AGE AND COHORT ANALYSIS OF REGIONAL MIGRATION IN TURKEY

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Abstract

This article investigates current age cohort effects on regional migration in Turkey and compares the results with the pattern for the period 1985-1990. The vast amount of migration from the economically backward east and southeast regions to the more developed regions in the west of the country has been continuing for the last half-century. Age cohort analysis of regional migration is given for the periods 1985-1990, 2007-2008 and 2010-2011. Comparison of the results for each period reveals that while migration propensity peaked between the ages of 25-29 for the 1985-1990 period, it peaked between the ages 20-24 during the 2007-2008 and 2010-2011 periods. This could be the result of increasing number of universities which attract younger migrants at the country level. In more recent periods, while the ratio of child migration decreased, the ratios for younger, working age, persons and those in later life increased. Moreover, while the in-migration ratios of the more developed regions increased, those of the less developed regions decreased. Thus, it is expected that inter-regional migration contributes to the transformation of urban structure and the resulting new settlement system will generate a new pattern of growth and interaction among the regions.

Keywords: Cohort shift, migration, age, regional, Turkey
JEL classification:

1. Introduction

A number of life-cycle considerations—such as marriage, divorce, completion of schooling, start of a career, the birth and raising of children, unemployment and retirement—are critical in an individual or a family decision to migrate (Greenwood, 1985). Thus, the decision to migrate alters depending on the potential migrant ages (Nelson and Sewall, 2003). Several fundamental changes in migration behavior and regional population redistribution have been attributed to age-cohort effects. The age structure of a migrant population is normally expressed by a set of age-specific proportions that specify how that population is distributed across a full range of ages or age groups (Rogers et al. 2001). Age-cohort techniques have been used to better understand inter-regional population movements with respect to working age or retirement age groups (Plane, 1992; Plane, 1993). Young adults and middle-aged migrants are attracted to job locations, whereas later life migrants are attracted to mild climates, environmental amenities, and proximity to family and friends. These individuals are less sensitive to employment opportunities and more apt to migrate based on place-specific amenities (Long, 1988). In this situation, it is to be expected that younger migrants are attracted to metropolitan areas, while older migrants might be more apt to choose non-metropolitan destinations (Wilson, 1988; Nelson and Sewall, 2003). However, the rising

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number of recreational communities has also generated non-metropolitan employment opportunities which attract young migrants to these locations. This subject is much more popular and has been widely investigated in developed countries whereas in developing countries, its importance is less recognized. Thus, this paper analyzes the age and cohort effects on inter-regional migration in Turkey between 1985 and 2011 to highlight migration trends within this perspective through time.

Kulkarni and Pol (1994) investigated inter-state migration in the United States according to age groups between the 1970s and 1990s. Their results illustrated that while there is an overall decline in migration, some age-specific mobility rates have remained relatively constant (e.g., 25-29 and 30-34) thereby increasing the share of the total mover population from those age cohorts. Pellegrini and Fotheringham (1999) analyzed inter-metropolitan migration and hierarchical destination choice in the U.S. by taking into consideration younger adult groups (25-29 and 35-44 years old). According to their results, the higher ratio of migrants traveled to the Southwest, Miami and New York, in contrast to the lower ratio of migrants who preferred the Northeast and mid-west. This movement is constant with well-known inter-state migration trends in the recent past. Rogers et al. (2002) developed a model for decomposing a set of age-specific and origin-destination-specific migration flows in the United States for four periods between 1955 and 1990. According to Tobler (1995), the concepts of age and space form the basics of migration laws.

Baryla and Dotterweich (2001) examined the significant factors that impact on student migration in different U.S. regions. The study showed that higher education institutions that have regionally recognized quality programs have a greater ability to attract non-resident students. In addition, it appears that there is a link between non-resident enrollment and the economic environment in which the university is located.

According to a study by Bartley (2006), age-specific migration rates indicate how the effect of independent variables such as employment and amenity factors vary over a lifetime. Thus, one can examine if younger workers differ from older workers and whether retired migrants (60 and above) have a different pattern altogether. For instance, in Paris, while mainly retired people are departing the region in growing numbers, young adults are drawn to the capital to study or to find work (Baccaïni, 2007). Moreover, the social background of people also effects their migration during old age. According to Lundholm (2012) people born in the rural areas are more prone to return at an older age compared to those born in urban settings.

