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Siyaset Bilimi ve Uluslararası İlişkiler Dergisi

Araştırma Makaleleri
Research Articles

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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

INTERNATIONAL MIGRATION DYNAMICS IN THE CONTEXT OF OECD COUNTRIES

Sinem DEDEOĞLU ÖZKAN [*]
Seda ÖZLÜ[**]
Dilek BEYAZLI[***]

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Abstract

Globalisation, one of the important phenomena of today, has led to political, social and economic changes on both regional and national scale. These rapid changes seriously affect the phenomenon of migration, its target and the quality of life. Especially in EU and OECD countries, various policies have been implemented to prevent the increasing migration rate, fulfil the requirements of the global economy, and eliminate the developmental differences between countries, regions and sub-regions. Thus, it is of great importance to investigate the causes of international migrant mobility that deeply affects the economic and social structure of nations. The present study aimed to determine the factors that affect international migration towards the OECD countries. A current data set consisting of 79 variables defining the social, economic, the environmental structure was created, and correlation and regression analysis methods were used to determine the factors that affected international migration in OECD countries. With this work, it has been observed that there are strong relationships between

[*] Arş. Gör., Karadeniz Teknik Üniversitesi, Şehir ve Bölge Planlama Bölümü, ORCID: 0000-0002-1610-2242, Sorumlu Yazar, snmdedeoglu@gmail.com
[**] Arş. Gör., Karadeniz Teknik Üniversitesi, Şehir ve Bölge Planlama Bölümü, ORCID: 0000-0002-2568-7043, sedaaozlu@gmail.com
[***] Prof. Dr., Karadeniz Teknik Üniversitesi, Şehir ve Bölge Planlama Bölümü, ORCID: 0000-0002-8182-5420, dilekbeyazli@gmail.com

international migration and various economic and social development variables.

Keywords: Correlation-Regression Analysis, Migration, International Migration Stock, Migration Dynamics, OECD

OECD Ülkeleri Bağlamında Uluslararası Göç Dinamikleri

Öz

Günümüzün önemli olgularından biri olan küreselleşme, hem bölgesel hem de ulusal ölçekte politik, sosyal ve ekonomik değişikliklere yol açmıştır. Bu hızlı değişimler göç olgusunu, hedefini ve yaşam kalitesini önemli şekilde etkilemektedir. Özellikle AB ve OECD ülkelerinde artan göç hızının önlenmesi, küresel ekonominin gereklerinin yerine getirilmesi, ülkeler, bölgeler ve alt bölgeler arasındaki gelişmişlik farklılıklarının giderilmesi için çeşitli politikalar uygulanmaktadır. Bu nedenle ulusların ekonomik ve sosyal yapısını derinden etkileyen uluslararası göçmen hareketliliğinin nedenlerini araştırmak büyük önem taşımaktadır. Bu çalışma, OECD ülkelerine yönelik uluslararası göçü etkileyen faktörleri belirlemeyi amaçlamaktadır. Çalışma kapsamında sosyal, ekonomik ve çevresel yapıyı tanımlayan 79 değişkenden oluşan güncel bir veri seti oluşturulmuş, OECD ülkelerinde uluslararası göçü etkileyen faktörleri belirlemek için korelasyon ve regresyon analiz yöntemleri kullanılmıştır. Bu çalışma ile; uluslararası göç ile çeşitli ekonomik ve sosyal kalkınma değişkenleri arasında güçlü ilişkiler olduğu gözlemlenmiştir.

Anahtar Kelimeler: Korelasyon-Regresyon Analizi, Göç, Uluslararası Göç Stoğu, Göç Dinamikleri, OECD

Introduction

The 21st century is considered an era of mobility and freeness where alterations in transport, technology, and culture normalise thoughts and actions of the people to move beyond the borders (Urry, 2007). Thanks to the decline in international transportation costs, the enhancement and accessibility of information and telecommunication technologies, and the rise in income in a few fast-growing economies, the financial barriers to immigration have reduced, and this enabled potential migrants to immigrate to remote regions (Gagnon and Khoudour-Castéras, 2011). It is widely considered that international migration has stepped up in recent decades, migrants are travelling longer distances increasingly, and their origins and destinations are becoming much more diverse

(Arango, 2000). Hence, international migration has now been regarded as an ongoing aspect of globalisation (Newland, 2011). Nowadays, there are several major migration corridors all over the world, four of which are major arteries (from north to north, from south to south, from south to north, and from north to south), and the majority of the migration occurs in the south to the south corridor (Anich et al., 2013). In addition to the dense immigration movements from underdeveloped and developing countries to the developed world, individuals and/or households perform international migration movements at varying intensity, depending on socio-demographic and socio-economic conditions (Newbold, 2010).

