crime and rehabilitation of criminals by revealing the effect of cognitive processes on criminal behavior. Since studies revealed that deficiencies in executive functions are related to problems like emotion regulation, crime, violence and reckless behavior (Broidy et al., 2003; Denson, Pederson, Friese, Hahm, & Roberts, 2011; Moffitt et al., 2011; Saarni, 1999; Winstok, 2009), it can be argued that improvement in these functions would be useful for both prevention and rehabilitation of criminal behavior.

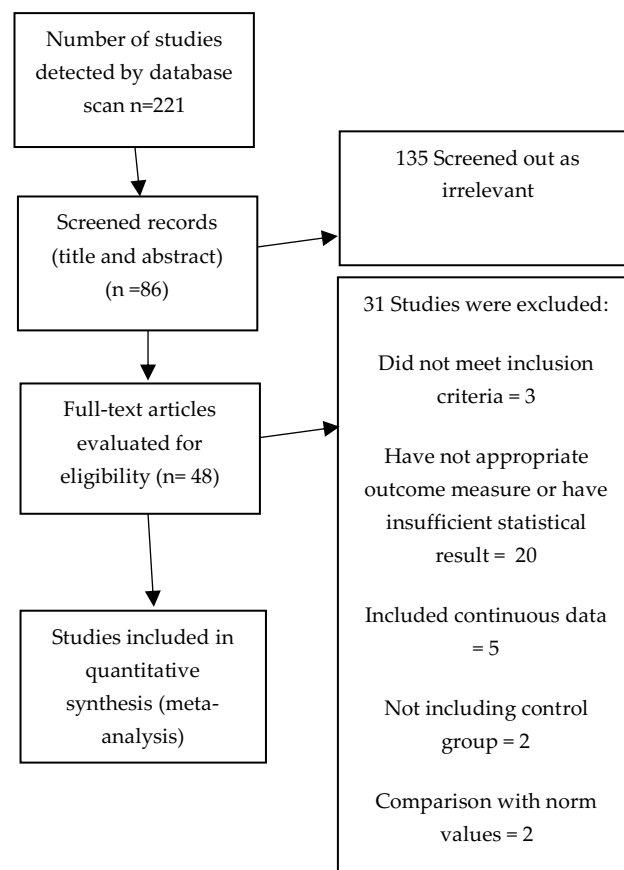


Consistent with these purposes, this meta-analysis has one hypothesis and two research questions. First, based on previous studies, the executive functions of criminal groups are expected to be weaker than the community sample group (Seruca & Silva, 2016; Ogilvie et al., 2011). This is why we tested the hypothesis that offenders perform significantly more errors in tests of executive functions than non-offenders do. In addition, although executive function factors are interrelated, as stated previously they may have varying degrees of impact on criminal behavior (Cruz, 2016; Burgess, 2020). However, most previous studies have considered executive functions as a single system. Therefore, to examine the effect of three systems of executive functions on criminal behavior, the answer to the following research question was answered: "When offenders are compared to non-offenders, which executive functions (inhibition, monitoring, and updating) are more related to offending?". Finally, executive functions may have different effects on different criminal groups, as Youngs (2004) stated, previous studies generally have focused on violent crimes. In this study, we categorized the crime groups and investigated their relationship with executive functions and aimed to answer the question, "When the offenders were clustered into different crime groups, do the levels of executive functions differ significantly between these groups?"

## Method

This paper presents results from a meta-analysis examining existing patterns of relationships between executive functions and criminality. The meta-analysis method is the gathering and interpretation of the findings of previous quantitative studies using statistical methods (Glass, 1976). For this study, the independent variable was criminality, and the dependent variable was executive functions. To enhance the explanatory power of our meta-analysis, rather than correctional studies, we just focused on quasi-experimental studies. A protocol called "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)" was followed in the meta-analysis (Moher et al., 2009). A coding table was created using Microsoft Excel while collecting the

studies. The coding table included the titles of the studies, authors' names, year of study, character of the sample (clinic, population, prison), number of samples, and research designs of the studies.



*Figure 1: The Process of Inclusion of Individual Studies as a Result of Literature Search in Meta-analysis*

A literature search was conducted on Scopus, Web of Science and PubMed with all possible keyword combinations such as "executive function" OR "inhibition" OR "working memory" AND "criminality" OR "violence" OR "offender" OR "aggression" and all articles published between 2007 and 2021 were covered. As a result of the search in the databases using keywords, 221 study titles were obtained. Eighty-six studies were selected according to the inclusion and exclusion criteria. After reading the abstracts of the 86 studies, 48 studies were found to be appropriate to our criteria. When full papers are read, some studies were seen to be analyzed over continues variables, therefore we did not include these studies in the meta-analysis (Hancock et al., 2010;

Tonnaer et al., 2016; Hancock, 2014; Haberle, 2011; Miura & Fuchigami, 2017). Some other studies were observed that they did not meet the inclusion criteria (Pietrzak et al., 2008; Ross & Hoaken, 2010; Langevin & Curnoe, 2010). Some others did not have a control group (Bromhall, 2005; Marsh & Martinovich, 2006). And in two studies, group difference analysis was performed with the norms of the scales instead of the control group; therefore, they were not included in the study (Syngelaki et al., 2009; Enns et al., 2008).

### **Inclusion and Exclusion Criteria**

Existing studies were eliminated or included in the analysis for inclusion and exclusion criteria. We included studies that at least have two groups as offenders and non-offenders to focus on experimental studies and, have at least one measurement for executive function variables. To calculate the effect sizes, the data in the studies must be understandable; the mean, standard deviation and number of participants must be indicated, and the group differences must be revealed through statistical analysis. Since the protocol date of our meta-analysis study is 2021, the studies conducted before 2021 were considered, but no specific start date was determined.

Studies that did not meet the inclusion criteria were excluded from the study by stating their reasons. Then, the experimental studies which consisted of more than two levels such as low, medium, and high violence groups and whose extreme values can be calculated, these studies were included in the meta-analysis. Whereas in cases where extreme values could not be calculated due to the characteristics of the variable such as the personality variables, these studies were not included in the meta-analysis.

The effect size of each study was calculated using data provided by the inclusion and exclusion criteria. Since different measurement methods were used to obtain the executive functions, the studies were combined with the random effects model. First, the effect size of each study was calculated to standardize the different score types in the studies and determine their weights. The web-based Campbell Collaboration (Wilson, 2020)

was used to calculate effect sizes and variances in the studies. After calculating the effect size and variance of each study, the grand effect size was calculated using the random effects model. So, the grand effect size was revealed by combining the effect sizes of the studies. Then the significance of the differences between the two groups was tested. Subgroup analyzes were conducted using the Comprehensive Meta Analysis (CMA) program (Dinçer 2020). Analog ANOVA method was used for subgroup analyzes. Subgroup analyzes measured types of crime and types of executive functions. In addition, publication bias analysis was conducted to control publication bias in the studies accessed. Publication bias in meta-analysis studies is not only important in terms of the validity of the study, but also reveals whether the studies can reflect the cumulative result (Borenstein et al., 2019; Normand, 1999). First, a "funnel plot analysis", a visual demonstration for publication bias, was introduced. Funnel plot analysis means that there is no publication bias if the studies are distributed relatively equally to the right and left of the cutoff point (Normand, 1999). The second technique we used for publication bias is "Duval and Tweedie's Trim and Fill Technique". It is a method for both detecting and correcting the publication bias. In the technique, studies that cause publication bias are identified on the funnel chart, and the program fills in similar studies by producing them until the analysis is unbiased. By producing similar studies, this technique enables us to see the effect size when the bias disappears (Borenstein, 2019:275). Finally, "Rosenthal's FailSafe-N Technique" helps to control publication bias by determining how many additional studies are needed to reverse the result that has been found. If more studies are needed to reverse the study result than the number of studies used, it means that there is no publication bias (Borenstein et al., 2019).

The effect sizes and variances of the studies were calculated to determine the overall effect size. Web-based Campbell Collaboration (2020) was used to calculate the studies' effect sizes and variances. As the materials and scores used to measure the executive functions vary, the effect size was calculated by taking more than one measurement score from the measures used in the

studies. For example, in the Stroop Test, time and error scores were included in the study as two different effect sizes. Thus, a total of 53 effect sizes and variances were calculated from the 17 studies. The calculated effect sizes were entered into the JAMOVI program and the overall effect values ( $d$ ) were obtained (Table 1.4). The model selection used for calculating the overall effect was determined using the random effects model before the analysis. The random effect model is preferred if there are differences between studies, such as methodological differences like measurement tools and techniques or population. In this case, studies are included in the meta-analysis by calculating their weights (Borenstein et al., 2007). Similarly, Şen (2018) argues that it is more appropriate to use random effects models in social sciences. This is because different scales or research designs are often used in studies in social sciences.