Dennett and Stillwell (2010) investigated age variations in origin-destination migration data from the 2001 U.K. census. They used a national district classification as a framework for summarizing a series of matrices, each containing very large numbers of cells. The results demonstrate how migration propensities and patterns vary between types of district, providing new insights into the processes through which the population is redistributed throughout Britain. Bell and Rees (2006) compared migration in Britain and Australia through the use of age-time plans. Niedomysl and Amcoff (2011) in Sweden and Andersen (2011) in Denmark explained old age return migration with respect to social considerations and amenities.

With respect to developing countries, Levy and Wadycki (1972) made a comparison between the young (15-24) and middle-aged (25-54) migrants in Venezuela. According to the study, age is an important factor, especially for male migrants. The results indicated that the destination opportunities are more effective on young migrants' decisions. On the other hand, Beals et al. (1967) found that in Ghana, there were no significant differences between the age groups in the response to migration. Studies in Brazil and Colombia showed similar characteristics to Venezuela as reported by Sahota (1968) and Schultz (1970). As Turkey is a developing country, migration studies with an age focus are limited. One of these studies (Bahar et al., 2009) examined old age migration to the Mediterranean region in relation to retirement. Tanfer (1983) studied the socioeconomic characteristics by the destination and type of move between 1965-1970 with age-specific rates. Gokhan and Filiztekin (2008) did not use age as a variable but descriptively examined the age groups for their internal migration study in Turkey and stated that the migrants between the 15-29 accounted for more than the half of the migrants.

Thus, two types of approach have been used for modeling migration (Shen, 1999). The first uses age, gender, origin and destination-specific migration rates. The second approach

focuses on modeling migration flows directly by using distance, origin, and destination to explain migration. By following the first approach, the present paper analyzes age and spatial structures of the observed inter-regional migration flows in Turkey and compares them with the results of the previous generation. The organization of the paper is as follows. The background information about the regions and the government policy are discussed in the second section. In the third section, the demographic analysis of migration trend is investigated. The distribution of inter-regional migration according to the age groups is then discussed. The final section is devoted to the discussion of results and suggestions for further research.

2. Background Information About The Regions And Government Policy

The regional policies of Turkey are important when attempting to understand the characteristics of its regions. When compared to previous periods, population movements within Turkey started to increase from the beginning of the 1950s as an outcome of industrialization, liberalization movements and construction of highways in the country. People preferred to move to a new location for economic, educational, social and political reasons. Due to the high migration rates, an efficient market system was developed to control migration during the 1980s. However, it caused problems such as the depopulation of less developed regions and the over-population in metropolitan areas with an increasing demand for housing, infrastructures and public facilities such as hospitals and schools (Gezici and Hewings, 2004).

The governmental policies of "five-year national development plans" and 'priority provinces for development' are directly related to economic imbalances in Turkey, and must be understood. All these policies tried to achieve the same goal: equal development of the regions, but they were not all successful in removing the imbalanced structure of Turkey. Thus, the failure of the 'priority provinces for development' policy was announced in 2000 and this is the situation which Turkey faces: the periphery is less developed than the core (Gezici and Hewings, 2004).

Turkey's present migration schema is still in a transition state. "There are different mechanisms serving socio-economic processes in society in general and in particular segments. Any migration mechanism must be appropriate to the emerging market relations and, accordingly, serve their needs. Regulators of this mechanism reflect provincial differentiation in the development of new forms of economic activity and these are generated by the transition from traditional to market forms (employment and education). This group of factors has the strongest influence on migration" (Yazgi et al., 2013). Balkir (1995) described Turkey's regional disparities into 3 different groups: (i) Demographic disparities such as migration and urbanization; (ii) economic disparities such as income, industry and the service sector; (iii) disparities in infrastructure which include public services such as health and education. The present study deals with the first group of disparities by analyzing inter-regional migration according to age groups.

3. Demographic Analysis Of Migration Trend

Migration is a dynamic subject which can change depending on demographic, economical, and cultural factors (Rogerson, 1987; Milne, 1993; Plane, 1992). Based on life-course understanding of migration flows, it is to be expected that younger cohort shifts would be more responsive to labor and housing market variations, while older cohorts would be directed towards regions with good amenities or to the areas with lower living expenses (Walter, 2002).