The phenomenon of international migration is a process that involves change, and the individual's urge to migrate and the factors that lead to migration might change over time. The phenomenon of immigration, which varies from country to country and its components and reasons, depends on the period of time and sample of migration. In brief, the phenomenon of international migration and its causality follow a more complex process than simple and one-dimensional approaches. Diversity of migration definitions and policies varying from country to country, time-dependent innovations, individual-based factors have required international migration and its reasons to be discussed with multi-dimensional and multivariate processes. Understanding these forces and constraints that shape international migration movements is crucial for both sending and receiving countries. The study aims to determine the factors that impact international migration in OECD countries. The study, in which movement determinants are discussed in socio-demographic, economic, and environmental contexts, was performed particularly among OECD countries, which have hosted increasing migration movements in recent years. As a result of the known heterogeneous structure of the phenomenon of international migration and the necessity to discuss the study in a multi-dimensional approach, it was decided to follow a multivariate process in the context of countries. The factors, which were used in describing international migration and determining causality, were obtained from the scientific literature, and statistical interpretations were performed with the data set through correlation and regression analysis.

The structure of migration in OECD countries was examined through the specified multivariate and multi-dimensional process, and variables affecting/related to international migration as well as statistical models that account for these variables were established. Hence, it is

envisaged to make a descriptive and statistically valid, reliable assessment, to make predictions, and to contribute to the scientific literature in the context of international migration policies.

1) Theoretical Framework

Migration, which is generally described as a permanent or semi-permanent change of residence, is spatial mobility and involves any movement by people regardless of distance, composition, or reasons (Lee, 1966; Gagnon and Khoudour-Castéras, 2011; Fargues, 2018). International migration, which represents mobility across national borders in the most general terms, gathers distinct contact populations that are different in terms of linguistic, cultural, economic, social, political, and other aspects (Fargues, 2018; De Tapia, 2003). The International Organization for Migration (IOM, 2004), which considers the country of citizenship solely as a determinant, states migration as a process in which non-citizens move to a country for settlement, and international migration as a country change. The United Nations approaches 'international migrant' in two ways and defines individual migrants as 'any person who changes their usual country of residence' and regarding the mass migrants, 'it defines international migrant stocks as the number of people living in a country or region other than their country of birth' (Fargues, 2017). The conventional typologies of international migration, which is the process of people crossing borders for various reasons, are described by experts in six main categories. These are permanent settlers, temporary contract workers, temporary professional workers, undercover or illegal workers, asylum seekers, and refugees (Stalker, 1994; De Tapia, 2003).

Over the last half-century, international migration has risen worldwide, in spite of the increased efforts of many governments to limit immigration (Polgreen and Simpson, 2010). According to the World Bank (2018), there has been an absolute rise in international migrant stocks since the 1960s (about 76 million), when global, comparable, and comprehensive data were first obtained. Between 1975 and 1980, while about 5 million people migrated from one country to another (Friedberg and Hunt, 1995), with globalisation, the numbers increased dramatically to 100 million in 1980 and 175 million in 2000 (Benería et al., 2012; Taylor, 2006; Bossard, 2009). The United Nations Population Division estimated that in 2010 the number of international migrants exceeded 200 million (Esipova et al., 2011). At the end of 2017, international migrants, which were 258 million worldwide, accounted for

3.3per cent of the world population of 7.6 billion; however, it appears that this ratio has not changed significantly since the 1990s (Fargues, 2018; De Tapia, 2003). Between 1950 and 2017, the total number of international migrants increased at a rate roughly equal to that of the world population (De Haas et al., 2019).

Globalisation has increased the potentiality of taking advantage of the diversity and opportunities in countries that provide an incentive for people to improve their lives, and currently, the scale of international migration has gained a global dimension (De Tapia, 2003; Benería et al., 2012). As revealed by Benería et al. (2012), the forces of globalisation have been shaped by neoliberal ideologies of market-driven growth in recent years, though most of the forces that trigger international migration rely on longstanding inequalities between the poor and wealthy countries of the world.