## Results

17 individual studies were included in the meta-analysis. These 17 studies included 21 different scales, tests, or batteries and measurements created 53 different effect sizes. There were a total of 1033 participants in the studies included in the meta-analysis.

### Descriptive Analysis of Studies

The studies included in the meta-analysis measured dependent variables using different measurement materials. When we look at the assessment materials of executive functions, it was found that the Wisconsin Card Sorting Test was used in 14.54% of the 17 studies; 10.8% of the studies used Trail Making Test, Stroop Color Word Test and, Go/NoGo Task; 8.1% of the studies used Porteus Maze Task; 5.4% of the studies used Barratt Impulsivity Scale; the other 15 measurements were found to constitute the 40.5% of the studies.

Measurement materials other than the Barratt Impulsivity Scale are all behavioral performance assessments. Barratt Impulsivity Scale (BIS-11) is one of the most frequently used self-report scales in both normal and clinical samples in the assessment of impulsivity structure. It is a scale

consisting of thirty items and using 4-point likert scoring (Patton et al., 1995).

Wisconsin Card Sorting Test (WCST) is a test created by Grant & Berg (1993) to evaluate executive functions and measure the skills of planning, strategy, and maintaining the setup against external stimuli, which are the contexts of executive functions. The test includes 4 stimulus cards, 63 response cards and 6 categories. When the subject makes the correct match 10 times, they move on to the next category. In Wisconsin Test 16 score types are calculated by using the number of successes and errors in these matching tasks. Stroop Color-Word Test is another test used to evaluate executive functions. Stroop (1935) demonstrated through his studies that when the color used and the word representing the color are different (for example, the word yellow written using blue), it is pronounced later than if the color and the word representing the color are the same and this effect is defined as the Stroop Disruption Effect in the literature. Along with the Stroop Effect, the Stroop Test began to be included as a neuropsychological test used to evaluate frontal lobe functioning (Stroop, 1935). To overcome the Stroop Disruption Effect, individuals must adapt to changing demands, in other words, they must change their habitual behavioral patterns. In the Stroop task, the participant is asked to make fewer mistakes and finish the task in the optimal time. Similarly, in the Go/noGo task, the participant is expected to reveal the correct response by suppressing the incorrect response. Higher number of incorrect responses indicates higher impulsivity (Schiffer & Vonlaufen, 2011). In the last test, the Porteus Maze task, participants must actively use their problem solving, cognitive inhibition and cognitive flexibility skills by making the appropriate response to exit the maze (Greenfield & Valliant, 2007). It's a test which has similar properties with Trail Making Test (Schiffer & Vonlaufen, 2011).

The individual studies included in the meta-analysis were conducted over different years. 29.4% of the studies included in the meta-analysis were conducted in 2007, 17.6% in 2011, 11.8% in 2008, 11.8% in 2016, 11.8% in 2014, 6.9% in 2012, 6.9% in 2013 and 6.9% in 2020.

### Effect Size and Heterogeneity Analysis

Based on the random effects model, the meta-analysis output revealed at 95% confidence interval values, the lower limit was -0.73, the upper limit was -0.37, and the grand mean effect size was calculated as  $d = -0.55$  at 0.09 standard error value. Significant differences existed between the offender and non-offender groups in executive function tasks. Since the effect size found was between 0.50 and 0.80 values, it has a moderate effect, according to Cohen (1977).

which shows the power of heterogeneity, heterogeneity of 83.72% was observed among the studies.

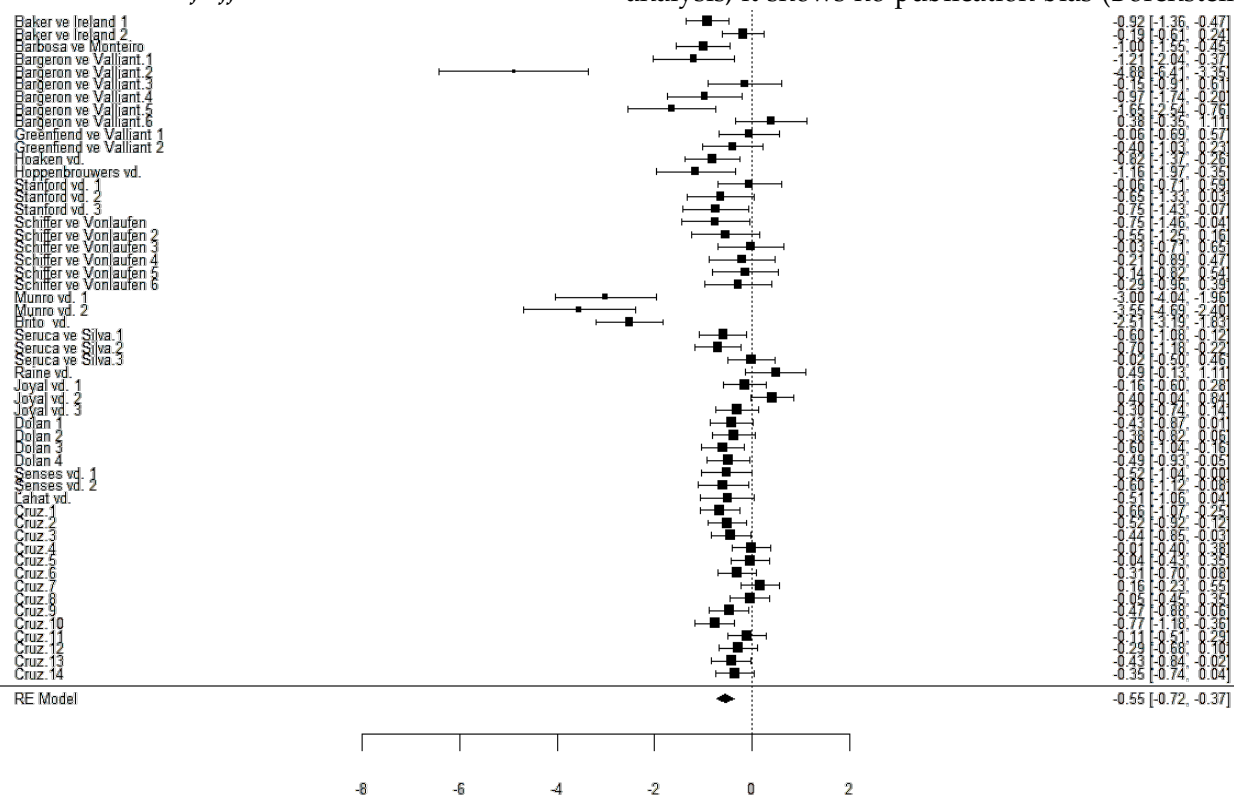
### Publication Bias

According to the funnel plot, the studies are relatively symmetrically distributed. This indicated that there is no publication bias. According to Rosenthal's Failsafe-N approach, it is seen that 2464 studies at  $p > 0.05$  level are required to reverse the  $p$  significance level of the results. Since the number of 2464 studies is higher than the

**Table 2: Results of Meta-analysis Results by Fixed Effects Model and Random Effects Model**

Model	N	Effect Size	Z	SE	%95 Confidence Interval		sd	Q	p	I <sup>2</sup>
					Lower	Upper				
Fixed effects model	53	-0.42	-11.8	0.04	-0.49	-0.35				
Random effects model	53	-0.55	-6.04	0.09	-0.73	-0.37	52	218.00	0.00	83.72

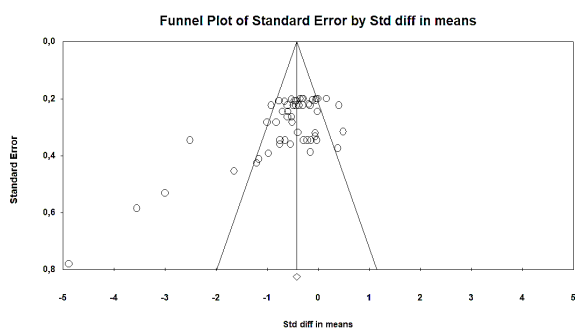
**Table 3: Forest Plot of Effect Size**



Moreover, in the heterogeneity tests performed, a  $p < 0.01$  value was observed at a  $Q = 218.00$  value according to the Cochrane Q test. Since the Q value is 69.83 in the  $X^2$  critical value table for 52 degrees of freedom ( $df$ ) and 95% significance level, it is seen that the studies are heterogeneously distributed. In other words, the null hypothesis that the variance was not significantly distributed among studies was rejected. According to the results of the  $I^2$  test,

2019; Orwin, 1983). On the other hand, Duval and Tweedie's Trim and Fill method is based on the principle of generating new studies until the p-value reverses neutral. According to Duval and Tweedie's Trimming and Filling method, no additional studies were produced due to the absence of biased studies. Thus, it is seen that there is no publication bias in the studies included in this study.