Demographers have observed that age and gender play an important role in migration rates. The most important factor that makes a difference in migration levels is the age factor (Clark and Hunter, 1992). The probability of migration generally occurs when a person reaches his/her twenties. This age is usually the peak point of migration due to reasons such as entering university, beginning a career, and so on. However, after their twenties, this mobility sharply declines until they reach retirement. There can be a slight increase in the mobility as people retire (Rogers, 1979; Pandit and Withers, 1999; Walters, 2000). In addition to the role of age in migration, the existing facilities in a location may also play an important

role for the multiple movements during people's life cycle. In other words, some specific locations may provide opportunities for a short period which causes people to move from there to another place. For instance, an individual may stay in a place near his/her college which will be left after graduation. To find work, he/she may prefer to live in a metropolitan area. This accommodation may again change according to retirement preferences like returning to his/her hometown or moving on to a retirement area. Another reason that younger people have higher mobility rates is that they take less responsibility related to community, family, real estate etc. which enables them to change their accommodation more often. It has been proven by studies that the probability of inter-regional migration for families with working wives is less when compared to other groups.

3.1. Analysis Of Regional Migration According To Age Groups In Turkey

In this study, by adopting an age-disaggregate decomposition of regional migration pattern changes, the differences in migrant destination choices among various age groups may be highlighted as well as the interdependency that exists according to different life stages. The location of regions is illustrated in Figure 1.

Figure 1- Geographical regions of Turkey.

(Source: Evcil et al., 2006)

The age-specific distribution components of in-migration at the country level are illustrated in Figures 2, 3, and 4 for the periods 1985-1990, 2007-2008 and 2010-2011, respectively. First, regional in-migration increased throughout these periods at the country level. Second, while migration propensity peaked among persons ages 24-29 during the period 1985-1990 at the country level, it peaked between ages 20-24 for the periods 2007-2008 and 2010-2011. This could be the result of increasing number of universities and job opportunities at the country level in recent decades (Yazgi et al., 2013). Third, the common characteristic of these figures is the sharp decrease of migration after the peak at the ages 24-29 until the age 65+ and then a small increase was observed in the later life migration. There are several reasons for the later life migration of people such as amenities, climate, lower cost of living, and return to hometown. These also depend on income level or sociological needs which are common for both the developed and the developing countries (Litwak and Longino, 1987; Walters, 2000).

Investigation of the trend of Turkish in-migration according to age groups reveals through time that the total number increased from 2,273,492 in the period 2007-2008 to 4,761,821 in 2010-2011. During the period of 2007-2008, the ratio of child in-migration was 21.8% (Table-1) and decreased to 19.3% (Table-2) in the period of 2010-2011. The ratio of the younger age group in-migration was 41.8% and increased to 46.0% in the period 2010-2011. This ratio was much higher for some other developing countries. For example, China

recorded a figure of 68.8% (Liang and White; 1997). Although the in-migration ratio of the middle age group decreased from 22.2% to 20.8% and from 11.3% to 10.6% for the older age group between the two periods, it increased from 2.9% to 3.3% for the later life age group at the country level. Thus, the results are parallel to the findings of the previous research (Rogers et al. 2002; Walters, 2000).

3.2. Age And Cohort Analysis Of In- And Out-Migration According To Regions

During the period 2007-2008, the regional in-migration of the Marmara region has the highest ratio, 36.5% due to its large amount of job alternatives and university education facilities (Yazgi et al., 2013) whereas Southeast Anatolia has the smallest in-migration ratio with 7.0% due to its shortfall in jobs and university education facilities. The Marmara region is followed by Central Anatolia (15.4%), Black Sea region (12.2%), Mediterranean region (10.8%), Aegean region (10.4%) and East Anatolia (7.7%). So, the inter-regional migration ratio decreases from the west to the east of the country.

The comparison of the regional in-migration between the periods 2007-2008 and 2010-2011 reveals that while the ratios of in-migration of the Marmara region increased to 37.3%, Central Anatolia to 16.4%, East Anatolia to 8.6% and Southeast Anatolia to 7.4%, whereas those of the Black Sea region decreased to 10.8%, the Mediterranean region to 10.1% and the Aegean region to 9.4%. These results illustrated that the regions with large metropolitan areas have continued to attract an increasing amount of in-migrants by having large amount of employment alternatives and better quality universities, which are the most important factors to attract migrants as illustrated by Yazgi et al. (2013). On the other hand, the increase in the number of in-migrants to East and Southeast Anatolia represents return migration which could be the results of subsidies provided by different national and international resources or the jobs created as a result of the Southeastern Anatolia Project (GAP).

During the period 2007-2008, while peak in-migration distribution was between the ages of 20-24 for most regions, it was between the ages of 25-29 for East and Southeast Anatolia. However, during the period 2010-2011, the peak for East Anatolia also switched to the ages of 20-24. This is probably the result of a recent increase in the number of universities in this region.

