

Effects of Central Government Expenditures on Internal Migration: The Case of Turkey*

Efectos de los gastos del gobierno central en la migración interna: el caso de Turquía

Zeynep Karal Önder
Anadolu University, Eskisehir, Turkey

Recibido, Diciembre de 2021; Versión final aceptada, Marzo de 2023

PALABRAS CLAVES: Política pública, Migración, Migración interna, Gastos del gobierno central, Clasificación del presupuesto funcional, Modelo de gravedad, Muchos niveles de efectos fijos, Turquía

KEYWORDS: Public Policy, Migration, Internal Migration, Central Government Expenditures, Functional Budget Classification, Gravity Model, Many Levels of Fixed Effects, Turkey

Clasificación JEL: H 50 , O15, R23

ABSTRACT

Each year, approximately 2,5 million people in Turkey migrate from one place to another. Examining the relationship between internal migration and public policies, this study aims to demonstrate which of the public policies have an effect on the mass that moves within Turkey every year. The relationship between internal migration and central government expenditures is estimated using the gravity model of migration with many levels of fixed effects for the period 2008 to 2017. Data used in this analysis came from the General Administration Financial Statistics and the Address-Based Population Registration System for the period 2014-2017. The study findings show that internal migration in Turkey has a positive relation with population and a negative relationship with distance. The presence of a relative in migrated city has a positive effect on migration. In terms of the functional classification of public expenditures, education expenditures have the largest and most positive effect on internal migration.

RESUMEN

Cada año, aproximadamente 2,5 millones de personas en Turquía migran de un lugar a otro. Al examinar la relación entre la migración interna y las políticas públicas,

* This study was extracted from the doctoral thesis titled "The relations between internal migration and public policy in Turkey" completed by Zeynep Karal Önder under the supervision of Prof. Dr. Nezih Varcan at the Department of Public Finance of the Anadolu University Institute of Social Sciences.

este estudio tiene como objetivo demostrar cuáles de las políticas públicas tienen efecto en la masa que se mueve dentro de Turquía cada año. La relación entre la migración interna y los gastos del gobierno central se estima mediante el modelo de gravedad de la migración con muchos niveles de efectos fijos para el período de 2008 a 2017. Los datos utilizados en este análisis provienen de las Estadísticas Financieras de la Administración General y el Sistema de Registro de Población Basado en Direcciones para el período de 2014-2017. Los hallazgos del estudio muestran que la migración interna en Turquía tiene una relación positiva con la población y una relación negativa con la distancia. La presencia de un familiar en la ciudad migrada tiene un efecto positivo en la migración. En cuanto a la clasificación funcional del gasto público, el gasto en educación tiene el mayor y más positivo efecto sobre la migración interna.

1. INTRODUCTION

Each year, approximately 2,5 million people in Turkey migrate from one place to another. With the aim of revealing this relationship between internal migration and public policies, this study aims to demonstrate which of the public policies are influential in the mass that moves within Turkey every year and what types of expenditure play a vital role in the migration potential of a given city. As of 2008, the migrating population in Turkey has increased steadily and constituted roughly 3%-3,5% of the general population. A comparison between Turkey and other countries indicated that the internal migration rate in Turkey is remarkably above the proportion by general population (Bell & Charles-Edwards, 2014, s. 8). This population is larger than the population of some of the medium-sized European countries. Various studies have shown that the cost of this migration is very high in Turkey. (TÜRKONFED, 2018). In a Thailand-based research for 2016, per person cost of potential migration on society is, at best estimates, 0.3 to 1.1 of average annual income and around 2,5 at worst (Shenoy, 2016, s. 29). In a relevant study on Bangladesh, identical findings were attested and it was concluded that migration cost of low-income level individuals failed to match expected financial gains to attain after migration (Hossain, Khan, & Seeley, 2003, s. 22). It should be kept in mind that displacement of population, namely migration, does not necessarily trigger adverse results or extra costs on society. What matters most at this point is effective management and orientation of such a large population in the migration process.

Political and social affairs are equally influential on internal migration, and in certain cases social affairs are even more influential. Hence, in relation

to spatial distribution of population; next to directly effective policies such as preventing unemployment and creating employment to improve financial situation of persons, it is also suggested to apply welfare-boosting policies. This study that draws a city-based analysis in Turkey that has a high migration potential is distinguished from relevant literature studies because of two aspects. The first aspect is that this study is a trailblazer, since it is one of the few researches that draws a direct analysis on the way migration influx and efflux potential of cities are affected by public expenditures. The second distinguishing aspect stems from the method applied in the analysis. Within the scope of this study, the gravity model has been predicted by utilising a multidimensional linear regression estimator.

2. INTERNAL MIGRATION AND LIMITS OF PUBLIC POLICY

To secure optimal welfare, a state is expected to control population movements. To exemplify these policies; wage differentiations, housing policies, incentives, infrastructure investments, and regional development policies can be listed (Tekeli, 1975, s. 156-157).

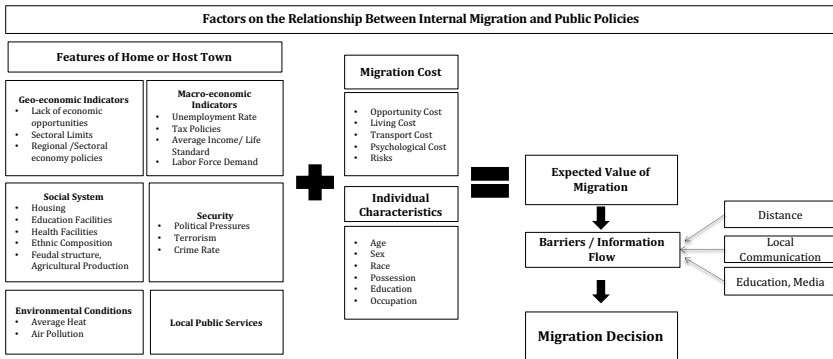
Raverstein (1885) argues that migration, on its own, cannot be the sole objective (Çağlayan, 2006, s. 70). The most significant contribution of this study to current migration public intervention debates is its emphasis on providing a policy definition for the main goals of migrating persons and its emphasis on the fact that migration is not only a gradually progressing movement, but also a never ending process. On that account, it is suggested to analyse internal migration and public policies relationship from two perspectives. The relationship of internal migration with public policy depends on the causes of migration and the effect of internal migration on the effect of public policies. It is wise to keep in mind that every migratory movement has its unique structure; hence, it is infeasible to explain migration by merely taking certain factors into account (Lee, 1966, s. 50).

In Figure 1, as compiled from various resources, there is a figurative outline that illustrates effective factors in the relationship between internal migration and public policies.

Reasons fuelling the idea of migration are economic indicators and economic factors are classified below two main categories, the first of which is geo-economic indicators and the second is macroeconomic indicators. Theoretically,

these variables stem from dual development models (Lewis, 1954). Factors that are classified as social systems include all types of variables of geography and social structure. In classifying main reasons behind the migration idea, the security heading was not listed within the social system but categorised under a different heading. That is because, as is common in literature studies too, security service as one of the main public services has a stronger dominant effect on migration decision compared to other public services.

FIGURE 1
FACTORS ON THE RELATIONSHIP BETWEEN INTERNAL MIGRATION AND PUBLIC POLICIES



Source: (Tekeli, 1975) (Raverstein, 1885) (Çağlayan, 2006) (Çağlayan, 2006) (Tiebout, 1956) (Tiebout, 1956) (Filiztekin & Gökhan, 2008) (Byerlee, 1974) (Stouffer, 1960) (Sjaastad, 1962)

Local public services are among the main reasons behind the migration idea. Local governments, within the framework of their authority, are capable of directly or indirectly interfering with individuals' life; hence migration decision is predominantly influenced by local governments (Tiebout, 1956, s. 420) (Cebula, 1978, s. 705).