The reason why migration has expanded since the sixteenth century - particularly over long distances - was the increasing rate of change linked with the development of the capitalist world market (Cohen, 1995). The great wave of industrialisation from the nineteenth century to the early twentieth century led to the first definition of the 'age of mass migration', and economic and demographic determinants played a key role (Hatton and Williamson 2005; Castles, 2010). The First World War brought an end to this mass migration, and migration movements slowed down drastically during the interwar period (Stalker, 1994; Bertocchi and Strozzi, 2008). The accelerating globalisation of the post-1945 era led to the second 'age of migration', and this wave reached much further than the first by attracting the population from almost all parts of the world (Castles and Miller, 2009; Castles, 2010). In the late 1950s and early 1960s, the economic outlook in Europe progressed, people were urged to stay in the country, and there was a net import of workers due to substantially soared labour demand (Stalker, 1994). Decolonisation as a global migration destination since the 1970s has led to the end of large-scale European immigration, while the political and economic turmoil around independence caused the migration of migrant workers to northwest Europe, and the collapse of the Berlin Wall in 1989 created a new migration border around Europe's eastern periphery (De Haas et al., 2019). During the years leading up to the financial collapse in 2008, highly developed economies increasingly became dependent on immigrant labour; low-skilled migrant workers were regarded as out of place in bright new post-industrial economies, whereas international employment of highly skilled staff was considered

valuable (Castles, 2010). The decline in labour flows caused by the global economic crisis, the Arab Spring that broke out in Tunisia in 2011, and spread rapidly as well as the famine of 2011 generated remarkable yet adverse effects on international migration (Gagnon and Khoudour-Castéras, 2011). For De Haas et al. (2019), this global migration map is becoming more distorted rather than more diverse on its own and reflect the asymmetrical nature of economic globalisation processes in recent decades rather than ruling out the idea that this migration has 'globalised'.

In general, international migration is positively correlated with changes in traditional lifestyles and increased expectations, specifically with rural-urban migration, and hence with all factors that are associated with structural change (Benería et al., 2012). Even though the factors that feed someone's urge to leave his/her country vary depending on the country, region, and level of human development, the common theme is the opportunity (Esipova et al., 2011). Demographic structure, disparities in income and income inequality, migration costs, immigration policy, migrant stock, political conditions, and macroeconomic circumstances in both the source and destination country might influence the flow of people between countries (Polgreen and Simpson, 2011).

Economic dimension: The first decade of the new millennium has witnessed increased international mobility towards OECD countries, and economic factors, especially large income disparities between countries, probably played a remarkable role in determining migration flows (Ortega and Peri, 2013). Neoclassical economics utilises the microeconomic level of individual choice to explain the phenomenon of international migration (Massey et al., 1994). According to the theory, individual rational actors decide to migrate since cost-benefit analysis leads individuals to expect a positive net return (Jennissen, 2007). According to the Conventional Neoclassical Growth Model and 'push-pull' model, international economic inequalities such as wage gaps are the most common causes of immigration De Haas et al. (2019), while according to the labour market theory, the strongest factor that impact migration is employment and it is followed by income disparities (Krieger and Maitre, 2006).

International migration patterns indicate that migrants are systematically moving from low-wage countries to high-wage countries (World Bank, 2018). The relative deprivation of an individual or household has a positive impact on the incentives to migrate, and a society with a large wage gap is expected to experience more immigration than a society with a

small wage gap (Jennissen, 2007). Implicitly, it is assumed that there is a negative correlation between the level of development and international migration and that the higher the opportunities and relative wage levels at home, the less likely people are to seek their wealth elsewhere (Benería et al., 2012). However, recent studies reveal that the poorest households do not send migrants abroad, but rather international migrants are predominantly from relatively better-off segments of the population of origin (Rao and Presenti 2012; Czaika, 2012; Mahendra, 2014; De Haas et al., 2019). Moreover, although income gaps between rich and poor countries generate incentives for international migration, the fact that most people do not migrate despite much higher income abroad indicates that this is not a sufficient condition (Taylor, 2006).

Socio-demographic dimension: Historical perspectives point out that migration has been a normal aspect of social life and specifically of social change throughout history (Cohen, 1995). In many developed countries, international migration is a major driving force of demographic growth and generally accounts for more than half of the population change (Lee, 2011). As movements for professional development, marriage, retirement, or lifestyle gain more significance, prior views about immigration are no longer considered valid (Castles, 2010). There is a broad consensus in the migration literature that age has a robust impact on migration. Whereas the younger age group is considered to be more mobile, a substantial decline is experienced in planned migration over the age of 40 (Krieger and Maitre, 2006). One of the first manifestations of globalisation was the development of an international labour market for a highly educated, skilled workforce (Benería et al., 2012). Based on the human capital theory, higher education levels offer higher income returns in certain segments of the labour market. It is also suggested that higher education levels provide more capability to collect and process information, which reduces risk and hence increases migration propensity (Krieger and Maitre, 2006).