In general, while there are persistent regularities in the age profiles of regional in-migration flows, there are slight changes in comparison with Turkey's overall ratio between the periods of 2007-2008 and 2010-2011. During the period of 2007-2008, while the ratio of child in-migration group is higher for Southeast Anatolia (25.1%), the Mediterranean region (24.1%), East Anatolia (23.3%) and Central Anatolia (22.0) than Turkey's overall ratio (21.8%), it is lower for the rest of the regions. Between the two periods, this ratio decreased for all the regions. During the period 2007-2008, while the younger age migration ratios are higher for the Marmara region (45.0%) and Southeast Anatolia (43.6%) than Turkey's overall ratio (41.8%), they are lower for the rest of the regions. During the period 2010-2011, while this ratio increased to 51.0% for East Anatolia, 47.6% for Central Anatolia, 46.8% for the Marmara region and 46.5% for Southeast Anatolia, compared to 46.0% for Turkey overall. The ratios of the other regions stayed lower than Turkey's overall ratio. This can be the result of the large amount of university education facilities and alternative jobs in the Marmara region and the result of GAP project in Southeast Anatolia as mentioned above. The in-migration ratios for the middle and later age groups fell sharply as expected, and they continued to fall during the period 2010-2011. Between 2007-2008, while later life in-migration ratio is lower for the Marmara region (2.6%), the Mediterranean region (2.6%) and Southeast Anatolia (1.6%) than Turkey's overall ratio (2.9%), they are higher for the other regions. However, it is expected that the Mediterranean region in particular should have a higher in-migration ratio than Turkey's overall ratio due to its climate and amenities being more attractive for retired migrants. Meanwhile, for the period 2010-2011, this ratio increased in all regions. In sum, while the decrease of the child migration ratio can be the result of a decreasing birth rate, the increase in the later life age migration ratio can be the result of improvement in health care delivery and standard of living.

Table 1-The numbers of in- migration with respect to age groups (2007-2008) in Turkey

Age	Turkey	Marmara	Aegean	Mediterranean	Central Anatolia	Black Sea	Eastern Anatolia	Southeastern Anatolia
'0-4'	126357	40939	12562	15144	19836	14915	11914	11047
'5-9'	158300	56111	16450	19132	24921	16424	12792	12470
'10-14'	130545	49332	13634	15362	19620	13261	9637	9699
Subtotal	415202	146382	42646	49638	64377	44600	34343	33216
%	21.8%	21.1%	21.5%	24.1%	22.0%	19.2%	23.3%	25.1%
'15-19'	169961	71541	17543	16479	26292	15845	10915	11346
'20-24'	325308	128531	35248	33857	48972	34088	22513	22099
'25-29'	301200	112218	3026	31468	44170	33458	25429	24197
Subtotal	796469	312290	55817	81804	119434	83391	58857	57642
%	41.8%	45.0%	28.1%	39.7%	40.8%	35.9%	39.9%	43.6%
'30-34'	197059	65995	20994	22986	30607	23229	17728	15520
'35-39'	133848	44653	14822	15824	21611	16487	10991	9460
'40-44'	91084	32684	10117	10487	14491	12084	6029	5192
Subtotal	421991	143332	45933	49297	66709	51800	34748	30172
%	22.2%	20.6%	23.1%	23.9%	22.8%	22.3%	23.6%	22.8%
'45-49'	75061	27334	8052	8018	11580	12151	4471	3455
'50-54'	62136	21526	6241	6021	9458	12458	3942	2490
'55-59'	46500	15316	4550	4296	7124	10016	3234	1964
'60-64'	31543	10386	2894	2766	5022	6677	2488	1310
Subtotal	215240	74562	21737	21101	33184	41302	11647	9219
%	11.3%	10.7%	11.0%	10.2%	11.3%	17.8%	7.9%	7.0%
'65+'	54332	17807	5102	4135	8682	11143	5384	2079
%	2.9%	2.6%	2.6%	2.0%	3.0%	4.8%	3.7%	1.6%
Total	1903234	694373	198469	205975	292386	232236	147467	132328
%		36.5%	10.4%	10.8%	15.4%	12.2%	7.7%	7.0%

(Source: TUIK (Turkish Statistical Institute) – Migration Statistics)

Table 2-The numbers of in- migration with respect to age groups (2010-2011) in Turkey