Figure 2: Funnel Plot of Studies in Meta-analysis



### Subgroup Analysis

An analog ANOVA was performed to analyze the crime type. The result indicated that crime types were found to be significant at the  $p < 0.01$  level, as the critical  $X^2 = 11.071$  value was smaller than the  $Q = 25.416$  value. Thus, crime types explain the heterogeneity between studies. When the subgroups clustered into crime types were examined, it was seen that the mixed crime group, labeled as the mixed group because the studies in this group did not explain the characteristics of their offender sample, had the highest effect size ( $d = -0.79$ ).

Table 4: Analogue ANOVA for Crime Type

Variables		N	Effect Size	SE	%95 CI		sd	0.05 confidence level $X^2$	$Q_B$	p
				Lower Upper						
Crime Type	Mixed	28	-0,79	0,13	-1,05	-0,54				
	Violence	9	-0,27	0,09	-0,46	-0,09				
	Psychopathy	5	-0,52	0,11	-0,73	-0,31				
	Sexual	8	-0,14	0,12	-0,37	0,10				
	White-Collar	1	0,49	0,32	-0,13	1,11				
	Property-related									
	Total	2	-0,56	0,19	-0,93	-0,19				
		53	-0,39	0,05	-0,49	-0,29	5	11,071	25,416	0,000

Note: mixed group represent crime type is not understood by individual studies

Furthermore, offenders with property-related ( $d = -0.56$ ), psychopathic ( $d = -0.52$ ), and violent ( $d = -0.27$ ) criminal types showed executive function deficit than controls. However, offenders with sexual ( $d = -0.14$ ) and white-collar ( $d = 0.49$ ) crimes have performed a close error rate in executive function tasks compared to non-offenders.

According to the Analogue ANOVA findings, measurement material was found to be significant at the  $p < 0.01$  level, as the critical value of  $X^2 = 27.86$  was smaller than the value of  $Q = 91.094$ . According to this result, the material types explain the heterogeneity between studies. Hoaken's (2007)

study was excluded from the subgroup analysis because it reported standardized z-scores of Concrete Subject-Ordered Working Memory, Conditioned Non-spatial- Association Test, and Abstract Subject-Ordered Working Memory Test measurements used to measure executive functions. When the subgroups were examined, it was seen that the Benton Word Fluency Test, Behavioral Assessment of Dysexecutive Syndrome, Letter-Number Sorting Test, Stopping Task Test, and Passive Avoidance Learning Task measurements were used in one study. In effect size, with the inclusion of these measures, the offender group made more errors than the control group. Two studies used the Barratt Impulsivity Test, Paragraph Completion Test, London Tower Test, Stockings of Cambridge Task, and Rule Shift Cards. Similarly, in studies using these measures, it was seen that the offender groups got worse scores than the control groups.

Go/noGo measurements were the most applied measurement tools and were used in 9 effect-size calculations. For this type of measurement, it was seen that the offender groups had more errors than the non-offender groups with  $d = 0.75$  effect size

(95% CI [0.00, 3.27],  $p < 0.05$ ). The Wisconsin Card Matching Test (WCST) was the second most applied measurement tool compared to other studies included in 8 effect-size calculations. For this type of measurement, the effect size was 0.18 (95% CI [-0.25, 1.15]) and there was a non-significant effect at the critical value of  $p > 0.5$ .

The Porteus Maze Test was used for 6 effect size calculations. In studies using this measure, the overall effect size was  $d = -0.71$  points, indicating that offenders had more errors in the Porteus Maze task than in the control group (95% CI [0.00, 3.80],  $p < 0.05$ ).

Trail Making Test and Stroop Color-Word Test measurements were used in 5 effect size calculations. Similarly, in studies using these measures, it was observed that the offender groups had more errors than the control group (see in Table 5).

Especially during adolescence, the individual adapts to the changes in himself and his social environment by means of executive functions. Therefore, deficiencies in executive functions in the adolescence might cause antisocial behaviors in early adulthood (Moffitt et al., 2002).

**Table 5: Analogue ANOVA for Measurements**

Variables	N	Effect Size	SE	%95 CI		sd	0.05 confidence level $\chi^2$	$Q_B$	p
				Lower	Upper				
BWFT	1	-0.918	0.224	-4.10	0.00				
BIT	2	-0.366	0.21	-1.78	0.00				
BADS	1	-1.00	0.28	-3.54	0.00				
PCM	2	-2.98	1.84	-1.63	0.10				
WCST	8	-0.18	1.60	-1.15	0.25				
PM	6	-0.71	0.19	-3.80	0.00				
LNS	1	-1.16	0.41	-2.81	0.01				
TMT	5	-0.58	0.11	-5.14	0.00				
Go/NoGo Task	9	-0.75	0.23	-3.27	0.00				
LTT	2	-0.21	0.24	-0.87	0.39				
Stroop WCST	5	-0.46	0.11	-4.17	0.00				
CLGT	1	0.40	0.23	1.80	0.07				
Stop-it Task	1	-0.30	0.23	-1.35	0.18				
SOC	2	-0.55	0.16	-3.45	0.00				
Simon Task	2	-0.18	0.14	-1.24	0.22				
WIT	2	0.06	0.14	0.40	0.69				
RSC	2	-0.20	0.14	-1.41	0.16				
PALT	1	-2.51	0.35	-7.25	0.00				
Total	50	-0.41	0.04	-9.80	0.00	17	27.86	91.094	0.000

Note: BWFT = Benton Word Fluency Test, BIT = Barratt Impulsivity Scale, BADS = Behavioral Assessment of the Dysexecutive Syndrome, PCM = Paragraph Completion Task, WCST = Wisconsin Card Sorting Task, PM = Porteus Maze, LNS = Letter Number Sequencing Task, TMT = Trail Making Task, LTT = London Tower Test, CLGT = Computerized Iowa Gambling Task, SOC = Stockings of Cambridge Task, WIT = Williams Inhibition Task, RSC = Rule Shifting Cards, PALT = Passive Avoidance Learning Test

**Discussion**

Prior studies have noted the importance of the impact of neuropsychological factors on criminal behavior (Moffitt, 1993; Moffitt et al., 2002; Moffitt & Henry, 1991; Piquero & White, 2003; Seruca & Silva, 2016). This study accepted the hypothesis that offenders perform significantly worse in tests on executive functions than non-offenders and the findings of the study confirm our hypothesis. Hayes's (1996) Behavioral Analytical Model confirms the results of our study. Due to the dysfunction of executive functions, the decreased ability of individuals to self-regulate, plan, and give appropriate answers to the problems might lead to aggression and criminal behaviors, and the decrease in these skills might led to the deterioration of rule-oriented behaviors.

While one reason for the impairment of executive functions is traumatic experiences in childhood (DeBellis, 2001; Deniz, 2017; Menard, 2002), another important reason is the negative effects of substance addiction, which is common in criminals, on cognitive processes (Borckett et al., 2018; Eryilmaz, 2018; Fernandez-Serrano et al., 2009).

One unexpected finding was that the offenders against property had worse performance on executive function tasks or tests than violent offenders. While it was expected that the functions of planning, organizing, and self-regulation would be impaired in violent behaviors, a similar result was obtained for property-related criminal behavior as well. A possible explanation might be that different measurement tools were used in different studies. Using different measurement materials for different crime types might have affected the effect sizes as they changed the sensitivity of the measurements. Another explanation might be that while the result related to violent behavior was affected by nine effect sizes, the result related to property crimes was obtained from only two effect sizes. This means

that the meta-analysis has not included sufficient data from property related crimes. The difference in the variance between the two groups might have affected the effect size, as Borenstein et al. (2019) stated that the variance would affect the effect size.