Sjaastad (1962, p. 93) states that migration as a resource allocation problem should be evaluated according to the costs and returns arising in different situations. The relationship between private and social costs of migration emphasises that it depends on market structure, resource mobility, and the revenue policies of public and local governments. Zimmermann & Bauer (2002) suggested that within the framework of utility cost analysis, if the cost of return to home place is higher than the current cost of utilities to

obtain upon departure, migration movement would not take place; hence, management of migration movement should be executed by public authority within the framework of this utility cost analysis (Filiztekin & Gökhan, 2008).

The migration planning process consists of 'barriers and information flow' and determines whether the expected value of migration would result in a migration decision (Byerlee, 1974, s. 553). Barriers could be geographical and physical and could also be bans or restrictions enforced directly by a public authority; thus, barriers play a vital role in the planning of migration process. The information flow entails three main components. Distance to the planned town to migrate, and easy access and analysis of all the information required to access this town by people are the first component. Aside from distance, evaluate superiority of opportunities and migrant density are in a region as two salient variables to explain migration activity (Stouffer, 1960, s. 18). Finally, the information flow that a person obtains from outside world before and after considering migration is influential on migration decision. Barriers and information flow are under direct internal migration and limits of public policy

An effective factor in the relationship between internal migration and public policies is the public policy limit (Riew, 1973) (Giuranno & Biswas, 2015) (Maddox, 1960). Public choice theoretician Buchanan attested that differences in economic system unearthed migration movement and the reason for difference across regions is because required qualified labour and capital are not equally allocated in every region. Buchanan maintains that interregional differences would tend to decrease when relatively abundant resources in the region are moved outside and relatively scarce resources are moved inside (Buchanan, 1952a, s. 209). According to public choice school, any policy to enforce in the provision of public goods needs to be pareto-optimal transfer, and these policies entertain three alternatives. In the first alternative, transfer must not take place between individuals, but in common-use areas of individuals. Second, transfers should not take place directly but specifically. In the event of using direct transfer mechanism, even if everyone in society pays identical tax/price for public goods, financial surplus due to direct transfer would continue to cause population movements. Hence, resource allocation would tend to have a "resource diversion" trend rather than a "resource correction". Therefore, transfers should be implemented in a way to specifically affect tax price of provided public goods (Buchanan & Wagner, 1970, s. 155-156)(Buchanan, 1952a, s. 212)

(Buchanan, 1952b, s. 537). The third policy proposition is conditional equalising. Conditional equalising is analysed under four headings; transportation, education, social services, and unemployment relief, and as also argued by public choice school, it entails public goods that the state must offer in the market. In transportation heading, offering a relatively better highway system to low-income regions (home regions) could have some effect on geographical mobility of human resources, and even though at first it appears to lead human mobility in these regions towards outside, this is quite a negligible and insignificant effect. This is because better transportation flows capital towards migration sending regions and eventually be effective in changing inhabitants' minds and could motivate them to stay in their residential area (Buchanan, 1952a, s. 212). Improvement in educational standards similarly fuels a major resource correction impact in these regions. Social services, on the other hand, could form a region that has a more effective labour force. For example, health benefits offered within the scope of social services are more functional in nonproductive groups like the elderly, yet if these group members belong to partially productive or fully productive labour families, they would have some effect in resource allocation. Social service funds promote protecting the labour in sending regions; transportation, education, and relevant income-transfer funds tend to shift capital investments to sending regions with a low-income level (Buchanan, 1952b, s. 537). However, as a conditional equalising policy, unemployment reliefs would create a direct 'resource diversion' effect because a direct resource allocation would lead rationally acting individuals no longer to produce. As a result, considering that labour force is homogenous and employees possess equal capacities to start several professional categories, regional differences in income levels could be eliminated in the long term through resource allocation and migration be put under control (Buchanan, 1952a, s. 213).

3. RELATIONSHIP BETWEEN INTERNAL MIGRATION AND CENTRAL GOVERNMENT EXPENDITURES IN TURKEY

Central governments in Turkey came up with various policies to manage migration, but migration policies were always left behind the shadow of policies enacted to reach economic goals. Policy makers mostly developed legislation to solve the problems induced by irregular/uncontrolled internal

migration or in a different saying their policies mostly focused on the effects of migration. However, in reality, internal migration is not a problem for any society. What makes it a problem stems from the unbalanced spatial distribution of a population which relates to irregular/uncontrolled and unmanaged migrations. Therefore, policy makers are expected to develop the kind of policies that can alleviate the negative effects of migration that emerges after social and economic transformation and unite its positive effects with society (Kisacık, 2012, s. 94). In Turkey there are no policies founded on migration hypotheses. That is a why there is need for short- and long-term policies in Turkey to control migration. For the last 5 years, the rural-urban distribution displayed a stable ratio in Turkey of 90% in urban areas and 10% in rural areas. In Turkey the steady process of urban-rural distribution is due to first; during this period, migration moved from city to city and, as a second reason, with the use of address-based registration system, demographics could be monitored more functionally. The third and most important reason is, as seen among many developing countries, shuttle migration became an inherent part of life in societies with a certain economic size and with central cities.

The main objective of this study is to reveal which components of public expenditure groups are more effective on internal migration. It is improbable to arrive at conclusive results on migration and expenditure relationships by only examining total public expenditures. Although public expenditure share is lower than other cities, people still go for net receiving regions; hence it is wise to analyse components of public expenditures. Thus, an analysis of public expenditure subcomponents and their relationship with migration would be helpful in attaining more meaningful results.

4. PUBLIC EXPENDITURE AND MIGRATION RELATIONSHIP IN TURKEY

4.1. *Empirical Literature on Internal Migration and Central Government Policies*

The first studies that examined the relationship between public expenditures and internal migration focused on unemployment, wages, employment, and economic differences, as the literature developed, education, health, environment, and similar factors were also included in the analysis. Studies in countries other than Turkey focused mainly on local public policies. Since

there are limited data on local governments in Turkey, there are few relevant studies.

In this study, with the data presented in the literature, six hypotheses have been determined. These hypotheses and their empirical evidence will be discussed in turn.

Studies in the empirical literature have been carried out within the scope of the gravity model with the determination of push-and-pull factors. The basic migration attraction model in the literature consists of population and distance. Estimates of the basic migration attraction model in the literature have been estimated with many different variables such as age, occupation, education, income differences, unemployment rate, security, kinship, city attraction indices, social networks, schooling rate, number of hospitals. (Bindak, 2015, p. 118 ; Msigwa & Bwana, 2014 ; Filiztekin & Gökhan, 2008 ; Gökhan, 2008 ; 2008). The hypothesis that first emerged within the scope of the migration attraction model is that internal migration will decrease as distance increases, as well as increase as population increases (**H1**). There are also studies in the literature that show that the relationship between distance and migration works in reverse for Turkey (Gedik, 1997).

Another variable that is frequently used in the migration attraction model is employment, unemployment, or income level. In this study, as the second hypothesis, it was determined that the positive course of the labour force indicators would reduce internal migration (**H2**). In a study conducted in Canada between 1974-1996, unemployment proved its effect on internal migration and revealed that it had a stronger effect than other factors (Day & Winer, 2006, p. 560). In other studies, conducted in Turkey, it was concluded that the increase in the number of labour force had a positive effect on interurban migration, but not every study found a significant relationship between income level and internal migration (Çelik 2006; Doğan 2010; Dökmeci & Korkmaz, 2007, p. 31). In this context, we expect the estimates made for the incentive model and the economic functional classification to test this hypothesis.