Age	Turkey	Marmara	Aegean	Mediterranean	Central Anatolia	Black Sea	Eastern Anatolia	Southeastern Anatolia
'0-4'	135525	46807	11989	16000	21655	12991	12112	13971
'5-9'	137615	49016	12507	16956	21975	13349	10953	12859
'10-14'	120747	45026	11195	14474	19666	11912	8445	10029
Subtotal	393887	140849	35691	47430	63296	38252	31510	36859
%	19.3%	18.4%	18.6%	22.9%	18.9%	17.4%	18.0%	24.3%
'15-19'	223054	85303	22901	19264	41885	23475	17875	12351
'20-24'	395546	149058	36634	35630	69396	38268	39046	27514
'25-29'	322899	123384	28475	31673	48504	27914	32271	30678
Subtotal	941499	357745	88010	86567	159785	89657	89192	70543
%	46.0%	46.8%	45.8%	41.7%	47.6%	40.7%	51.0%	46.5%
'30-34'	212141	77185	20356	23392	32448	20832	19452	18476
'35-39'	129172	47464	13365	14889	20958	13531	9972	8993
'40-44'	83594	32208	8838	9652	13512	9184	5394	4806
Subtotal	424907	156857	42559	47933	66918	43547	34818	32275
%	20.8%	20.5%	22.1%	23.1%	20.0%	19.8%	19.9%	21.3%
'45-49'	71884	28223	7084	7583	11609	9782	4006	3597
'50-54'	56507	21917	5381	5295	8849	9424	3250	2391
'55-59'	52343	19118	4466	4483	8078	10390	3705	2103
'60-64'	36609	13164	3080	3028	5736	7252	2898	1451
Subtotal	217343	82422	20011	20389	34272	36848	13859	9542
%	10.6%	10.8%	10.4%	9.8%	10.2%	16.7%	7.9%	6.3%
'65+'	68084	25992	5933	5199	11142	11784	5668	2366
%	3.3%	3.4%	0.030868244	2.5%	3.3%	5.4%	3.2%	1.6%
Total	2045720	763865	192204	207518	335413	220088	175047	151585
%		37.3%	9.4%	10.1%	16.4%	10.8%	8.6%	7.4%

(Source: TUIK (Turkish Statistical Institute) – Migration Statistics)

Figure 2- Age distribution of in- migration (2007-2008) in Turkey.