Among the effect sizes included in the meta-analysis, the Go/No-Go measurements were seen to have a high effect size. The Go/No-Go task measures individuals' ability to inhibit executive functions as seen in the Barratt Impulsivity Scale and Stroop Color-Word Test, which measure cognitive and motor inhibition ability. In these measurements, the offender group performed more errors on the Stroop Color-Word Test and Go/NoGo Task and had more impulsive scores on the Barratt Impulsivity Scale than the non-offender group. Thus, it can be concluded that the impulsive behaviors of the offenders are more than those of non-offenders because of inadequacies or deterioration in the inhibition abilities controlled by executive functions, and these impairments might lead to criminal behaviors. These findings are consistent with the results of much previous research that the offenders are characterized with increased impulsive behaviors (Hecht & Laztman, 2017; O'Toole et al., 2016; Zhu et al., 2019).

Similarly, The BADS, London Tower Test, Computerized Iowa Gambling Test, and Cambridge Socks Task are the materials created to measure the strategy-enactment and problem-solving abilities of executive functions. As expected, in the studies that used these materials, it was seen that the offenders performed worse than the non-offender group on the BADS and Cambridge Stockings Task measurements (Barbosa & Monteiro, 2008; Dolan, 2011). The problems experienced as the result of their decision-making mechanisms during the tasks might have increased their impulsive or aggressive behaviors by causing frustration.

Another contradictory finding is that there were no significant differences between offenders and non-offenders in the Wisconsin Card Sorting Test (WCST). The Wisconsin Card Sorting Test is a classical measure of individuals' ability to adapt to changing rules (set-shifting), mental flexibility, thinking in a logical framework, and problem-solving. A possible reason for this result may be that some crimes are committed in a highly

impulsive manner (such as wounding and sexual assault), while others require a high level of cognitive abilities and planning (such as white-collar crimes). Therefore, the nature of the crime behavior might have acted as a confounding variable. Contrary to impulsive crime behaviors, cognitive skills are expected to be reasonably used in planned crimes. The fact that the measures were collected from both planned and impulsive crime groups may have caused the results to be meaningless. This finding is consistent with the study of Cruz (2016), who reported that, while there was no significant difference between offenders and non-offenders in terms of set-shifting, there was a significant difference in the context of inhibition.

In addition to these results, some inconsistencies were found between tests that measure similar neuropsychological structures. For set-shifting measures, while there was no significant difference between the groups in the rule-shifting cards and the WCST, there was a significant difference in the Trail Making Test. Similarly, Burgess (2020) indicated that although mental flexibility and set shifting are associated with violent behaviors, inconsistent results come out from studies using the WCST and the Trail Making Test. Our study, consistent with the Burgess' study, encountered the same measurement problem that gave rise to failure in finding any association.

Finally, it seems that executive functions play a critical role in impulsive criminal behavior. Therefore, it is possible to reduce antisocial behaviors of individuals in rehabilitation services, especially with interventions for executive functions. For example, a rehabilitation program that modified by Dawson and Guare (2004) for executive functions focus on to improve EF that increase attention span to set self-regulation of emotion, planning ability and decrease impulsivity. Thus, it can be aimed at reducing aggressive behaviors of individuals and increasing problem solving abilities, interpersonal relationship.

It seems that traumatic experiences in childhood affect cognitive abilities (DeBellis, 2001; Taft, Creech & Murphy, 2016; Eryılmaz, 2018). Preventive actions should be taken in this regard.

Providing psychoeducation to families about childhood trauma may increase their awareness. At this point, it may be useful to explain the legal consequences of maltreatment as well as its possible effects on the future psychological development of children in the education model developed. Finally, we can add the protective factor for childhood traumas to the responsibility of professionals working on the subject. In fact, the deficiency in executive functions can be understood by attention deficit and impulsive behaviors in children. Professionals should question the situation of children with these behaviors at home. Because both child maltreatment can lead to EF deficit and EF deficit might prepare the ground for the child to become child maltreatment. As a result, recognizing executive dysfunction at an early age may be valuable in crime prevention studies.

## Conclusion

This research sought to gain an understanding of criminal behavior from a neuropsychological standpoint. In general, the findings support the overall study hypothesis that there is a relationship between deficits in executive functions and criminal behavior and this result is also consistent with the previous research findings (Cruz, de Castro-Rodrigues & Barbosa, 2020; Ostrosky & Diaz, 2019; Ross & Hoaken, 2011). The findings also partly support that there is a difference between executive functions with respect to the type of crime (Barker et al., 2007; Hancock, Tapscott, & Hoaken, 2010; Seruca & Silva, 2016). The findings show that although there is a significant difference between the groups in terms of executive functions in mixed, violent, psychopathic, property related crimes, there is no significant difference between offenders and non-offenders in white-collar and sexual crimes.

The results in this meta-analysis also indicate that the use of different measurement materials in different studies leads to inconsistencies in terms of study findings. Therefore, for the future studies, it can be suggested that it would be beneficial to use research designs in which different materials measuring executive functions are used in the same study.

When the results of the study are considered in terms of application; since there is a relationship between deficits in executive functions and criminal behavior, to prevent recidivism it might be useful to develop rehabilitation programs for incarcerated offenders and the ones who are subjected to probation with poor executive functions. In addition, since executive functions are differently associated with distinct types of offenses, it can be recommended that the intervention programs should be developed based on the specific needs of criminal typologies indicated in this study. When it comes to crime prevention, the findings also point to the importance of detecting and intervening with executive dysfunctions as early as possible to prevent overall crime, as Raine (2002) also stated. Well-designed intervention methods would be useful to prevent the development of antisocial behaviors and future criminality in children and adolescents.

## Limitation

This study had some limitations. The major limitation of this study is that there is no gold standard measurement material for executive functions. Although different measurements or tests could be evaluated in the meta-analysis, including different measurement materials would affect the validity of the study.

Second limitation is that the criminal behavior varies across offensive styles. The individual studies included in this research cover different offense types. For this reason, a subgroup analysis was performed in the meta-analysis, and the studies were evaluated according to crime types. In this situation, as Youngs (2004) stated, despite the overestimation of executive functions in some types of crime, the lack of sufficient studies in some other types could prevent reaching an objective result.

Third limitation is that although some individual studies in different languages were accessed during the screening process, the data could not be obtained due to language limitations. Although it is thought that the inclusion of the studies from different cultures in the meta-analysis would contribute to obtain more objective results,



inability to include these studies in this research limited the scope of this study. Cultural differences can create fundamental differences in crime research because individuals are affected by the societies in which they grow up. It should be taken into consideration that cultural differences, especially in socialization processes, may have an impact on the individual's cognitive system. Poor family environments or ineffective parenting skills during childhood may cause children to have weak social bonds and therefore, inefficiency in self-control. (Marsh et al., 2007). To overcome this problem, the research owners tried to reach out the data set from these researchers directly via e-mail, but no response was provided.

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## RESEARCH ARTICLE

# Rhythms of Resistance: The Cultural Dynamics and Emotional Resonance of Iranian Rap in the Iranian Soundscape

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## Abstract

*This paper delves into the dynamic interplay between Iranian rap music and its audience within Iran's socio-political context, marked by stringent censorship and authoritarianism. Drawing on theoretical frameworks from James C. Scott and Pierre Bourdieu, the study explores Iranian rap as a medium for 'hidden transcripts'—a subtle form of resistance against oppressive structures. Through qualitative analysis, including participant observation and in-depth interviews with Iranian rap listeners, the research uncovers the genre's emotional impact and its implications for individual and collective identity, cultural continuity, and political resistance. The findings reveal that Iranian rap music resonates deeply with Iranian youth, providing empowerment, solidarity, and a sense of community. It articulates a narrative of resistance, reflecting the complex interplay between fear and courage, nostalgia and loss, hope and aspiration. The music becomes a vehicle for expressing not only immediate frustrations but also broader societal aspirations. This paper contributes to the discourse on music as a form of cultural resistance, highlighting Iranian rap's role in shaping cultural identity and agency. It underscores the genre's significance in navigating life under a repressive regime and offers insights into how art can reflect and influence a society's socio-political dynamics. The study affirms the transformative potential of music, suggesting that creative expressions of resistance can foster hope and inspire collective action towards a more open and just society.*