Another hypothesis is that social and economic factors have an impact on internal migration (**H3**). There are many studies in the literature that focus on this issue. The common output of these studies is that the policies implemented are equally affected by social factors as well as economic factors (Cebula, 2005, p. 267; Çelik 2006; Doğan 2010). In this context, not only the functional classification items related to economic expenditures but

also all expenditure items are tested in the model. In this context, another important hypothesis presented by empirical studies in the literature is that having a relative / acquaintance at the place of migration increases the probability of migration (**H4**). This hypothesis is tested with *the rltv* variable in each model. Another variable that has been found to be effective in the direction of internal migration is the ties of the migrating individuals with the region to which they go. The presence of a relative or friend in the region to migrate significantly accelerates the possibility of choosing the region in question (Çiftçi and Şengezer, 2017, p. 146) (Ercilasun, Gencer and Ersin, 2011, p. 323).

In most studies on internal migration, the effects of public policies have been tested, and positive or negative effects have been found. Within the scope of this study, the hypothesis that public policies have an effect on internal migration will also be tested (**H5**). In Topbaş's study (2007), a province-based least squares analysis was performed for the 2000 census, and the main determinants of internal migration were determined as public investments, migration stock, distance, and unemployment. Another study revealed that among the components of the GDP of cities, the type of production with the highest awareness of the migrating population is public services (Çiftçi and Şengezer, 2017, p. 146). In Gezici&Keskin's (2005) study of the relationship between regional inequality and migration dated 1985-2000, contrary to the theory of this study, public investments, number of higher education institutions, literacy rate, number of doctors were presented as social factors that were not statistically significant in internal migration. Between 2001-2015, it was concluded that although the investment incentive rate for the TR33 region increased every year, migration from the region did not stop (Dayar and Sandalçı, 2016). The research examining the relationship between internal migration and internal migration policies in Tanzania is that migration regulatory policies should be developed for nonimmigrants, not for the migrating population (Msigwa & Bwana, 2014, p. 44). Doğan's (2010) study for the period of 1980-2000 in Turkey revealed that the main reasons for internal migration are the level of health services, employment rate in agriculture and industry, public investments, and agricultural mechanisation.

The last hypothesis of this study is related to education and health services. The test will be carried out on the thesis that as education and health expenditures increase, internal migration decreases (**H6**). Different studies conducted between 2009 and 2011 reveal the significant impact of

education and health services on migration (Anavatan, 2017; Abar, 2011; Vila, M. C., López, X. P., & Matés, R. M. V., 2021).

In addition to the hypotheses of this study, another topic that other empirical studies in the literature focus on is the relationship between macroeconomic indicators of countries and internal migration. In the literature, there are studies that conclude that the effect of migration on growth is positive and that interregional inequality can be eliminated by internal migration (Borozan, 2015, p. 20; Munro, 1974). In this context, the driving factors of cities can be used as a development strategy (Gedik, 1997). On the other hand, another study conducted in Turkey showed that as GDP per capita increases at the city level, immigration also increases. (Güleç, 2009; Kocaman, 1998, p. 80; Gedik, 1997; Msigwa&Bwana, 2014, p. 44; Çelik, 2006).

4.2. Descriptive Statistics for Government Expenditure

When we look at the relationship between public expenditures and internal migration between 2008 and 2017, Figure 2 and Figure 3 show the 5 provinces with the highest and lowest net migration in Turkey between 2008 and 2017 and the total public expenditure in these provinces. The highest and lowest provinces are those that ranked in the top five in 2014, 2015 and 2016.

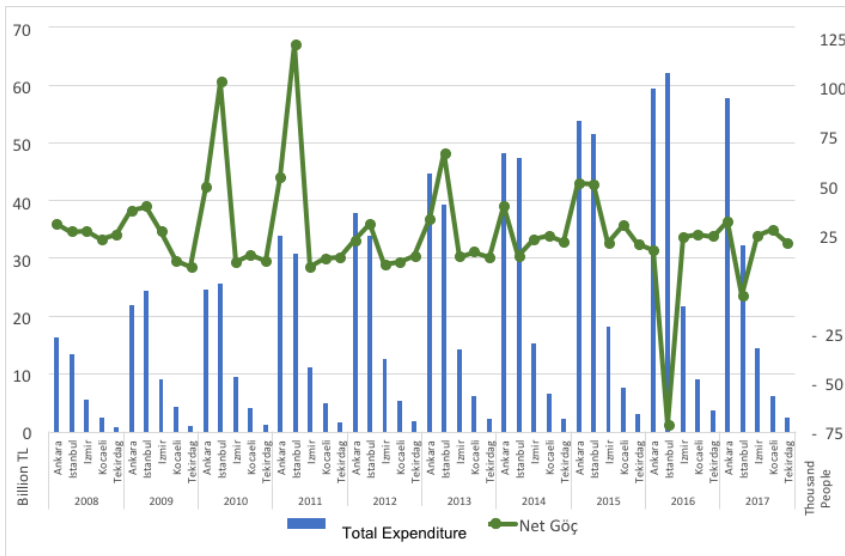
The 5 provinces with the highest net migration in Turkey are Ankara, İstanbul, İzmir, Kocaeli and Tekirdağ. When public expenditures and net migration statistics for these provinces are examined, it is seen that public expenditures showed a steady increase until 2017, while net migration did not change its course except for minor deviations. Although İstanbul was the province with the highest net immigration until 2015, it had negative net immigration in 2016 and 2017. On the other hand, net migration in Kocaeli and Tekirdağ, which are the peripheries of İstanbul, is positive throughout the section.

When the provinces with the lowest net migration in the same time period are examined, it is Diyarbakır, Van, Erzurum, Mardin and Ağrı. Despite the fact that these provinces have fewer and fewer people every year, the increase in public expenditures made every year is seen to continue steadily.

Erzurum was chosen among provinces with low net migration, since Tekirdağ is closer to Turkey's average than other metropolitan cities. When we examine Tekirdağ, one of the provinces with the highest net migration,

while it adds an average of 20,000 people to its population every year, public expenditure per capita has increased from approximately 1,117 TL to 2,359 TL in a 10-year period, and the amount of public expenditure per capita has increased approximately two times. When we examine Erzurum, one of the provinces with the lowest net migration, its population decreases by an average of 10,000 people every year. On the other hand, public expenditure per capita increased from approximately 1.009 TL to 6714 TL, and the amount of public expenditure per capita increased approximately 6.5 times. Even if public expenditures are realised with inflation, the gap does not close. According to this comparison, these expenditures are seen to be ineffective in keeping the population in the region, although public expenditures are driven by a continuous decrease in the population.