The majority of the early literature on international migration has centred on 'brain drain' (Benería et al., 2012). Esipova, et al., (2011) stated that citizens with secondary education - at least - have a higher tendency to migrate compared to those with lesser educational level. The international migration of people with higher educational levels is a major and controversial phenomenon (Fargues, 2017). South-North migrations are much greater regarding the highly educated and highly skilled people, and most of the skilled people travel from developing countries to OECD countries. The

large-scale and rapid rate of the highly educated South-North movement results from the proactive and selective migration policies of the OECD countries (Gamlen, 2010). For Easterly and Levine (2001), this situation leads to a substantial transfer of educated and human capital from developing countries to developed countries.

Environmental dimension: The drought that was experienced in the USA in the 1930s, the Tsunami that occurred in Indonesia in 2004, and the droughts in Burkina Faso and Sudan between 1968 and 1973 displaced thousands of people (Marchiori and Schumacher, 2011). Although Kane (1995) suggests that research on migration and environmental change has conventionally investigated displacement and refugee flows, a vast body of research has also been performed on the environmental causes of global urbanisation, climate change and migration in Oceania, drought, and responses of human to changing environmental conditions (Davis and Lopez-Carr, 2010). Moreover, it can be inferred from the previous studies that irreversible or prolonged problems such as desertification or persistent environmental degradation also drive permanent migrations. Potential and predicted effects of climate change include loss of lands due to the rise in the sea levels, loss of biodiversity, declines in productivity, warmer-drier climates, or wetter regions (Marchiori and Schumacher, 2011).

Political dimension; local disruption of socio-economic balances (De Tapia, 2003), situations of vulnerability, insecurity, and endangerment sometimes massively affect immigrant populations or populations likely to migrate. Such that, Stalker (1994) stated that each year one million people constantly migrate while another one million people seek political asylum. Whereas, during most of the post-WWII era, refugees made up less than 10 %of the global migrant population (Fransen and De Haas 2019; Hatton 2009). More than 80 %of all refugees currently reside in developing countries (specifically Turkey, Uganda, Pakistan, Lebanon, and Iran), and this share has increased rather than decreased over the past decade (De Haas et al., 2019).

The majority of the international migration theories make use of social, economic, and/or political factors to explain migration (Cohen et al., 2008). Reasons, which are based mostly on migration distance, length of stay, economic conditions, administrative status, family relations and social networks, and personal characteristics of immigrants, ethnic identities, gender, and the like, are analysed in three groups with the help of micro, medium and macro theories. While micro-level theories centre on individual migration decisions,

macro-level theories indicate trends by looking at collective migration tendencies. On the other hand, meso-level theories, which are between micro and macro levels, explain both the reasons for migration at the household or community level and the continuation of migration (Hagen-Zanker, 2008).

2) Methodological Approach

Comparable international migration data inform policymakers, the media, and academics about the level and direction of population movements and allows hypotheses to be tested about the determinants and patterns of people's movements (Abel, 2018). A comprehensive data set is needed to determine the factors impacting migration and to establish models suitable for predictions.

In order to prepare the required data set within the scope of the study, the studies in the relevant scientific literature were examined in the context of its indicators and variables. The indicators used in the studies were classified within the scope of economic, socio-demographic and environmental dimensions; variables that the most used and changed over time were determined. In migration studies, the variables of income level (GDP) and labour force are the most used variables in the economic dimension from the past to the present. Innovation and technology indicators, which include variables related to R&D, patents and human capital, are variables that have changed from past to present and are frequently used in today's migration studies. When the indicators at the socio-demographic dimension are examined, demographic structure (population) and education (tertiary education level) indicators come to the fore. In addition, variables that question people's happiness in the context of quality of life, especially the place of women in social life, have started to take place in the social dimension in today's research. In the environmental dimension, the climate change indicator, which consists of variables such as CO2 emission, nutrition, hunger, temperature change, is among the most used indicators in researches. In the environmental dimension, variables within the scope of renewable energy have started to be used in recent migration studies. (Table 1)

The dataset developed in this study is based on socio-demographic, economic, and environmental development indicators, which were obtained from official websites of OECD, World Bank, and STAT that shape 'policies promoting equality, opportunity and prosperity for all' (URL-1, URL-2, URL-3). In this context, variables that represent different dimensions of international migration, question different dimensions of its causality and fill the gaps in the past were selected. In addition

to the international migration literature, the availability of comparable data in OECD countries has been effective in determining variables.