**Keywords:** emotion, music, resistance, rap, culture, anthropology.

## Öz

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*Bu makale, sıkı sansür ve otoriterizmle işaretlenmiş İran'ın sosyo-politik bağlamı içinde Farsça rap müziği ve dinleyicileri arasındaki dinamik etkileşimi ele alıyor. James C. Scott ve Pierre Bourdieu'den teorik çerçeveler çizerek, çalışma, baskıcı yapılarla mücadelede ince bir direniş biçimi olan 'gizli metinler' olarak Farsça rap'i inceliyor. Katılımcı gözlem ve İranlı rap dinleyicileriyle yapılan derinlemesine röportajlar da dahil olmak üzere nitel analiz aracılığıyla, araştırma, türün duygusal etkisini ve bunun bireysel ve kolektif kimlik, kültürel süreklilik ve politik direniş için olan sonuçlarını ortaya çıkarıyor. Bulgular, Farsça rap müziğinin İranlı gençlerle derinden yankı bulan güçlü bir altkültürel ifade biçimi olduğunu gösteriyor, onlara güçlendirme, dayanışma ve topluluk hissi sağlıyor. Müzik, korku ve cesaret, nostalji ve kayıp, umut ve arzu arasındaki karmaşık etkileşimi yansıtan bir direniş anlatısı oluşturuyor. Müzik, sadece dinleyicilerin anlık hayal kırıklıklarını ve arzularını ifade etmekle kalmıyor, aynı zamanda daha geniş toplumsal değişim arzularını da dile getiriyor. Bu makale, Farsça rap'in kültürel kimliği ve faliliği şekillendirmeki rolünü vurgulayarak bir kültürel direniş biçimi olarak müzik hakkındaki söylemlere katkıda bulunmaktadır. Türün, baskıcı bir rejim altında yaşamı yönlendirme ve müzakere etmedeki önemini vurguluyor ve sanatın bir toplumun sosyo-politik dinamiklerini yansıtmaya ve etkileme şekillerine dair içgörüler sunuyor. Çalışma, müziğin dönüştürücü potansiyelini doğruluyor, yaratıcı direniş ifadelerinin umut uyandırabileceğini ve daha açık ve adil bir toplum yönünde kolektif eyleme ilham verebileceğini öne sürüyor.*

**Anahtar Kelimeler:** duygu, müzik, direniş, rap, kültür, antropoloji.

## Introduction

In Iran's complex cultural and political landscape, music has always been a key player in shaping and reflecting the thoughts and feelings of the people. Rap music, in particular, has become a powerful voice, especially among the young. It often challenges the strict censorship rules of the country. This study looks into the deep emotional and cultural layers of rap music in Iran, a place where creating art is often a careful act under political scrutiny. The main issue here is the struggle between Iranian youth wanting to express themselves and the strict rules set by the government. This struggle is very clear in rap music, which has become an important way for people to speak out against oppression, even though it's often not fully understood or valued for its emotional and cultural importance.

The goal of this research is to uncover the deep emotional connection and cultural importance that rap music has for Iranian listeners, especially considering the political situation in the country. This study aims to show how rap music is used for personal and group expression and as a way to deal with and resist the challenges of living under a strict government. The importance of this study is that it can help us better understand how art and politics interact and add to the conversation about how music can be a form of cultural resistance. By looking into how listeners emotionally connect with rap music, this research hopes to shed light on the wider social and political issues in Iranian society. Using a qualitative approach, this study involves detailed interviews and observing participants to really understand the experiences of Iranian rap music fans. The research questions are about the emotional reactions to rap music, the cultural background of these reactions, and how Iranian rap artists connect with their audience.

## Background: Getting familiar with the field

Iran's musical odyssey is a tale of continuous evolution, mirroring the nation's rich cultural heritage and complex socio-political narratives. The journey of music in Iran is not merely a timeline of artistic development but a reflection of the nation's soul, chronicling its triumphs and

tribulations through melodious expressions. This exploration delves deep into the historical backdrop that has shaped the Iranian musical identity, offering a comprehensive understanding of its transformation from the ancient dynasties to the contemporary underground rap scene.

## Placing music and poetry in Iranian culture

Poetry and music have long been pillars of Iranian culture, with their influence permeating social, political, and spiritual realms. The ancient Avestan hymns and Rumi's ghazals exemplify the enduring role of poetry in Iran's artistic heritage. Poets have historically leveraged their verses for social and political critique, shaping Iran's historical trajectory and offering alternative societal visions. Spiritually, poetry has been a conduit for expressing devotion and exploring life's profound mysteries, as seen in the works of Iran's revered poets. The significance of poetry in Iranian culture extends to its symbiotic relationship with music, where the lyrical content of a song often takes precedence over its melody. Rap music has gained popularity in Iran, possibly because, more than just being about music, it places a significant emphasis on its lyrics. Iran's historical affinity for words, akin to its appreciation for poetry, could contribute to the appeal of rap music in the country.

Tracing back to the Sasanian Empire, Iranian music's origins highlight its role in societal functions, from royal hunts to battle hymns, as detailed by Majd (Majd, 2011). Despite the Arab conquest, Iranian musical traditions persisted, influencing Islamic arts and contributing to genres as far-flung as flamenco. Islam's influence on Iranian music, contrary to constraining it, enriched its metaphysical and mystical qualities, as Miller notes (Miller, 2012). This art form was preserved and refined through generations by musicians and Sufi mystics, particularly during the Safavid era, when it became integral to religious theater. Music's therapeutic role in Iranian culture is also notable, with traditional healing ceremonies in Baluchistan using instrumental music for treating possession diseases, demonstrating music's deep-seated role in Iranian life. Despite challenges, Iranian music's resilience underscores its cultural

and social significance, maintaining its revered status in Iran's cultural tapestry.

### Music Before the Islamic Revolution

During the transformative years leading up to and following the Iranian Revolution, music in Iran underwent a profound metamorphosis. The Pahlavi dynasty's modernization policies, spearheaded by Reza Shah, sought to Westernize Iran's cultural landscape, inadvertently setting the stage for a rich intermingling of Western and traditional Iranian musical elements. This era witnessed the flourishing of non-religious art forms, with figures like Ali Naqi Vaziri, who studied in Europe, pioneering a Western-influenced harmony within Iranian music (Azimi, 2020). The subsequent reign of Mohammad Reza Pahlavi saw an even greater infusion of Western culture into Iranian music, with pop music reigning supreme and enjoying relative freedom from censorship. The Islamic Revolution of 1979, however, marked a dramatic shift, as it did for all facets of Iranian life. The revolution's impact on music was profound, with resistance songs becoming anthems for protesters and a means of spreading revolutionary messages. These songs, often set to traditional melodies and performed by a mix of professional and amateur artists, were instrumental in rallying the masses and articulating the spirit of rebellion.

Anoushiravan Ehteshami notes that the tradition of using music as a tool of resistance has deep roots in Iran, dating back to the constitutional revolution of 1906 (Ehteshami 2007, pp.29-44). Aref Qazvini, a renowned musician and composer, became a symbol of this resistance, using his art to inspire political change. His compositions, drew from the rich tapestry of Iranian mythology to echo the nation's contemporary struggles for freedom. The resistance music of the 1979 revolution was a tapestry of influences, blending choral music, Latin American leftist anthems, and Iranian laments. These songs, often recorded in makeshift home studios, captured the raw emotion of the era and became a vital part of the resistance movement. Religious themes also found their voice in the music of the revolution. Songs like "Khomeini Ei Imam," attributed to Ayatollah

Khomeini, were performed by religious groups and reflected the ideological underpinnings of the Islamic Republic Party.

In sum, the Iranian Revolution's resistance songs were not merely musical compositions; they were potent tools of propaganda, communication, and mobilization that contributed significantly to the fall of the monarchy and the rise of the Islamic Republic (Tavakoli Targhi, 2001). Through their powerful lyrics and melodies, these songs became a rallying cry for a nation in the throes of profound change.

### Situation of Music After the Islamic Revolution

The 1979 Islamic Revolution in Iran was a pivotal moment that transformed the nation, ushering in a theocratic regime based on Sharia law. Ayatollah Ruhollah Khomeini, the revolution's figurehead, emphasized the importance of cultural reform to establish Islamic ideology across society. He aimed to purge Western influences, as reflected in the Cultural Revolution Law, which sought to replace Western culture with an Islamic-national educational culture (Nooshin 2020, pp.269-275). The Cultural Revolution had widespread effects, including the closure of universities and the enforcement of strict Islamic principles in public and private spheres (Simadoust, 2017). Art, including music, had to conform to Islamic values, determining what was permissible (Halal) and what was not (Haram) (Tapper, 2002).

The Islamic stance on music is complex, as the Quran does not explicitly mention it, but some Hadiths suggest that music associated with sinful behavior is prohibited. Yet, there are instances of Prophet Muhammad engaging in singing. Scholars like Tariq Ramadan have proposed criteria for music to be considered permissible in Islam, including adherence to Islamic ethics and maintaining a balance in its role in life (Larsson 2012, pp.49-64).