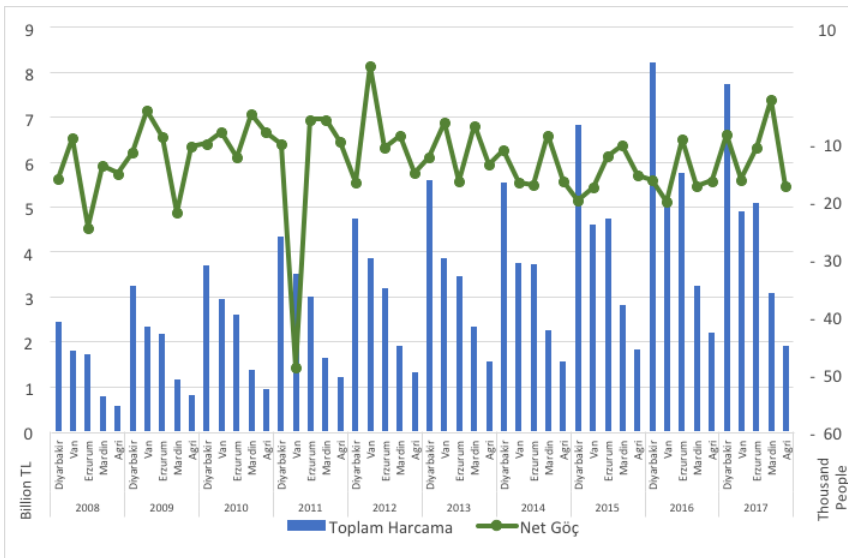
FIGURE 2
BETWEEN 2008 AND 2017, THE FIVE PROVINCES WITH THE HIGHEST NET MIGRATION IN TURKEY AND THE TOTAL PUBLIC EXPENDITURE TO THESE PROVINCES INCREASED



Source: (TUIK, 2018a)

It is not possible to draw definite conclusions about the relationship between migration and expenditure by examining only total public expenditures. Although the share they receive from public expenditures is less than in other provinces, the reason why people prefer regions that receive net immigration should be sought in the components of public expenditures. In this sense, examining the relationship between the subitems of public expenditures and migration will provide more meaningful results. Before this analysis, which is performed with the estimation of the gravity model, these statistics are important in terms of drawing the general picture.

FIGURE 3
**BETWEEN 2008 AND 2017, THE 5 PROVINCES WITH THE
 LOWEST NET MIGRATION IN TURKEY AND THE TOTAL PUBLIC
 EXPENDITURE TO THESE PROVINCES**



Source: (TUİK, 2018a)

4.3. Methodology

Analyses conducted within the scope of this study aim to estimate on macro-level the influential public expenditure types on internal migration in

Turkey. For Turkey, the relationship between internal migration and public expenditures was estimated via the gravity migration model and multidimensional fixed effects estimator.

The definition of migration-gravity model is: ‘The model hypothesises that across-regional migration is directly related with population of target regions and inversely related with the distance in between’ (Greenwood, 2005, s. 725). ‘In 1940s, astronomer Stewart from Princeton University claimed that in university choices of students, Newton’s law of gravity was the valid rule and he formulated the law of gravity as below’ (Greenwood, 2005, s. 727) (Ihlamur-Öner & Şirin Öner, 2012) (Alecke, Huber, & Untiedt, 2001) (Isard, 1960))

$$F = GP_i P_j / D_{ij}^2 \quad (1)$$

F= The Gravity of Demographic Force

G= Constant

P_i= Population of the Home Country

P_j= Population of the Host Country

D_{ij}= Distance between home and host country

In 1946, Zipf (1946, s. 686) verified this base model upon testing via highway, airway, and railway data. The hypothesis of a base model was laid upon wage equalisation. It was suggested that migration movement between two cities or regions would continue until wages were equalised and would stop once wages were on equal levels. Although the base model was proven in migration explanation, migration movement did not end then. Therefore, in subsequent studies, welfare-boosting variables were also added to the model, and an *extended migration-gravity model* was introduced. Income, unemployment rate, urbanisation level, climate, public expenditure, taxes, and other factors were added to the equation and were then examined (Isard, 1960, s. 493)(Dinçer & Muratoğlu, 2015, s. 6) (Bindak, 2015, s. 113).

The gravity model can be estimated via different methods in the literature. Within the scope of this study, gravity model is estimated via multidimensional fixed effects estimator (*linear models with many levels of fixed effects*). The multidimensional fixed effects panel data estimator predicts a synchronous fixed effects model for each dimension (Correia, 2017)(Aytun, 2017). The biggest reason in choosing multidimensional fixed effects estimator is that

in data which does not allow random choice for every dimension, it can estimate fixed effects model singly and allows to cluster the cities that initiate migration (Davidova, 2015) (Bobkavo, 2014).

4.4. Data Sources and Constructions

The relationship between public expenditures and internal migration was analysed using four groups of data.

The first group of data belongs to TURKSTAT Population demographics that included the period of 2008-2017 migration data and address-based population registration system (ADNKS) statistics and migration statistics within the context of Demography Statistics (TÜİK, 2018b) (TÜİK, 2018a). The second data group is annual distance data for 2008-2017 released by the Ministry of Transportation and Substructure, General Directorate of Highways to show the distance between cities (KGM, 2018). The third data group is the Ministry of Commerce Investment Incentive Statistics (Ticaret Bakanlığı, 2018). The fourth group is the General Administration Financial Statistics of the Ministry of Treasury and Finance. Therefore, the budget expenditure tables of central government expenditures were ordered in a functional classification (BUMKO, 2018). A functional classification of central government public expenditures could be obtained for the period 2008-2017.

4.4.1. Model

To examine the relationship between public expenditure and internal migration in Turkey, three different equations were estimated. The first estimation is based on a gravity model; the other two are extended gravity models. The base gravity model to be estimated is as follows:

$$mig_{ijt} = \beta_1 dst_{ijt} + \beta_2 pop_hm_{it} + \beta_3 pop_ht_{jt} + \varepsilon_{ijt}$$

In the base model above, *the migration* dependent variable, in the t period from city j to city i according to the Address-based Population Registration System for the 2008-2017 period, is related to migrating people by changing their place of residence. *The variable dst* variable in km is between i city and j city in year t on the highway distance set by the General Directorate of Highways in the 2008-2017 period. *The pop_hm* variable represents the

population of i city during t year, pop_ht represents the population of j city in year t during the years 2008-2017. The base gravity model is used to test the data set. In the migration-gravity model, population or revenue is used to refer to size. The reason for using population in these analyses is that after 2014, TURKSTAT stopped releasing city-based revenue statistics. Finally, within the scope of the the migration-gravity model derived from Newton's law of gravity, the the base variables are, as explained earlier, the the distance between cities and the the population of cities. As the model improved, in addition to these two variables, the migration stock variable that expressed the permanence of migration was included (İçduygu & Ünalán, 1998, s. 45) (Ünalán, 1998, s. 91). In the analyses conducted within the scope of this study, the migration stock was not used as a variable. The first reason for that is that migration data are selected on the basis of place of residence, and relative variables are added to the extended model. In estimation results, it is expected that migration between two cities is inversely proportional with distance and directly proportional with population size.

Two different sets of variables were tested in the extended model. In the first estimated model, data on the investment incentive system and public expenditures were tested. In the second tested model, by using functional classification of public expenditures, the effect of subexpenditure components on migration was tested. In both variable groups, all cities (81 cities) were estimated in three groups as home cities (62 cities) and host cities (52 cities).

We must take into account that migration data used in estimation are in both home cities and host cities in-migration data. Hence, results about home cities do not show us why the cities send population; results can only show us why people migrate to cities which have sending-city feature.

Estimated models for both variable sets are as given below.