	Indicators	References
Economic	**Income Level – Economic Resource** GDP, per capita GDP, Foreign capital inflow, per capita expenditure, poverty rate	Harris and Todaro, (1970), Greenwood, (1985), Gould (1994), Boyer, (1997), Erzan et al. (2004), Cattaneo, (2005), McKenzie et al. (2006), Bertocchi and Strozzi, (2008), Kapur and Mchale. (2009), Polgreen and Simpson, (2010), Davis and Lopez-Carr. (2010), D'Albis et al. (2019)
	Employment Structure / Labour Force Employment, unemployment rate, full-time and part-time female employment, highly educated (skilled) workforce	Piore (1979), Boyer (1997), Greenwood (1985), Milne (1993), Bauer and Zimmermann (1998), Fotheringham et al. (2004), Docquier and Marfouk (2006), De Haas (2010), Lundmark et al. (2014), D'Albis et al. (2019)
	Innovation and Technology High-tech industries, Openness to trade, R&D, Patent, Human capital, skilled migrants	Gheasi and Nijkamp (2017), Bahar et al. (2018) Fassio et al. (2019), D'Ambrosio et al. (2019)
Socio-Demographic	**Demographic Structure** Population, Age groups factor, Gender, Fertility, Mortality	Greenwood, (1985), Plane (1992), Piper (2006), Bertocchi and Strozzi, (2008), Davis and Lopez-Carr. (2010), Vollset et a. (2020)
	Education Level Educational attainment, Adult education level, Population with tertiary education, Highly educated women	Piore (1979), Greenwood (1985), Hare (1999), Dumont et al. (2007), Rao (2010), De Haas (2010), Benería et al. (2012), Finch and Kim (2012), Anthias et al. (2020)
	Life Quality Happiness, High living standards	De Haas (2010), Polgreen and Simpson, (2010)
	Real Estate Real house Price / m2 Social Housing Supply	D'Albis et al. (2019)
	Health diseases	Greenwood (1985), Carballo and Mboup (2005), Kristiansen et al. (2007), Rechel et al. (2013).
	Immigration Laws and Reforms Political rights, illegal immigration	Bertocchi and Strozzi (2005), Ortega and Peri (2009), Kuusisto-Arponen and Gilmartin (2015).
Environment	**Climate Change** CO2 Emission, Nutrition, Hunger, Temperature change, energy supply etc.	Hugo (1996), Afolayan and Adelekan (1999), Fotheringham et al. (2004), McLeman (2006), Chen et al. (2007), Marchiori and Schumacher (2009)

Table 1: Indicators and variables used in migration literature.

The set of indicators affecting immigration (Independent variables) is composed of social, economic, and environmental factors/themes that serve to 'establish international norms and find evidence-based solutions to various social, economic and environmental challenges, which is the primary objective of the OECD. A data set with 12 indicators and 79 variables, which can

represent a range of immigrant integration indicators in the domains under these 3 main factors including, employment, education and skills, social inclusion, citizenship participation, social compliance at the national level, etc. has been defined.

- The set of social factors consists of demographic structure, education, mobility/migration, health and social structure indicators, which represent social life conditions,
- While the set of economic factors include economic resources, innovation and technology, labour force, and social assistance indicators that basically aim for effective national and international growth,
- And the set of environmental factors that form the basis of the human-nature balance consists of energy and pollution indicators. While specifying the variables defined under each indicator, variables that had been used in studies on migration in national and international literature were utilised (Table 2).