Post-revolution, music in Iran was heavily regulated, with the government banning most musical activities. Khomeini's condemnation of music likened its influence to that of opium, leading to a crackdown on musical instruments and recordings, with severe punishments for violations (Simadoust, 2017). Despite these restrictions, music persisted in Iran, adapting to



the sociopolitical climate. The Iran-Iraq War saw the use of music for propaganda, with broadcasts of heroic songs and religious monodies to honor martyrs. The Ministry of Culture and Islamic Guidance, established in 1986, further regulated cultural products, including music, based on Islamic moral codes (Simadoust, 2017). Over time, Khomeini moderated his views on music, and after the Iran-Iraq War, there was a slight easing of restrictions, with classical Iranian music returning to the airwaves, albeit with continued censorship (Shiloah 1995). Despite the repressive environment, music remained a form of resistance and identity expression. The death of Khomeini in 1989 and the end of the war brought more changes. The 1990s saw a resurgence of pop music, with illegal VHS tapes circulating and private parties featuring banned songs (Mozafari, 2011).

Under President Seyyed Mohammad Khatami's more liberal regime starting in 1997, the music scene experienced further liberalization. Female singers could perform for all-female audiences, music schools reopened, and the ban on carrying musical instruments was lifted. However, musicians still faced restrictions on content, with religious and theosophical themes being favored (Rostovac 2009, p. 59-82). Pop music grew in popularity, and while rock bands faced more scrutiny, the music scene diversified. The underground music scene also emerged, especially during Mahmoud Ahmadinejad's presidency, when Western music faced renewed bans. This scene, often based in basements, became a space for young, educated Iranians to express themselves through rock, rap, and alternative music, addressing taboo subjects like sex, drugs, and politics (Rostovac 2009, p. 59-82 Nooshin 2005, p. 463-494). The internet's arrival in the mid-90s facilitated the underground music scene's growth, allowing musicians to bypass government restrictions and connect with audiences despite the lack of physical venues (Simadoust, 2017). This scene represented a new wave of musical creation, reflecting the struggles of Iranian youth against governmental and societal pressures.

## Rap Music Scene of Iran

Iranian rap, also known as *rap e Farsi*, is a music genre that emerged in Iran in the 2000s, reflecting the social, political, and cultural narratives of Iranian youth. It has faced challenges like censorship but remains a vital cultural force. Golpushnezhad (Golpushnezhad 2018, pp.260-275) divides the evolution of Iranian rap into three distinct phases: the initial phase of community formation, the "golden age" of widespread acceptance, and the contemporary phase of ongoing evolution amidst socio-political changes.

Initially, Iranian rap was centered in Tehran, with groups like *021* pioneering the scene. Despite government and societal pushback, the community grew, leveraging the internet to share their music. Economic disparities influenced the quality and themes of the music, with rappers from affluent areas focusing on indulgence, while those from less privileged areas addressed societal issues. Notable rap battles, such as between *TM Bax* and *Zedbazi*, highlighted the competitive spirit within the scene.

The second phase saw technological advancements like high-speed internet and satellite TV expand rap's reach, with platforms like Rapfa centralizing the music. Although still illegal, some rappers monetized their craft through underground performances. The 2009 presidential election saw rap as a medium of resistance, gaining recognition even among older generations. By the 2010s, Iranian rap had solidified its presence, with artists performing abroad and the government ambiguously acknowledging the genre. The contemporary scene is marked by the diaspora of pioneering rappers, collaborations with international artists, and festivals in Europe. The current rap scene is categorized by the artists' location and orientation: expatriate rappers, socio-political rappers in Iran, and government-affiliated rappers. Recent events, such as the 2022 protests sparked by a tragic incident, have seen rappers arrested, showcasing the ongoing struggle and resilience of the genre in the face of oppression.

## Situating the Study in a Theoretical Framework

The theoretical underpinnings of this research are grounded in a multidisciplinary exploration of ethnomusicology, the anthropology of art, and the interplay between resistance and emotion. This framework is pivotal for dissecting the complex cultural phenomena surrounding Iranian rap music.

### Art and Cultural Contextualization

Understanding music and art involves looking at the broader cultural context, like putting together a puzzle. Alfred Gell's "Art and Agency" revolutionized the way we think about art in anthropology. Gell suggested that art, including music, is like a living entity with the power to connect with people and influence them. Art reflects and shapes the society it comes from, serving as a mirror and a tool for change. (Gell, 1998), When we listen to Iranian rap, for instance, we're not just hearing sounds; we're engaging with a social force expressing the struggles, dreams, and voices of the people. This music aims to stir things up, evoke emotions, and provoke thought, demonstrating Gell's idea that art is a dynamic conversation between the artist and the audience.

Robert Plant Armstrong's "Affecting Presence" emphasizes the emotional impact of art. Armstrong sees art as a living force that can deeply affect us on an emotional level. He introduces the concept of 'affecting presence,' highlighting how art communicates with us personally, creating unique experiences for each individual. Armstrong explores the cultural context of art, emphasizing the 'rules of formation' that shape artistic expressions within different cultures. He delves into the intersection of emotions and culture, asserting that to truly understand art, we must grasp how it engages our feelings within its cultural origins. (Armstrong, 1971) In the case of Iranian rap, it serves as an 'affecting presence,' embodying a form of protest deeply rooted in the country's cultural scene, echoing the pain, pride, and dignity of those living under challenging conditions. Armstrong's work underscores the importance of feeling, not just analyzing, art to comprehend its true essence.

## Resistance and Power Dynamics

James C. Scott's influential work, 'Domination and the Arts of Resistance: Hidden Transcripts,' (Scott, 1990) directly informs the theoretical approach of this study. Scott explores how individuals in oppressive environments employ subtle forms of resistance to challenge and subvert power structures. He introduces the concept of 'hidden transcripts,' representing private thoughts and actions hidden from dominant powers. These hidden acts, including language, humor, and music, serve as powerful tools for resisting authority without overt political confrontation. Scott's ideas become particularly pertinent when analyzing Iran, where citizens use hidden transcripts to resist strict government control. In societies with limited political rights and no legitimate avenues for opposition, people often resort to covert forms of resistance. Scott identifies two social spaces: the 'onstage' space where individuals conform to the dominant power's expectations, and the 'offstage' space where they can express themselves more freely. The public transcript and hidden transcript reveal that true resistance often occurs in subtle, everyday acts. Scott terms these acts as the "arts of resistance," where people use cultural expressions to resist power, even though these acts might not be overtly political. In repressive regimes, these arts of resistance serve as a way for people to maintain their humanity and dignity. Scott's concept of hidden transcripts is reflected in the lives of Iranian citizens, who find ways to resist and express themselves privately despite strict social and cultural rules. These hidden acts become a form of agency, allowing individuals to assert their autonomy and cultural identity in the face of oppression. The hidden transcripts, characterized by their location, various forms of behavior, and ongoing tension, embody a significant form of resistance against dominant powers. Scott's insights emphasize that to truly understand societal actions and motivations, both public and hidden transcripts must be considered.

In addition to James C. Scott's work, Pierre Bourdieu's analysis contributes significantly to the theoretical framework of this study. (Bourdieu, 1991) Bourdieu's analysis explains the broader

context of societies under totalitarian governments, highlighting the emergence of two distinct cultures. There is an official culture imposed by the ruling group, embodying prescribed values and rules, alongside an unofficial culture practiced by the general population. Understanding the dynamics of resistance in such a society necessitates an exploration of its history and culture. In the case of Iran, the unofficial culture, encompassing literature, music, and humor, has influenced the official culture over time. Bourdieu's perspective underscores the importance of linguistic nuances and cultural expressions in unveiling the power dynamics inherent in societies under authoritarian rule.

### Emotion and Culture

In the studies of the anthropology of art, we encounter the terms "emotion" and "affect" very often. Some scholars see them as synonymous, but this study aligns with the view that treats them as distinct concepts, particularly when discussing art. The philosophical foundation for this perspective draws from Baruch Spinoza's ideas. According to Spinoza, affect, the driving force behind action, and emotion are intertwined facets of the same coin. Emotion, for Spinoza, arises from thoughts and ideas, and both affect and emotion play a role in instigating action. This connection between emotion and action is crucial when considering art as a tool of resistance, where hope and fear become fundamental emotions shaping responses to societal issues. (Deleuze, 1988) Our study aligns with Spinoza's philosophy that emotion, as a driving force, is integral to action. In the context of Iranian rap music, emotions like hope and fear are deeply intertwined with the art form's role as a tool of resistance. The lyrical content and themes in rap music often convey these emotions, offering a form of expression that challenges societal norms and power structures.