Investment incentive system and total expenditure model:

$$n_mig_{ijt} = \beta_1 dst_{ijt} + \beta_2 pop_hm_{it} + \beta_3 rltv_{ijt} + \beta_4 total_{ijt} + \beta_5 ii_capital_{ijt} + \epsilon_{ijt}$$

$$n_mig_{ijt} = \beta_1 dst_{ijt} + \beta_2 pop_hm_{it} + \beta_3 rltv_{ijt} + \beta_4 total_{ijt} + \beta_5 ii_emp_{ijt} + \epsilon_{ijt}$$

Model for the functional classification of public expenditures:

$$n_mig_{ijt} = \beta_1 dst_{ijt} + \beta_2 pop_hm_{it} + \beta_3 rltv_{ijt} + \beta_4 gps_{ijt} + \beta_5 def_{ijt} + \beta_6 pubse_{ijt}$$

$$+ \beta_7 eco_{ijt} + \beta_8 env_{ijt} + \beta_9 health_{ijt} + \beta_{10} cult_{ijt} + \beta_{11} edu_{ijt} + \beta_{12} sss_{ijt} + \epsilon_{ijt}$$

When the extended model is estimated, the dependent variable was varied from the dependent variable used in the base model. That is because the dependent variable of extended gravity model is developed to obtain healthier estimations (Greenwood, 2005, s. 728). In extended gravity model, estimated n_mig dependent variable is computed as below:

$$n_mig_{ijt} = \left[\frac{mig_{ijt}}{pop_ht_{ijt} - mig_{ijt}} \right]$$

In addition to variables aimed to be tested in extended model in recent literature studies on internal migration, many of them proved that if there is a relative, countryman or friend in the city of migrating individuals, it has a significantly determinant effect on migration decision (Çiftçi & Şengezer, 2017, s. 146)(Ercilasun, Gencer, & Ersin, 2011, s. 323). Therefore, ADNKS included the statistics of 'based on the registered place of the residential city of the citizens, their place of registry' as a *relative* variable to the model. *The relative* variable refers to the number of people registered during 2014-2017 years, in the t year, residing in i city and registered in the population system of j city. The estimation findings suggest that the *rtv* variable forms a positive link with migration.

In extended models, city-level statistics are employed based on investment incentive system statistics and functional classification of public expenditures. These data are two-dimensional as i city and t year. To make a multidimensional estimation, the two-dimensional variables used in the model are weighted using the statistics 'Birthplace of citizens according to their city of residence' issued in accordance with the ADNKS statistics. Since data entail 2014-2017 years, extended gravity model is estimated for 4-year periods. For example, public expenditures used in i city in t year were distributed according to the number of people born in j city and residing in i city. Due to network relationship widely cited in theory, this weighting allows to distribute volumes in public expenditures by taking network effect into account. The reason for distributing variables not on the basis of registered city of residence but on the basis of birthplace is that it was seen that people whose birthplace and residential place are different had moved at least once in their lifetime. In weighting of data, the basis of registered residence was not chosen because there are people who never stayed in their registered city but were born and raised in a metropolis; therefore, the results obtained would be misleading. On the other hand, since the common question "which

city are you from?" in Turkey was mostly answered by saying registered city, it is evident that relative variable is all important.

In the investment incentive system and the total public expenditure model, next to population, distance and relative variables, were also tested. The total variable of which total public expenditures were tested for the 2014–2017 period shows expenditures weighted according to those born during the t period in the i city j city. Estimation findings that the total variable is expected to have a positive relationship with migration.

As for investment incentive system, there are two variables to be tested on city level. First variable; in the investment incentive system capital quantity (*ii_capital*) of target investments for t year funded in i city, second variable is expected employment (*ii_emp*) quantity of target investments for i city funded during t year within the scope of the investment incentive system. Since these data are also two-dimensional, they are also weighted. *ii_capital* stands for weighted capital quantity with respect to those born during 2014–2017 period in i city compared to j city, *ii_emp* refers to weighted expected employment of those born during the 2014–2017 period in t period in i city compared to those born in j city. At first glance, it is expected that capital quantity would have no direct effect on migration, but the new climate thanks to investments could develop the cities both economically and socially. Therefore, the investment incentive system was analysed not only in terms of employment but also in terms of economy. Based on the results of model estimation, it is expected that the variables for the investment incentive system would be significant.

In the model for the functional classification of public expenditures, the variables of general public services(*gps*), defence services(*def*), public order and security services(*pubse*), economic affairs and services (*eco*), environmental protection services(*env*), health services(*health*), relaxation, culture and religion services(*cult*), education services(*edu*), social security, and social relief services (*sss*) were used. All expenditures paid by central government and entailing expenses of entire headquarters are monitored below a separate component as centre component, and in this way, it is feasible to differentiate expenditures made for Ankara city and expenditures made since headquarters is situated in Ankara. Within the scope of this study, the centre component was not included in the model in the city-level analysis; hence the diversion effect of central expenditures was annulled. Each of the variables shows the the weighted expenditure amount for the the 2014–2017 period in the t period for those born in the city the city i compared to

those born in the city j . The expenditure component for housing and social welfare services that belong to functional classification was excluded from the model, as the data had significant deficiencies. When, especially there are no data on small population cities, estimation results become misleading. Thus, it was deemed proper not to use them in estimations. Estimation results expected that general public services(*gps*), public order and security services(*pubse*), economic affairs and services(*eco*), health services(*health*) and education services(*education*) and migration will positive relationship; defence services(*defse*), social security, and social relief services(*sgk*) will negative relationship finally no relationship expect with environmental protection services(*env*) and relaxation, culture, religious services (*culture*).

4.5. Findings and Discussion

The results for the base migration-gravity model shown in Equation 2 are shown in Table 1.

TABLE 1
BASE MIGRATION MODEL ESTIMATION RESULT

Variables	All Cities
dst_{ijt}	-0.174** (0.001)
pop _{hm_t}	0.122** (0.018)
pop_{ht_t}	0.045* (0.018)
Year Dummies	Yes
Home Cities D.	Yes
Host Cities D.	Yes
Observations	64,759
R ²	0.789
With-in R ²	0.380
F test	13174**

Source: Own elaboration.

Robust standard errors are in parentheses. ** p<0.01, * p<0.05, + p<0.1

The results of the base migration-gravity model are in agreement with the theory. During the 2008-2017 period, the host cities and the distance between them are inversely proportional and directly proportional to the size of the population. The results in Table 2 suggest that the valid model is in agreement with the migration-gravity model.

The estimation results of the investment incentive system and the total expenditure model shown in Equations 3 and 4 above are given in Table 2. For three groups, the relationship with capital investment migration and expected employment made within the scope of the investment incentive system were estimated. In all estimations, migration is inversely proportional to distance and directly proportional to population and relative variable.

TABLE 2
INVESTMENT INCENTIVE SYSTEM AND TOTAL EXPENDITURE
MODEL'S ESTIMATION

Variables	All Cities	All Cities	Home Cities	Home Cities	Host Cities	Host Cities
dst_{ijt}	-0.142** (0.013)	-0.143** (0.013)	-0.158** (0.012)	-0.158** (0.012)	-0.160** (0.016)	-0.162** (0.017)
pop_hm_{ijt}	0.228** (0.039)	0.227** (0.042)	0.508** (0.044)	0.506** (0.047)	0.321** (0.043)	0.326** (0.047)
rtv_{ijt}	0.064** (0.011)	0.064** (0.011)	0.053** (0.009)	0.053** (0.009)	0.072** (0.012)	0.071** (0.012)
total_{ijt}	-0.001* (0.001)	-0.003** (0.001)	-0.002** (0.001)	-0.003** (0.001)	-0.002+ (0.001)	-0.006** (0.001)
li_capital_{ijt}	0.001 (0.000)		0.001* (0.001)		-0.000 (0.001)	
ii_emp_{ijt}		0.003** (0.001)		0.002** (0.001)		0.004** (0.001)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Home Cities D.	Yes	Yes	Yes	Yes	Yes	Yes
Host Cities D.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25,917	25,757	19,837	19,677	16,639	6,559
R ²	0.838	0.838	0.797	0.796	0.859	0.859
With-in R ²	0.530	0.532	0.601	0.607	0.545	0.546
F test	326.5**	329.9**	306.5**	322.5**	366.1**	355.1**

Source: Own elaboration.

Robust standard errors are in parentheses. ** p<0.01, * p<0.05, + p<0.1

As we examine the totalit variable that indicates total public expenditures in all equations, significant and negative results were obtained. Thus, total public expenditures have been proven to be effective in the migration influx to a given city. The variable's sign shows that migration and expenditures made to host region are inversely proportional. For this variable, an inversely proportional relationship is not an expected result, but it would not be safe to make a conclusive remark before analysing all components of public expenditures.