Factors	Indicators	Variables	Data Year
Dependent Variables(1)	International Migration(1)	International migrant stock (% of population)	2019
Social Factors (29)	Demographic Structure (6)	Fertility rates, (Total, Children/woman)	2015
		National population distribution, Rural and regions, (%)	2014
		National population distribution, Urban regions, (%)	2014
		Population, Annual growth rate (%)	2012
		Urban population by city size, (Metropolitan areas,%)	2014
		Working age population, (% of population)	2012
	Education (11)	Adult education level - Below upper secondary / Tertiary / Upper Secondary, (% of 25-64 year-olds)	2017
		Educational attainment, at least Bachelor's or equivalent, population 25+, female (%)	2016
		Educational attainment, at least Bachelor's or equivalent, population 25+, male (%)	2016
		Educational attainment, at least Master's or equivalent, population 25+, female (%)	2016
		Educational attainment, at least Master's or equivalent, population 25+, male (%)	2016
		Educational attainment, Doctoral or equivalent, population 25+, female (%)	2016
		Educational attainment, Doctoral or equivalent, population 25+, male (%)	2016
		Education spending, Tertiary / Early childhood education, (% of GDP)	2014
		International student mobility, Tertiary student inflow, (% of students enrolled)	2016
		Population with tertiary education, 25-34 year-olds, (% in same age group)	2017
		Population with tertiary education, 55-64 year-olds, (% in same age group)	2017
	Health (6)	Doctors, (Per 1000 inhabitants)	2016
		Health spending, (% of GDP)	2017
		Health spending, (US dollars/capita)	2017
		Hospital beds, (Per 1000 inhabitants)	2015
		Infant mortality rates, (Deaths/1000 live births)	2015
		Life expectancy at birth, (Years)	2015
	Social Structure (2)	Violence against women, Attitudes towards violence, (%)	2014
		Women in politics, Women parliamentarians, (%)	2014

*The most recent measurement values of the determined variables were used in the study.
** The number of variables representing the social, economic and environmental context are summarised in brackets under the names of indicators and factors.

Table 2: The factors that affect international migration

Factors	Indicators	Variables	Data Year
Dependent Variables(1)	International Migration(1)	International migrant stock (% of population)	2019
	Mobility (4)	Net migration	2017
		Outflows of foreign population by nationality	2017
		Permanent immigrant inflows, (Number)	2016
		Stocks of foreign-born population in OECD countries, (Number)	2015
Economic Factors (44)	Innovation and Technology (7)	Gross domestic spending on R&D, (% of GDP)	2015
		ICT goods exports, (Million US dollars)	2012
		Industrial production, (Total)	2018
		Internet Access, (% of all households)	2017
		Mobile broadband subscriptions, (Per 100 inhabitants)	2018
		Self-employed with employees, Men, (% of employment)	2017
		Self-employed with employees, Women, (% of employment)	2017
	Economic Resource (15)	Foreign Direct Investment (FDI) stock, Inward, (% of GDP)	2017
		Foreign Direct Investment (FDI) stock, Outward, (% of GDP)	2017
		General government revenue, (% of GDP)	2015
		Gross domestic product (GDP), (US dollars/capita)	2017
		Household debt, (% of net disposable income)	2015
		Household spending, (% of GDP)	2015
		Income inequality, Gini, coefficient, (0=complete equality; 1=complete inequality)	2014
		Inflation (CPI), Annual growth rate (%)	2018
		Poverty rate, (Ratio)	2015
		Purchasing power parities (PPP), (National currency units/US dollar)	2017
		Social spending, (% of GDP)	2015
		Tax revenue, (% of GDP)	2016
		Trade in goods and services, Exports, (% of GDP)	2017
		Trade in goods and services, Imports, (% of GDP)	2017
		Total official and private flows, (Million US dollars)	2017

Table 2: Continued

Factors	Indicators	Variables	Data Year
Dependent Variables(1)	International Migration(1)	International migrant stock (% of population)	2019
	Labour Force (17)	Employment by activity, Agriculture, (Thousand persons)	2017
		Employment by activity, Construction, (Thousand persons)	2017
		Employment by activity, Industry including construction, (Thousand persons)	2017
		Employment by activity, Manufacturing, (Thousand persons)	2017
		Employment by activity, Services, (Thousand persons)	2017
		Employment by education level, Tertiary, (% of 25-64 year-olds)	2017
		Employment rate, Total, (% of working age population)	2017
		Employment rate, Women, (% of working age population)	2017
		Employment rate by age group, 15-24 year-olds, (% in same age group)	2017
		Employment rate by age group, 25-54 year-olds, (% in same age group)	2017
		Employment rate by age group 55-64 year-olds, (% in same age group)	2017
		Labour force, (Thousand persons)	2017
		Labour force participation rate, 15-64 year-olds, (% in same age group)	2017
		Part-time employment rate, (% of employment)	2017
		Unemployment rate, Total, (% of labour force)	2017
		Unemployment rates by education level, Tertiary, (% of 25-64 year-olds)	2017
		Youth unemployment rate, (% of youth labour force)	2017
	Social Help (5)	Gross pension replacement rates, Men, (% of pre-retirement earnings)	2016
		Gross pension replacement rates, Women, (% of pre-retirement earnings)	2016
		Net pension replacement rates, Men, (% of pre-retirement earnings)	2016
		Net pension replacement rates, Women, (% of pre-retirement earnings)	2016
		Public unemployment spending, (% of GDP)	2014
Environmental Factors (5)	Energy (3)	Electricity generation, (Gigawatt-hours)	2016
		Primary energy supply, (Toe/1 000 US dollars)	2016
		Renewable energy, (% of primary energy supply)	2016
	Pollution (2)	Air and GHG emissions, Carbon dioxide (CO2), (Tonnes/capita)	2016
		Air and GHG emissions, Greenhouse gas (GHG), (Tonnes/capita)	2016