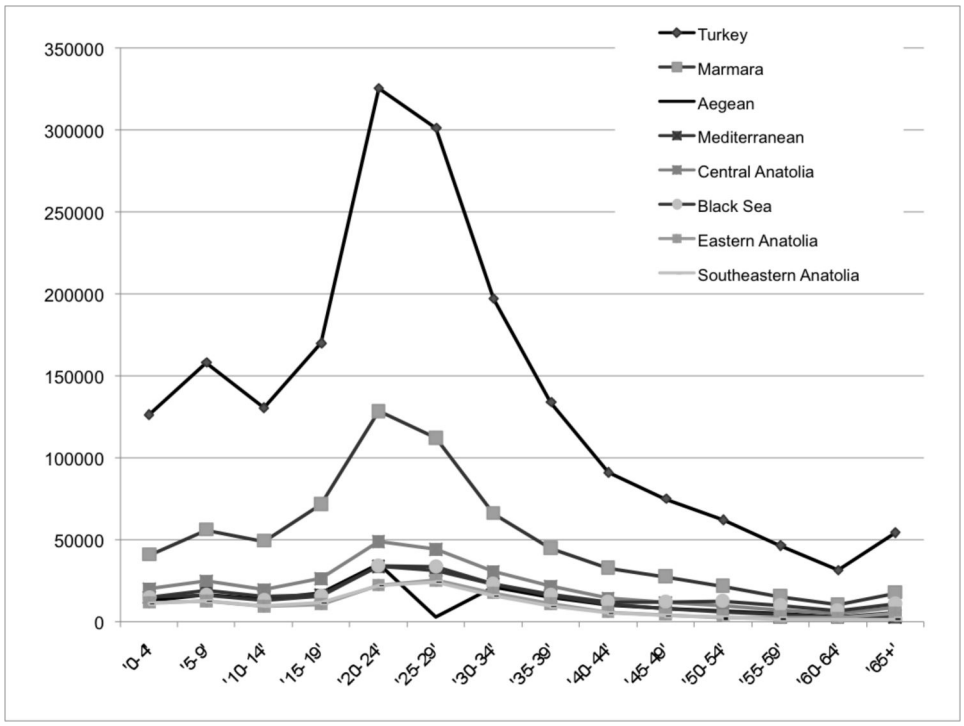
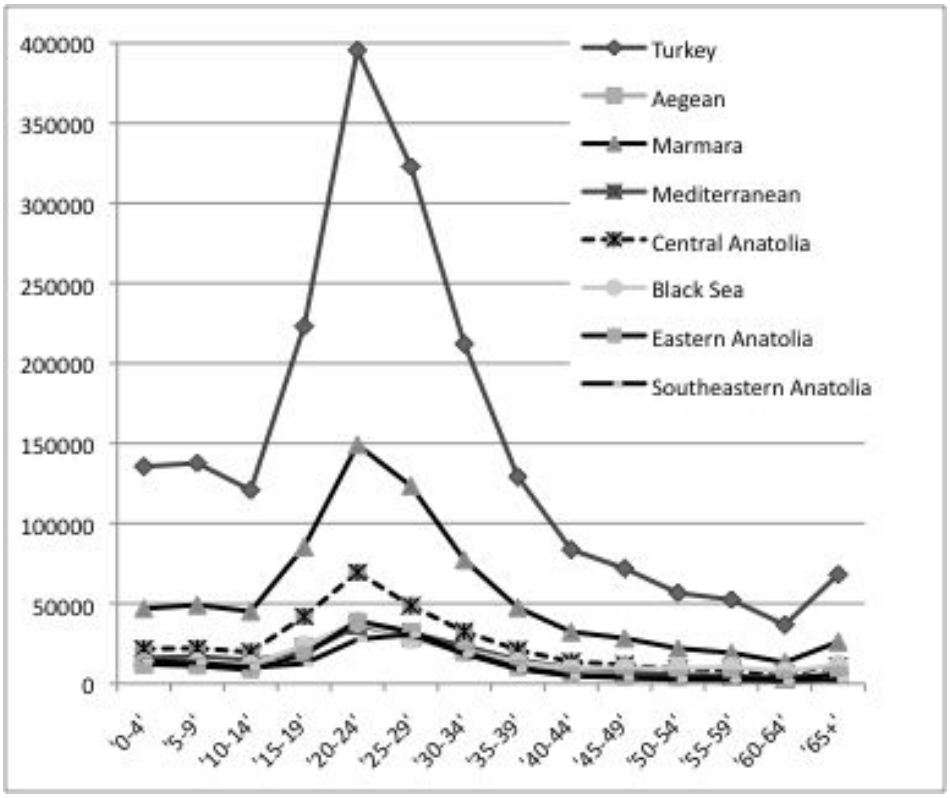
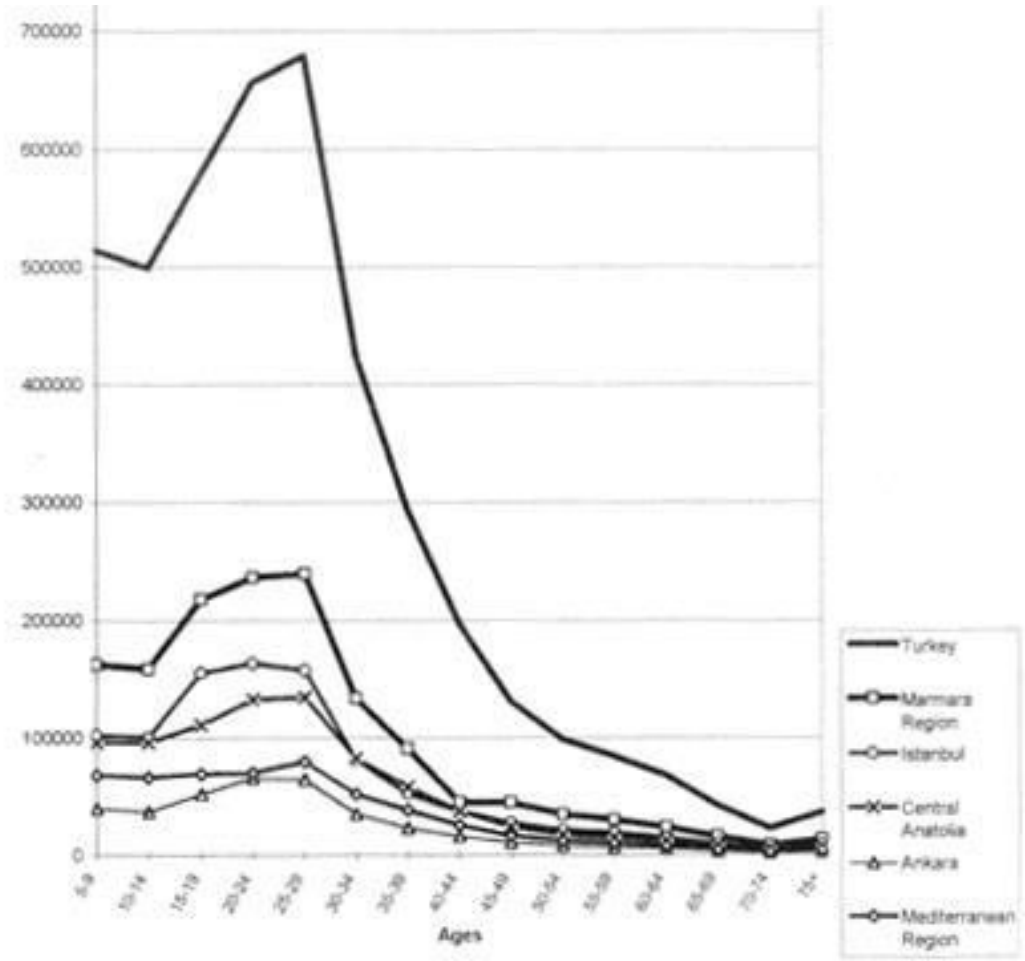