Dominique Moisi expands on Spinoza's emotions, adding humiliation as a third key emotion. Moisi suggests that hope signifies confidence, fear indicates its absence, and humiliation represents wounded confidence. These emotions profoundly influence individual

actions and inactions. Fear can lead to constant worry and inaction, a tool often employed by controlling governments. Hope, rooted in confidence, fosters the belief in positive change. Humiliation, as wounded confidence, can initially result in inactivity but may escalate into actions against those causing the humiliation. This framework provides a nuanced understanding of how emotions shape our sense of self and our responses to the world. (Moisi, 2010) Moisi's framework of hope, fear, and humiliation provides a lens to understand the emotional landscape within societies. In the context of Iran and its rap music scene, the emotions expressed in the music reflect the societal dynamics. Rap artists may convey hope for change, fear of oppression, and responses to societal humiliation. These emotions become powerful narratives in the artistic resistance against the constraints imposed by the government.

John Leavitt's perspective on culture and emotion is essential, emphasizing that emotions are complex, culturally embedded experiences. Leavitt challenges the idea that emotions are mere feelings and introduces a translation of emotions across cultures. He suggests moving beyond empathy to sympathy, aligning our emotions with others to construct models of their experiences. Leavitt also highlights the role of ethnography and literature as vehicles for conveying emotions, offering rich data to reshape our understanding. Furthermore, Leavitt introduces the concept of collective symbolic productions of emotion, where rituals and cultural practices trigger shared emotional responses within groups, transcending individual experiences. This comprehensive approach, integrated with other perspectives, underscores the importance of cultural context in understanding and interpreting emotions. In the context of Iranian rap music, Leavitt's approach guides the exploration of emotional responses shaped by the unique socio-political and cultural landscape, religious beliefs, political dynamics, societal norms, and the interplay of bodily states, non-verbal expressions, and technology. (Leavitt, 1996) Leavitt's approach emphasizes the importance of cultural context in understanding emotions. In the study of Iranian rap music, this means considering the socio-political and cultural

landscape of Iran. Leavitt's idea of translating emotions across cultures aligns with the exploration of how Iranian rap music, with its unique cultural expressions, resonates with and communicates emotions to its audience. The study delves into how cultural meanings and societal norms shape emotional responses to rap music.

## Methodology

In this research, I used a mixed-methods approach to explore the role of Iranian rap music as a form of everyday resistance in Iran's socio-political context. This approach provides a comprehensive understanding of individuals' subjective experiences and the broader socio-cultural phenomena. In this study, I wanted to understand how rap music affects Iranian listeners emotionally. To reach this goal we used different methodologies and got a deep insight into the emotional and cultural layers of Iranian rap. I found out that in Iran, where rap is an underground art, it brings out a range of emotions in its listeners, closely tied to the culture of Iran. All the methods used in this research were aimed at finding out what emotions rap music brings out and how these emotions lead to certain actions or behaviors in Iranian listeners. I also wanted to understand what makes it more or less likely for these emotions to turn into actions. Given the sensitive nature of the subject, especially within Iran's political climate, ethical considerations were paramount. The research adhered to principles of consent, honesty, and trust. Participants were informed about the research goals, and their consent was obtained for the use of the data within the research. Trust was particularly crucial, as the study involved a music genre that challenges governmental authority. Establishing trust with participants who knew the researcher only through an online forum presented a unique challenge, which was addressed through consistent honesty and transparent communication. The methods that we used were participant observation and semi-structured interviews.

In this qualitative research method, the researcher spends time in the field, participating in activities to gain a complete understanding of the

study subjects. Participant observation helps the researcher notice things that might be missed from a distance. This type of observation is especially helpful in the early stages of the study, allowing the researcher to gain a general understanding of the field and decide on other methods to use.

Due to political reasons in Iran and the illegality of rap music there, which prevents any rap concerts or events, participant observation for this research was conducted on social media and forums related to Iranian rap music. The researcher actively participated in discussions on these social media platforms. In the contemporary era, social media has become an integral aspect of our daily lives, presenting itself as a valuable field for research. Disregarding this domain would be a mistake for researchers. However, like any field, it possesses both advantages and limitations. Numerous studies discuss the methodologies researchers should employ when conducting studies on social media platforms. One of the challenges that is discussed in so many of these researches is the ethical dimension of studies that use social media platforms as their field. The article: "Ethical Dilemmas Using Social Media in Qualitative Social Research" explores ethical considerations in social media research, focusing on four key areas: the risk of harm, the distinction between private and public data, issues related to informed consent, and concerns about anonymity. (Hennel, Limmer, Piacentini, 2020, pp.473-489)

The issues mentioned in this article were crucial for our research anonymity of the people who were participating in the conversations on social media was very important and their identity being revealed would have the risk of harming them which is why I am not mentioning the name of any of the platforms that participant observation took place in. Also in the course of our conversations, it was mentioned that I was researching the topic so the people in the conversation were informed.

In semi-structured interviews, the researcher uses open-ended questions and then determines follow-up questions based on the informants' responses to capture their psychological and experiential world. In-depth, semi-structured interviews were conducted with listeners of Iranian rap music. These interviews were designed

with open-ended questions to obtain rich, descriptive data. The interviews aimed to provide a window into the experiences and emotional states of individuals who listen to Iranian rap, capturing their feelings, perceptions, and narratives. The interviews were conducted online via the ZOOM application. A voluntary participation form was sent via email before the interview. If they agreed to participate, a ZOOM link was shared with them due to the ethical considerations of this research. Participants were reached through social and political rap forums. They were selected based on age groups, focusing on listeners born between 1987 and 2000, we talked with thirty informants in this age group. This age group has witnessed the birth of rap music in Iran and is the most active in political and social rap forums.

### **The Role of Rap Music in Reflecting and Shaping Emotional Experiences**

In the context of Iran, where the socio-political landscape imposes significant constraints on expression, music—particularly rap—has emerged as a powerful medium for the articulation of collective and individual emotions. This section delves into the intricate ways in which Iranian rap music not only mirrors the emotional landscape of its listeners but also actively participates in molding it. Through the lens of our interviewees' experiences, we explore the symbiotic relationship between music and emotion, and how this dynamic interplay is particularly poignant within the unique cultural tapestry of Iran.

The interviews we conducted showed that Iranian rap music acts like a secret way of communicating. It's a tool people use to express their disagreement, challenge cultural and political rules, and keep their sense of self and power in a tough environment. This music talks about topics that are usually off-limits or hard to talk about, giving listeners comfort and a way to let out their feelings. The emotions shared by the people we talked to ranged from finding comfort and letting go, to feeling angry and resentful, and even feeling hopeful and wanting change. This shows the many sides of resisting in Iranian society. For example, the interviews showed how music helps keep hope

and dreams alive, even though it's risky to get involved with underground rap. This hope isn't just sitting back and waiting; it's an active force that pushes people to want change, tying in with our research question about music's power to inspire. Rap music becomes a light of possibility, making listeners think about and work toward a society that respects their dreams. Also, the interviews gave us a detailed look at how the emotional power of Rap music can make people brave enough to face possible consequences. This shows the complicated choices listeners make, adding depth to our research focus on what makes emotions turn into actions.

The analysis of the interviews through the lens of John Leavitt's perspective ( Leavitt 1996, p. 514-539 ) on emotions reveals a rich tapestry of cultural and emotional interplay within the Iranian context. It shows how rap music, as an art form, acts as a social agent, shaped by and shaping the cultural and social context of Iran. It also serves as a powerful emotional force, creating subjective experiences that reflect and influence the inner lives of its listeners. Here we are going to list the emotions that were mostly seen in interviews.

Our interviews showed that rap music is a powerful source of empowerment for many Iranian listeners. It makes their experiences and feelings valid, helping them build a stronger sense of self and identity. This empowerment theme is closely linked to their culture. It challenges the stories told by those in power and offers a different identity based on being real and resisting. One of the interviewees shared that when he first listened to a rap song during his teenage years, it felt as though someone was articulating his thoughts. The lyrics addressed topics he had always wanted to discuss but lacked the courage to do so. This hesitance was not solely due to political reasons; he also felt cultural pressure, as if he were not permitted to voice dissenting opinions when confronted with ideas he believed to be incorrect. Another interviewee shared how rap played a pivotal role in shaping his personality during his formative years, making him a more honest individual. He emphasized that the level of openness and clarity about societal conditions expressed in rap was a rarity in artistic forms during that period. He remarked, "We struggled to

find such transparency in any other artistic creation. During that time, everything, including our inner thoughts, faced heavy censorship. Rap, however, marked the beginning of a new chapter in our lives, teaching us the value of honesty."