Within the scope of the investment incentive system, a significant relationship between instigated capital quantity and migration was found only in cities with sending feature. In these cities, incentive capital multiplies the migration influx to the said cities. It is an expected and desired result that investments made within the scope of incentive system would leave some effect on migration in cities with sending feature. However, in other city groups, not any significant result could be attained; hence there are doubts on the fully efficient operation of incentive system.

Another variable added to the model related to migration and investment incentive system is expected employment from the investments made according to investment incentive system. The expectation is that employment would have a direct effect on migration. As the results for every city group are examined, it appears that expected employment has a positive effect on migration. Any rise in employment after investment incentive not only upgrades migration influx towards receiving cities but also towards sending cities, and this result shows that, as expected, incentive system has the proper effect in terms of employment. Since the effect size was measured to be much smaller in the analyses, conducting observations via microdata could allow for healthier results.

Lastly, for Equation 5 above, the estimation results of the public expenditures functional classification model are as displayed in Table 3.

TABLE 3
**RESULTS OF PUBLIC EXPENDITURES' FUNCTIONAL
 CLASSIFICATION MODEL**

Variabes	All Cities	Home Cities	Host Cities
dst_{ijt}	-0.143**	-0.159**	-0.159**
	(0.014)	(0.013)	(0.017)
pop_hm_{ijt}	0.225**	0.535**	0.281**
	(0.038)	(0.046)	(0.046)
rltv_{ijt}	0.066**	0.054**	0.073**
	(0.011)	(0.010)	(0.012)
gps_{ijt}	-0.021**	-0.013**	-0.029**
	(0.003)	(0.003)	(0.007)
def_{ijt}	-0.001	-0.003**	0.001
	(0.001)	(0.001)	(0.001)
pubse_{ijt}	0.024**	0.029**	0.007
	(0.005)	(0.005)	(0.006)
eco_{ijt}	-0.009**	-0.018**	-0.001
	(0.002)	(0.003)	(0.003)
env_{ijt}	-0.000	-0.002**	0.000
	(0.000)	(0.000)	(0.001)
health_{ijt}	0.014**	0.012**	-0.017**
	(0.004)	(0.004)	(0.005)
cult_{ijt}	-0.022**	-0.009+	-0.006
	(0.005)	(0.006)	(0.007)
edu_{ijt}	0.032**	-0.003	0.071**
	(0.006)	(0.008)	(0.008)
sss_{ijt}	-0.018**	0.005	-0.027**
	(0.005)	(0.005)	(0.006)
Year Dummies	Yes	Yes	Yes
Home Cities D.	Yes	Yes	Yes
Host Cities D.	Yes	Yes	Yes
Observations	24,557	18,477	16,239
R ²	0.840	0.800	0.859
With-in R ²	0.536	0.6097	0.546
F test	248.1**	219.1**	209.4**

Source: Own elaboration.

Robust standard errors are in parentheses. ** p<0.01, * p<0.05, + p<0.1

Analysis results show that distance, population, and relative variables have, as seen in other estimations, too, a significant effect in expected direction. As the variables estimated according to the functional classification of public expenditures are analysed independently, the first is general public services(*gps*). The variable general public services relates to the works done by legislative and executive bodies. Due to unitary, these variables exhibit not huge differences except for the scale of cities. The results of the analysis show that general public services and migration have a negative relationship. Compared to other studies in the literature, these results are almost identical with the result that the bureaucratic structure leaves negative effects on individuals' migration decision. Still, due to the unitary structure of Turkey, we should remark that this is a finding that deserves intense questioning.

The defence services(*defse*) variable shows that this variable is significant only for the home cities. Defence services point to security matters like military defence and civilian defence, hence if there is a rise in defence services expenditures of home cities, then migration to these cities is adversely affected. According to these results that are aligned with both theory and practise in Turkey, if defence expenditures to home regions increase, there is less migration to these cities.

The public order and security services(*pubse*) variable is another variable in the security relationship and this expenditure component involves base security services. The results of the analysis depict that in the model for all cities and home cities, the increase in public order expenditures and migration has a positive relationship. In host cities, there is not a significant relationship between public order expenditures and migration. As we compare home and host cities, it appears that, because in home cities both economic and social life is undeveloped, there is high demand for security and public services. Since in host cities social and economic life is developed and public order is secured, expenditures on them have no significance for migrating groups.

We have mentioned earlier that in the literature there is an abundance of studies on the effects of the economy on migration and more specifically the effects of wages, yet current studies reveal that in addition to economic factors, social factors also play a prominent role in migration. According to the analysis results, when we look at the effects of expenditures made in relation to economic affairs and services(*eco*) on migration, it can be attested that public expenditures in this component have negative effect on the migration influx to the cities. Below this component, some of the

expenditures are agriculture, forestry, fishing and hunting services, mining services, transportation, and communication services. Since services given within that context accumulate in undeveloped regions and there is still a heavy wave of migration from these regions to developed ones, it is quite a natural finding that the relationship is in inverse direction.

However, there is an insignificant relationship between expenditures for environmental protection services(*env*) and migration. It is an expected result that in Turkey, this expenditure group that entails components of waste management, pollution management, and bio-diversity is not related to migration. In studies that analyse more developed countries with a higher sense of environmental awareness, variables that include such subcomponents may provide significant results.

The expenditure component of health services(*health*)and migration had, in all cities, a significant and positive relationship. This component that included medical gadgets, tools and equipment and related work and services, as well as hospital work and services shows that in Turkey health services play a vital role in the migration decision of citizens. The city group that had a negative relationship between health services and migration is the group of host cities. In host cities, an increase in health service expenditures plays a negative role in the migration influx to these cities. Since this is an unexpected result and inconsistent with dominant theory, it needs to be re-analysed via micro data.

In all cities and home cities, expenditures on relaxation, culture, and religious (*culture*) services are negatively correlated with migration. In host cities, on the other hand, this is an insignificant variable. Noting that in Turkey people make migration decision with respect to base public services such as security, health and education, it is expected that, as we mentioned before, this variable and migration forms an insignificant relationship. To explain the inverse relationship between two of them, it is suggested to conduct advanced studies by using field data.

The results of the analysis of all cities in terms of education services(*education*) posit that there is a significant, positive, and strong relationship. In all components of public expenditure, the variable with maximum effect on migration is education variable. The results of the analysis of the host cities also show that in all components of public expenditure, the variable with maximum effect on migration is education variable. In cities that have a sending city characteristic, educational expenditures were found to

be insignificant. In such cities, the causes behind migration are not education but rather the regular workings of social life. In Turkey, recently opened universities across all cities and even in some districts leave a remarkable effect on migration, and as we have noted earlier, in Turkey, one of the most vital causes of family migration is parental decision to migrate for the sake of their children's education.

Finally, as expenditures related to social security and social relief services (*sgk*) are explored, it was seen that, as expected, this variable had a negative relationship with internal migration. This expenditure component covers payments for disadvantaged groups to meet unemployment relief, old age security, and dependents' benefits. These payments are all the same in all cities of Turkey; hence, cities where these payments are high refer to cities where there are many unemployed residents and needy groups. That is why it is normal for individuals to choose not to migrate to regions receiving the highest dividend from social security payments.

5. CONCLUSION AND POLICY IMPLICATIONS

The spatial distribution of the national population is vital to build a balanced economic and social system. A balanced-population distribution within geography allows one to secure economic functionality and to form balanced social classes. Defects in spatial distribution of population could trigger economic and social problems, some of which are rapid urbanisation and population density, diminishing rural population, problems in urban management, squatting, and rise of displaced people. Migration will be the base component of spatial distribution of any population and, particularly in developing countries, it will be the major force behind the novel model of spatial distribution in the upcoming years. On that account, internal migration needs to be managed by public authority. However, the migration control concept entails the kind of policies in all stages of the migration path that occasionally act as a facilitator and occasionally as an obstructor.