Figure 3- Age distribution of in- migration (2010-2011) in Turkey.



Thus, the results illustrate that the general in-migration trend in Turkey remained almost constant during the period 2007-2011. In general, these indicators also match up with the results of the study made for the period of 1985-1990 (Figure-4). The corresponding results of both studies also prove that the migration is a kind of traditional habit which cannot be easily changed over a short period. At the same time, it is a complex and dynamic subject which depends on various demographic, economic and social factors as already illustrated by Yazgi et al. (2013).

Figure 4- Age distribution of in-migration (1985-1990).



(Source: Census of Population 1990, Internal Migration by Permanent Residence, State Institute of Statistics, Prime Ministry of Turkey)

The total regional out-migration increased from 2,273,492 (2007-2008) to 2,420,181 (2010-2011) at the country level but it varies according to different age cohorts. During the period 2007-2008, the out-migration ratio for the Marmara region was 29.2%, Central Anatolia 16.1%, the Black Sea region 13.5%, East Anatolia 12.9%, Southeast Anatolia 9.9%, the Mediterranean region 9.8%% and the Aegean region 8.6% (Table-3). For the 2010-2011 period, while the regional out-migration ratio of the Black Sea region increased to 13.9%, the Mediterranean region to 10.7%, and East Anatolia to 12.9%, that of Southeast Anatolia decreased to 9.0%, the Marmara region to 28.5%, Central Anatolia to 15.6%. The result for East Anatolia remained the same (Table-4).

The distribution of out-migration age cohort ratios according to the regions in comparison to Turkey's ratios varied for the periods 2007-2008 and 2010-2011. During the period 2007-2008, while the ratio of migrating children for Southeast Anatolia (30.5%) and East Anatolia (27.0%) are higher than that of Turkey's overall out-migration ratio (21.8%), it is lower for the rest of the regions. This situation did not change for the period 2010-2011. During the period 2007-2008, while the ratios of out-migration for the young working age group of the Aegean region (45.3%), the Mediterranean region (45.1%), the Black Sea region (45.1%), Central Anatolia (44.0%), and East Anatolia (41.9%) are higher than the overall ratio of Turkey (41.8%) due to the high mobility of the younger age group towards large metropolitan areas for employment and/or university education (Yazgi et al., 2013), it was lower for the other regions. During the period 2010-2011, these ratios increased for all the regions. Similar to the in-migration ratios, the out-migration ratios fall sharply for the middle age and older age groups in all the regions. Following this, the out-migration ratios of the later life age group increased slightly after the age 65+. During the period 2007-2008, while this ratio was higher for the Marmara Region (4.1%) and Central Anatolia (3.1%) than Turkey's overall ratio (2.9%), it was lower for the rest of the regions (Table-3). During the period 2010-2011,

these ratios increased for all the regions while the dominance of the Marmara region and Central Anatolia was preserved.