Nostalgia was also a strong emotion among the people we talked to. They felt a deep yearning for an Iran that was once more open or an imagined Iran that could exist without the current limits. This nostalgia is about more than just missing the past. It's about the future possibilities that are being held back. The music becomes a way for listeners to connect with their cultural past and grieve over what they see as it's fading away. This feeling directly relates to our research focus on cultural context. It shows how emotions brought out by Rap music can mirror a shared memory and a collective story.

Rap music also creates a strong sense of solidarity and community among its Iranian listeners, especially important because it's an underground genre. The shared feelings that come from the music build connections. These connections can lead to social unity and even political action. One of the interviewees shared her experience of connecting with like-minded individuals through rap forums and discussions. It was in one of these rap communities that she met her boyfriend. Their shared passion for the genre not only deepened their connection but also provided a platform for improved communication and understanding. This underscores how music, particularly Iranian rap in this instance, can act as a bridge between individuals, facilitating interactions and enriching relationships. Another interviewee likened listening to rap music to strolling down the street with a close friend who openly shares their struggles and experiences. This creates a profoundly personal connection that intensifies the music's resonance. He emphasized that knowing there's someone creating songs about these struggles and others listening to the same songs because they are going through similar experiences has made him feel a sense of belonging to a community.

Hope and the wish for a better future and change are also common themes in our interviews. Even with the risks that they face for listening to underground rap, people hold on to the hope that

their voices will help change society. This hope is active and motivating, pushing people to seek change. The way music feeds this hope supports our research about music's power to inspire. Rap music shines as a symbol of what could be, pushing listeners to dream of and work towards a society that values their dreams and goals. An interviewee shared insights on how rap music transformed societal perceptions of problems. Before the emergence of rap, she noted that societal issues were not as palpable; despite an awareness of significant problems, the lack of open discourse rendered them invisible. This invisibility, she argued, allowed people to avoid thinking about the problems altogether. However, rap music changed this dynamic by addressing these issues candidly. It was likened to shining a light on the proverbial elephant in the room – suddenly visible to everyone, prompting discussions and reflections. The interviewee provided a concrete example by highlighting the reduction in street harassment in Tehran. She attributed this positive change, in part, to rap music. Following the Women's Life Freedom movement in Iran, numerous rap artists created songs addressing various issues faced by women. These songs encouraged introspection and emphasized the need for individuals to initiate change within themselves. For instance, the lyrics conveyed messages about not judging or making sexist comments based on a woman's clothing choices, challenging people to recognize their role in societal issues. The interviewee expressed confidence that, before these rap narratives, many individuals were unaware of their contribution to the problem. However, the explicit discussions in rap music brought these issues to light, fostering self-awareness and instigating positive transformations within the community. These responses to Rap music give a full answer to our research question about how music shapes cultural identity and personal power.

In our interviews, fear was a common feeling due to the dangers of engaging with underground music. However, this fear is often matched with bravery and resilience. The way music emotionally impacts people can give them the courage to face possible risks. One interviewee reminisced about the early years of Iranian rap when high-speed

internet wasn't accessible to everyone, and rap music could only be obtained through CDs. During their high school years, they were all avid rap music fans, pooling money to buy the latest CDs. Each day, one person would take the CD home to either listen to it or copy it onto a computer. However, carrying a rap music CD at school or on the streets was a source of significant stress, almost comparable to carrying drugs. Getting caught with such a CD at school could lead to serious trouble. Similarly, in public spaces, such as the streets, there was a constant risk, as police officers would sometimes randomly stop and check bags for drugs, knives, or even rap CDs, making those years a period of heightened risk and danger.

Another thing that we wanted to explore in this research is what factors influence the translation of emotions felt by rap music audiences into action, we are going to explore the factors:

**Connecting with the Music:** How much listeners feel connected to the music and its message is really important. If they relate to what the songs are saying, they're more likely to be inspired to do something.

**Cultural and Social Influence:** In Iran, where expressing yourself openly is often restricted, the culture has a big impact on how people react to rap music. When listeners act on the new ideas in rap music, it's a big deal in a society that's usually more traditional.

**Personal Experiences Matter:** What someone has gone through in their life affects how likely they are to act on their feelings. For example, people who've faced unfairness or oppression might be more driven to take action because of the music.

**Strength in Community:** Having support from others who feel the same way can push people to turn their feelings into actions. Knowing you're not alone and that others are ready to stand with you is a strong motivator.

**Belief in Making a Difference:** If listeners believe that their actions, inspired by the music, can make a change, they're more likely to take a stand. Believing in the power of their actions is crucial.

To sum it up, the feelings that rap music brings out in Iran lead to actions that challenge old ways,

encourage deep thinking, and bring people together for change. Whether people act on these feelings depends on how much they connect with the music, their cultural background, personal experiences, support from others, and their belief in the impact of their actions.

In this research, we've woven together a story about how Iranian rap music touches hearts and minds in Iran, and how it fits into the bigger picture of Iran's culture and politics. We talked to people who listen to this music and found out it's not just about the tunes—it's about feelings, identity, and standing up to challenges.

The emotions that come out in these interviews are diverse. Iranian rap can make people feel strong and proud, or it can remind them of what's been lost in their culture. This music is like a mirror showing what its listeners are going through. It's not just background noise; it's a key part of the conversation in Iran, questioning the usual stories told by those in power and offering a different way of seeing things.

Even though Iranian rap is underground, it's created a strong bond among those who listen to it. This community is hidden but full of life, sharing dreams and memories. It's more than just enjoying music—it's about quietly standing up to what's normal in society. This music is a safe place for people to express themselves freely, just like James C. Scott talked about in his idea of 'hidden transcripts'.

A big issue we noticed is how people don't just listen to the music—they use it to spark change. The hope and drive that comes from this music show it's not just about dreaming of a better future; it's about making it happen. This ties in with what scholars like Pierre Bourdieu (Bourdieu, 1991) have said about how culture can shape our world. We also saw that even though it can be risky to get into this kind of music in Iran, people are brave enough to do it anyway. They weigh the importance of the music against the risks, showing how powerful music can be in tough situations.

This research is important for understanding music and art in different cultures. It shows us that music isn't just something to listen to—it's a way for people to express themselves and react to what's happening around them. The story of rap music in Iran is a perfect example of how art can be

a way to share feelings, keep culture alive, and comment on politics.

## Conclusion

In our deep dive into Iranian rap music and its impact, we've explored how art, resistance, feelings, and culture all mix together. We've looked at how individuals and groups in Iran connect with this music, using ideas from thinkers like Scott and Bourdieu. This journey showed us how music can say what words often can't and can bring hidden thoughts and feelings into the open.

Iranian rap has become a key voice for Iranian youth, a way for them to talk about their struggles and dreams. It's about balancing their rich cultural past with their need to be free and express themselves. The interviews we did showed us how this music isn't just personal; it's a shared way of standing up and hoping for something better.

Through Iranian rap, we see how art can be a strong tool against strict control. It's a way for people to be themselves and question what's usually accepted. This music is like a cultural treasure, showing the tension between what's public and private, spoken and unspoken. It's proof of people's constant search for freedom, even when things are really tough.

The ideas from Scott and Bourdieu helped us peel back the layers in this music. The idea of 'hidden transcripts' is important, showing how quiet resistance can grow away from the spotlight in Iranian society. Bourdieu's (Bourdieu, 1991) thoughts on culture add to our understanding of how Iranian rap fits into the bigger picture.

As we wrap up this paper, it's clear that Iranian rap is about more than just music. It's part of bigger discussions about society, culture, and politics. It shows the strength and creativity of people who, despite challenges, find ways to speak out, share their stories, and build a community. The way listeners connect with this music isn't just because it sounds good; it's a purposeful act of keeping their culture and identity alive.

The stories from our interviews talk about a shared hope for a better future. They show how young people, despite the risks, use underground rap to feel powerful and resist. This music has become a way for them to express all the complex

feelings that come with living under a regime that limits their freedom—fear, longing, anger, hope, and dreams.

In the end, this paper isn't the last word on the subject. It's just the start of a bigger conversation about the role of Rap music in places where people face oppression. The story of Iranian rap is still being written by those brave enough to imagine a world where they can speak freely. It's a strong reminder of how art can challenge, bring people together, and inspire. This study also helps us understand why people resist in tough situations. How Iranian listeners connect with rap music—finding strength, community, and hope—gives us a closer look at how people push back against tough rules. It's a reminder that resistance isn't always about big protests; sometimes it's about the small, private ways people stand up for themselves.

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