In summation, as evidenced by most of the empirical studies in Turkey also, there exists a positive relationship between internal migration and population, while a negative one with distance. Likewise, presence of a relative, countryman, or friend in the place to migrate has positive influence on migration. Within the scope of functional classification of public expenditures,

education expenditures have the greatest and biggest positive effect on internal migration, and it is followed by expenditures conducted in terms of public order and safety. Results of relevant analysis posit that if expenditures for the cities to attract migration are directed towards education, public order, and security expenditures, it is most likely to attain promising results in Turkey.

This study has two limitations. The first limitation is that since it is not feasible to obtain local management data for Turkey, empirical analysis could be carried out merely by data from the central government. The second limitation is conducting the analyses via macro-data. In future research, it is recommended to present effective policy alternatives on internal migration by performing microdata analyses. The results obtained from both quantitative and qualitative analyses of microdata will provide more satisfactory results. Second, an international comparison can be made by implementing this study in other countries with a similar level of development.

BIBLIOGRAPHY

- ABAR, H. (2011). *Determinants Of Intercity Migration Of Turkey: Spatial Econometrics Approach*. Advisor: M. Sinan Temurlenk . Erzurum: Atatürk University Institute of Social Sciences, Department of Economics, Master's Thesis.
- ALECKE, B., HUBER, P., & UNTIEDT, G. (2001). What difference a constant makes? How predictable are international migration flows? *Migration Policies and EU Enlargement The Case of Central and Eastern Europe: The Case of Central and Eastern Europe* (s. 63-78). içinde France: OECD.
- ANAVATAN, A. (2017). Internal Migration And Its Determinants In Turkey: Spatial Data Analysis. *Social Sciences Studies Journal*, 1109-1116.
- AYTUN, U. (2017). *Competitiveness and Complexity in Manufacturing Industries: A Cross-Country Analysis*. Advisor: Doç.Dr. Yılmaz Kılıçaslan. Eskişehir: Anadolu University Social Sciences Institute PhD Thesis.
- BELL, M., & CHARLES-EDWARDS, E. (2014). *Measuring Internal Migration around the Globe: A Comparative Analysis*. KNOMAD Working Paper.
- BHAGWATI, J., & RAMASWAMI, V. (1963, Feb.). Domestic Distortions, Tariffs and The Theory of Optimum Subsidy. *Journal of Political Economy*, 71(1), 44-50.
- BHAGWATI, J., & SRINIVASAN, T. (1974, Jun). On reanalyzing the Harris-Todaro Model: Policy Ranking in the Case of Sector-Specific Sticky Wages. *The American Economic Review*, 64(3), 502-508.
- BINDAK, R. (2015, June). Proposal a Gravity Model for Predicting Internal Migration. *Social Sciences Research Journal*, 4(2), 111-120.
- BOBKAVO, B. (2014). *On Estimation of Gravity Equation: A Cluster Analysis*. Prague: IES Working Paper: 37/2014.
- BOROZAN, D. (2015). Internal Migration, Regional Economic Convergence, and Growth in Croatia. *International Regional Science Review*, 1-23.
- BUCHANAN, J. M. (1952a). Federal Grants and Resource Allocation: *Journal of Political Economy*, 60(3), 208-217.
- BUCHANAN, J. M. (1952b). Federal Grants and Resource Allocation: A Reply. *Journal of Political Economy*, 60(6), 536-538.
- BUCHANAN, J. M., & WAGNER, R. (1970). An Efficiency Basis for Federal Fiscal Equalization. J. Margolis içinde, *The Analysis of Public Output* (s. 139-162). NBER.
- BUMKO. (2018). *Functional Classification*. T.R. Ministry of Treasury and Finance, General Directorate of Budget and Financial Control: <https://www.bumko.gov.tr/Eklenti/7828,03fonksiyonel09102013pdf.pdf?0>
- BÜLBÜL, S., & KÖSE, A. (2010). Examining Between Regional Internal Migration Movements In Turkey With Multidimensional Scaling. *Journal of Istanbul University Faculty of Business Administration*, 39(1), 75-94.
- BYERLEE, D. (1974). Rural-Urban Migration in Africa: Theory, Policy and Research Implications. *The International Migration Review*, 8(4), 543-566.
- CEBULA, R. J. (1978). An Emprical Note on the Tiebout-Tullock Hypothesis. *The Quarterly Journal of Economics*, 92(4), 705-711.
- CEBULA, R. J. (2005). Internal Migration Determinants Recent Evidence. *International Advances in Economic Research*, 11, 267-274.

- ÇAĞLAYAN, S. (2006, Güz). Migration Theories, Relationship of Migration and Emigrant. *Muğla University Journal of Social Sciences*, 17, 67-91.
- ÇATALBAŞ, G. K., & YARAR, Ö. (2015). Determination Of Factors Affecting Internal Migration In Turkey With Panel Data Analysis. *The Journal of Operations Research, Statistics, Econometrics and Management Information Systems*, 3(1), 99-117.
- ÇELİK, F. (2006). Analysis of Internal Migration by Driving and Pulling Forces Approach. *Journal of Erciyes University Faculty of Economics and Administrative Sciences*, 27, 149 - 170.
- ÇİFTÇİ, M., & ŞENGEZER, B. (2017). Analysis of Citizenship in Internal Migration Movement in Turkey. T. K. Koramaz, V. Dökmeçi, & Z. Özdemir in, *Migration in Turkey and Demographic, Economic and Physical Transformation of Provinces* (s. 125-170). İstanbul: Hiperayın.
- CORREIA, S. (2017). *Reghdfe: Stata module for linear and instrumental-variable/gmm regression absorbing multiple levels of fixed effects*. Statistical Software Components s457874, Boston College Department of Economics. <https://ideas.repec.org/c/boc/bocode/s457874.html>.
- DAVIDOVA, L. (2015). *Various Estimation Techniques of the Gravit Model of Trade*. Charles University in Prague- Faculty of Social Sciences Diploma Thesis.
- DAY, K. M., & WINER, S. L. (2006). Policy-induced internal migration: An empirical investigation of the Canadian Case. *International Tax and Public Finance*, 535-564.
- DAYAR, H., & SANDALCI, U. (2016). The Effect Of Investment Incentives On Migrations: The Region Of TR33. *Journal of the Human and Social Science Researches*, 5(7), 2041-2064.
- DİNÇER, G., & MURATOĞLU, Y. (2015). *Immigration to the OECD Countries from Turkey: A Gravity Model Approach*. https://mpira.ub.uni-muenchen.de/62201/1/MPRA_paper_62201.pdf. Munich: Munich Personal RePEc Archive. https://mpira.ub.uni-muenchen.de/62201/1/MPRA_paper_62201.pdf adresinden alındı
- DOĞAN, M. G. (2010). *Examination of the Factors Determining Internal Migration in Turkey with Panel Data Analysis in the Period of 1980-2000*. Turkish Statistical Institute. İzmir: Turkish Statistical Institute Specialization Thesis
- DÖKMEÇİ, V., & KORAMAZ, T. (2007). Inter-provincial Migration in Turkey (1995-2000). T. K. Koramaz, V. Dökmeçi, & Z. Özdemir in, *Migration in Turkey and Demographic, Economic and Physical Transformation of Provinces* (s. 125-170). İstanbul: Hiperayın.
- EVCİL, A., DÖKMEÇİ, V., & GÜLAY, K. B. (2006). Regional Migration in Turkey: Its Directions and Determinants. Greece: 46th European Congress of the Regional Science Association.
- ERCILASUN, M., GENCER, E., & ERSİN, Ö. (2011). Modeling the Determinants of Internal Migration in Turkey Abstract. *International Conference on Eurasian Economies* (s. 319-324). Bishkek: International Conference on Eurasian Economies, 12-14 October 2011, Beykent University & Kırgızistan-Türkiye Manas University, Bishkek, Kyrgyzstan.
- FILİZ, Ş. E. (2008). *Internal Migration Patterns of Turkey*. Advisor: Prof. Dr. Fatma Doğruel. İstanbul: Marmara Üniversitesi Sosyal Bilimler Enstitüsü Yayınlanmamış Doktora Tezi.
- FILİZTEKİN, A., & GÖKHAN, A. (2008). *The Determinants of Internal Migration in Turkey*.
- GEDİK, A. (1997). International Migration in Turkey, 1965-1985: Test of Conflicting Findings in The Literature. *Review of Urban and Regional Development Studies*, 170-179.
- GIURANNO, M. G., & BISWAS, R. (2015). *Internal Migration and Public Policy*. POLIS Working Papers 183.
- GEZİCİ, F., & KESKİN, B. (2005). Interaction between Regional Inequalities and Internal Migration in Turkey. ERSA Conference Papers.
- GÖKHAN, A. (2008). *The Determinants of Internal Migration in Turkey*. İstanbul: Sabancı Üniversitesi Yüksek Lisans Tezi.