Table 2: Continued

3) Results

a) Methods

Correlation and regression analyses were used in the study that aimed to examine the causality of international migration in economic, socio-demographic, and environmental contexts. "Correlation quantifies the strength of the linear relationship between a pair of variables, whereas regression expresses the relationship in the form of an equation" (Bewick et al., 2003). The reasons impacting the international migration of OECD countries have been revealed as a result of the analysis, which was performed with the most up-to-date data on the variables. In order to determine the correlation between the dependent variable, namely 'International Migrant Stock', and the standardised data, correlation and regression analyses were performed via the software of SPSS 25.0. Correlation and regression analysis results of the dependent variable are presented in the following section (Table 3-4).

b) Factors Impacting International Migrant Stock

Significant correlations were determined between the variables of all three-factor groups as a result of the correlation analysis, which was performed with the dependent variable of international migrant stock and the variables considered in socio-demographic, economic, and environmental perspectives. That is to say, it was detected as a result of the analysis that there was a significant correlation between the dependent variable of 'international migrant stock' and 5 socio-demographic, 12 economic structure variables, and 2 environmental factor variables. It also has significant correlations with a total of 5 variables of 'demographic structure', 'education', and 'health' indicators, which represent social factors. Upon assessing the correlations, specifically regarding the economic factors, it is noticed that 12 variables representing 'innovation and technology', 'economic resources', and 'labour force' factors have a strong linear correlation with the dependent variable. Furthermore, the dependent variable manifests a significant correlation with the 2 variables of the 'pollution' indicator in the 'environmental factors' cluster. It was determined that of the 19 variables, which have a significant correlation with the dependent variable, the variables 'International student mobility, tertiary student inflow (r=,824)' and 'gross domestic product (GDP) (r=,726)', which identifies the economic resources, has the highest degree of same directional (positive) significance. Also, the economic resource variables 'foreign direct investment stock, Inward (r=-,388) and household spending, (%of GDP) (r=-,386)', and of the labour variables, 'employment by activity, and agriculture (r=-,380)'

variables are negatively correlated with the dependent variable (Table 3).

Factors	Indicators	Variables	International migrant stock
Social Factors (5/29)	Demographic structure (1/6)	Population, Total, Annual growth rate	**,551****
	Education (2/11)	International student mobility, Tertiary student inflow	**,824****
		Population with tertiary education, 55-64 year-olds	,482**
	Health (2/6)	Health spending (US dollars/capita)	,537**
		Life expectancy at birth	,441**
Economic Factors (12/44)	Innovation and Technology (1/7)	Internet Access	,406*
	Economic Resource (7/15)	Gross domestic product (GDP)	**,726****
		Foreign Direct Investment (FDI) stock, Outward	,546**
		Household debt	,432*
		Trade in goods and services, Exports	,372*
		Trade in goods and services, Imports	,338*
		Household spending	-,386*
		Foreign Direct Investment (FDI) stock, Inward	-,388*
	Labour Force (4/17)	Part-time employment rate	,373*
		Employment rate, Women	,361*
		Labour force participation rate, 15-64 year-olds	,333*
		Employment by activity, Agriculture	-,380*
Environmental Factors (2/5)	Pollution (2)	Air and GHG emissions, Greenhouse gas (GHG)	,494**
		Air and GHG emissions, Carbon dioxide (CO2)	,437**

* Significant variables are included in the table, and the statistical significance levels are shown with the correlation coefficients

Table 3: Significant statistical relationships between 'International migrant stock' variable and indicators.