- GREENWOOD, M. J. (2005). Modeling Migration. *Encyclopedia of Social Measurement* (s. 725-734). içinde Elsevier.
- GÜLEÇ, M. B. (2009). *Rural-Urban Migration And Unemployment: Evidence From Turkey*. Danışman: D.Şirin Saraçoğlu. Ankara: Middle East Technical University, Yayınlanmamış Doktora Tezi.
- HOSSAIN, M. I., KHAN, I., & SEELEY, J. (2003). Surviving on their feet: charting the mobile livelihoods of the poor in rural Bangladesh . *Staying Poor: Chronic Poverty and Development Policy Conference*. Manchester: University of Manchester.
- İÇDUYGU, A., & ÜNALAN, T. (1998). Internal Migration in Turkey: Problematic Areas and Research Methods. *Internal migration in Turkey* (s. 38-55). in İstanbul: Turkish Economic and Social History Foundation.
- IHLAMUR-ÖNER, S. G., & ŞİRİN ÖNER, N. (2012). *Migration Concepts and Discussions in the Age of Globalization*. İstanbul: İletişim Yayınları.
- ISARD, W. (1960). *Methods of Regional Analysis: An Introduction to Regional Science*. Cambridge: The M.I.T. Press.
- KISACIK, T. (2012). Immigration Case in Adana. *Socio-Economic Consequences of Internal Migration in Turkey and Evaluation of Adana Specific* (s. 87-94). Adana: İktisadi Araştırmalar Vakfı.
- KGM. (2018). Distance Chart Between Provinces. T.R. Ministry of Transport and Infrastructure General Directorate of Highways.
- KOCAMAN, T. (1998). Internal Migration in Turkey, Inter-Provincial and Rural-Urban Migrations and Qualifications of Migrants (1965-1990). T. Bulutay in, *Agricultural Structure and Employment in Turkey* (s. 45-94). Ankara: T.C. Prime Ministry State Institute of Statistics.
- LEE, E. S. (1966). A Theory of Migration. *Demography*, 3(1), 47-57.
- LEWIS, A. W. (1954). Economic Development with Unlimited Supplies of Labour . *The Manchester School*, 22(2), 139-191.
- MADDOX, J. G. (1960). Private and Social Costs of Movement of People out of Agriculture. *The American Economic Review*, 50(2), 393-402.
- MUNRO, J. M. (1974). Migration in Turkey. *Economic Development and Cultural Change*, 22(4), 634-653Özbay, F. (2017). *Dünden Bugüne Aile, Kent ve Nüfus*. İstanbul: İletişim Yayınları .
- MSIGWA, R. E., & BWANA, K. M. (2014). Assesment of Internal Migration Policies in Developing Countries. Evidence from Tanzania. *Business and Economic Research*, 4(1), 32-47.
- PAZARLIOĞLU, V. (2007). Econometric Analysis of Internal Migration in Izmir Case. *Yönetim ve Ekonomi* , 14(1), 121-135.
- RAVERSTEIN, E. (1885). The Law of Migration. *Journal of the Statistical Society of London*, 48(2), 167-235.
- RIEW, J. (1973). Migration and Public Policy. *Journal of Regional Science*, 13(1), 65-76.
- SHENOY, A. (2016). Migration Desicion and Persistent Earnings Differentials: Evidence from Thailand. *MIT Working Paper*.
- SJAASTAD, L. A. (1962). The Costs and Returns of Human Migration. *Journal of Political Economy*, 70(5/2), 80-93.
- STOUFFER, S. A. (1960). Intervenig Opportunities and Competing Migrants. *Journal of Regional Science*, 2(1), 1-26.
- TEKELİ, İ. (1975). Relationships Between Migration Theories and Policies. *METU Faculty of Architecture Journal*, 1(1), 153-176.
- TICARET BAKANLIĞI. (2018). *Statistics and Publications*. T.C. Ticaret Bakanlığı: https://www.ticaret.gov.tr/portal/faces/oracle/webcenter/portalapp/pages/content/docListViewer.jspx?folder=/Contribution%20Folders/web/Yatirim/Istatistikler%20ve%20Yayinlar&parentPage=yatirim&_

- afrLoop=34869785749938961&_afrWindowMode=0&_afrWindowId=goc5wy adresinden alındı
- Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *Journal of Political Economy*, 64(5), 146-424.
- Topbaş, F. (2007). *Study of econometric model on determinants of internal migration: A case of Turkey 2000*. Advisor: Nebiye Yamak. Trabzon: Karadeniz Technical University Social Sciences Institute Unpublished Doctoral Thesis.
- TÜİK. (2018a). *Migration Statistics Metaveri*. 02 27, 2018: http://www.tuik.gov.tr/PrelstatistikMeta.do?istab_id=163 adresinden alındı
- TÜİK. (2018b). *Population and Demographics Statistics*. Ankara.
- TÜRKONFED. (2018, 10 04). 39. *Enterprise and Business Council*. TÜRKONFED: <http://www.turkonfed.org/tr/detay/1357/turkonfed-baskani-kadooglu-dogu-ve-guneydogudan-ic-gocun-maliyeti-70-milyar-tl/> adresinden alındı
- ÜNALAN, T. (1998). TEvaluation of Data Sources on Internal Migration in Turkey. *Internal migration in Turkey* (s. 38-55). in İstanbul: Turkish Economic and Social History Foundation.
- YAKAR, M. (2013). Internal migration Pattern in Turkey based on Difference of Residential and Registration Locations. *Ege Coğrafya Dergisi*, 27-43.
- YÜKSEL, S., EROĞLU, S., & ÖZSARI, M. (2016). An Analysis of Reasons of International Migration in Turkey with Logit Method. *Business and Management Horizons*, 4(2), 34-45.
- VILA, M. C., LÓPEZ, X. P., & MATÉS, R. M. V. (2021). Análisis comparativo de las fuentes estadísticas para la proyección de series temporales de migraciones regionales clasificadas por niveles educativos. *Revista de estudios regionales*, (120), 17-55
- ZIMMERMAN, K., & BAUER, T. (2002). *The Economics of Migration*. Edward Elgar.
- ZIPF, G. K. (1946). The P1 P2 / D Hypothesis: On the Intersity Movement of Persons. *American Sociological Review*, 11(6), 677-686.