c) Causality of International Migration

A significant regression model, which accounts for the international migration stock dependent variable at 99%, was obtained, based on the regression analysis model of the dependent variable of 'international migration stock' related to socio-demographic, economic, and environmental variables (R=.998) (F: 219,350 and $p<0.01$). Based on the results of the

coefficients table, it can be seen that the variables of 'women in politics, women parliamentarians', 'international student mobility, tertiary student inflow' and 'income inequality, Gini' have individual significance in accounting for the 'international immigration stock' ($p<0.05$). Based on the Beta (B) values, it is seen that the variable of 'income inequality, Gini' is relatively the most significant independent variable. Whereas 'the ratio of female deputies' and 'international student mobility' positively affect the international migration stock variable, the 'Gini coefficient', which is the best indicator of income inequality, negatively affects the international migration stock (Table 4).

	Model	B	Std. Hata	β (Beta)	t	p
3	(Constant)	4,647	1,474		3,153	,034
	Women in politics, Women parliamentarians, (%)	,368	,012	1,100	30,814	,000
	International student mobility, Tertiary student inflow, (% of students enrolled)	,562	,042	,708	13,219	,000
	Income inequality, Gini	-28,247	5,537	-,263	-5,102	,007
$R=.998$; $R^2=.996$; Adj. $R^2=,993$; Model F = 330,569; $p<0,01$						

Table 4: Regression analysis findings of factors affecting international migration stock.

$$\mathbf{Y= 4,647+ 0,368X_1 + 0,562X_2 - 28,247X_3}$$

Y= International migrant stock (% of population)
X_1= Women in politics, Women parliamentarians (%)
X_2 = International student mobility, Tertiary student inflow, % of students enrolled
X_3 = Income inequality, Gini

Conclusion

The movement of international migrants, who accounts for nearly 3.5% of the global population currently, from developing countries to developed countries, reflects the fact to a great extent. The latest trends have shown that globalising migration movements substantially affect more than one country at the same time, and particularly the first decade of the new millennium has witnessed increased international migration towards OECD countries.

It is a fact that from the past to the present, economic factors between countries such as income level, labour force disparities, development level has shaped migration movements, costs, and decisions. Albeit economic inequalities are not adequate for the occurrence of international migration and in explaining the causality, yet alternative explanations are needed. Recently, the globalised labour market, changing gender roles, environmental factors, and factors causing forced migration have been remarkable in determining migration flows and their causes.

It is aimed at the study, which has been performed within the scope of OECD countries, to reveal the reasons impacting international migration. It aims to convey the multi-dimensional and up-to-date discussion on the socio-demographic, economic, and environmental dimensions of the phenomenon of international migration, which is increasingly shaped by globalisation. The results of the analysis conducted in line with these objectives are as follows;

When the results of the 'International migrant stock' analysis are assessed in general, it can be stated that a strong correlation between international student mobility and external migration stock might be due to the increased interest of developed countries in the opportunities that were offered to international students in recent years. This strong positive correlation is in line with the effects of globalisation on migration in recent years. The strong and positive correlation with GDP, one of the variables of economic resource factors, and the negative correlation with foreign capital inflow and household expenditure variables support the economic context of the international migration literature. Also, there is a significant relationship between the female employment rate and the International migrant stock variable. The fact that there is only a negative and moderate correlation with the employment variable in the agricultural sector, on a sectoral basis, demonstrates that migration is not preferred to countries whose main sector is agriculture. This finding corroborates the facts and priorities of today's world. On the other hand, the significant positive correlations with 'Air and greenhouse gas emissions CO2' as well as 'Air and greenhouse gas emissions Greenhouse Gas' variables, which are among the indicators of the Environmental Dimension, support the view, which has been revealed in the literature, that millions of people might have to leave their places due to environmental problems.

According to the established model, which was generated based on the results of the regression analysis, it can be suggested that if the ratio of women MPs and international

student mobility in a country is higher and the Gini coefficient is lower, that country has a higher potential to attract international migration stock. The fact that the international migration stock can be explained with 3 primary factors is also corroborated by the statements in the literature section.

As a result, the phenomenon of international migration, which has many positive and negative effects on countries, should be included in the urbanisation debates of the globalising world and analysed as a part of social change processes. Instead of preventing this phenomenon that connects the nations of the world, effective and efficient migration policies specific to time and place should be developed by determining the main causes of migration, migrant profiles and information gaps on international migration.

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