Table 3-Age distribution of regional out-migration for the period 2007-2008 in Turkey

Age	Turkey	Marmara	Aegean	Mediterranean	Central Anatolia	Black Sea	Eastern Anatolia	Southeastern Anatolia
'0-4'	126357	34425	9418	11298	18638	15069	20386	17123
'5-9'	158300	40135	11612	14605	23129	20532	26101	22186
'10-14'	130545	33685	10194	12536	18978	17387	19726	18039
Subtotal	415202	108245	31224	38439	60745	52988	66213	57348
%	21.8%	19.5%	19.1%	20.6%	19.8%	20.6%	27.0%	30.5%
'15-19'	169961	43314	13734	17852	25355	26083	23541	20082
'20-24'	325308	83590	33393	35591	60813	48770	38068	25083
'25-29'	301200	83606	27080	30729	48594	41235	41114	28842
Subtotal	796469	210510	74207	84172	134762	116088	102723	74007
%	41.8%	37.9%	45.3%	45.1%	44.0%	45.1%	41.9%	39.3%
'30-34'	197059	58276	16815	18594	30217	24881	27153	21123
'35-39'	133848	40208	11710	12949	20951	17212	17072	13746
'40-44'	91084	28971	8256	9169	14828	12390	9576	7894
Subtotal	421991	127455	36781	40712	65996	54483	53801	42763
%	22.2%	22.9%	22.5%	21.8%	21.5%	21.2%	21.9%	22.7%
'45-49'	75061	26785	6656	7164	12398	10054	6990	5014
'50-54'	62136	25061	4992	5522	10260	7724	5260	3317
'55-59'	46500	20318	3549	3931	7744	5164	3496	2298
'60-64'	31543	14074	2367	2556	5308	3512	2363	1363
Subtotal	215240	86238	17564	19173	35710	26454	18109	11992
%	11.3%	15.5%	10.7%	10.3%	11.6%	10.3%	7.4%	6.4%
'65+'	54332	23015	4001	4030	9409	7374	4502	2001
%	2.9%	4.1%	2.4%	2.2%	3.1%	2.9%	1.8%	1.1%
Total	1903234	555463	163777	186526	306622	257387	245348	188111
	%	29.2%	8.6%	9.8%	16.1%	13.5%	12.9%	9.9%

(Source: TUIK (Turkish Statistical Institute) – Migration Statistics)

Table 4-Age distribution of out-migration (2010-2011) in Turkey

Age	Turkey	Marmara	Aegean	Mediterranean	Central Anatolia	Black Sea	Eastern Anatolia	Southeastern Anatolia
'0-4'	135525	35830	10500	13221	19631	16735	23086	16522
'5-9'	137615	36034	10694	13711	19312	17501	23933	16430
'10-14'	120747	31519	9513	12246	16482	16593	20470	13924
Subtotal	393887	103383	30707	39178	55425	50829	67489	46876
%	19.3%	17.7%	16.1%	17.9%	17.4%	17.9%	25.5%	25.5%
'15-19'	223054	57455	21117	29025	32739	32919	27919	21880
'20-24'	395546	100559	43694	49000	67173	55777	44673	34670
'25-29'	322899	86842	32755	35383	53890	44445	41511	28073
Subtotal	941499	244856	97566	113408	153802	133141	114103	84623
%	46.0%	42.0%	51.1%	51.7%	48.2%	46.8%	43.1%	46.1%
'30-34'	212141	61618	19678	21370	32039	27252	29299	20885
'35-39'	129172	37884	11677	12791	19445	17552	17689	12134
'40-44'	83594	25131	7856	8528	13057	12415	10015	6592
Subtotal	424907	124633	39211	42689	64541	57219	57003	39611
%	20.8%	21.4%	20.5%	19.5%	20.2%	20.1%	21.5%	21.6%
'45-49'	71884	24043	6381	6933	11295	11428	7493	4311
'50-54'	56507	21771	4942	5035	9091	8538	4607	2523
'55-59'	52343	22067	4137	4286	8097	7429	4334	1993
'60-64'	36609	15996	2843	2846	5728	4791	3026	1379
Subtotal	217343	83877	18303	19100	34211	32186	19460	10206
%	10.6%	14.4%	9.6%	8.7%	10.7%	11.3%	7.4%	5.6%
'65+'	68084	26649	5192	4940	11004	11219	6644	2436
%	3.3%	4.6%	2.7%	2.3%	3.4%	3.9%	2.5%	1.3%
Total	2045720	583398	190979	219315	318983	284594	264699	183752
	%	28.5%	9.3%	10.7%	15.6%	13.9%	12.9%	9.0%

(Source: TUIK (Turkish Statistical Institute) – Migration Statistics)

As shown in Figure 5 and Table 3, during the period 2007-2008 while the peak of out-migration distribution was between the ages 25-29 for East Anatolia and Southeast Anatolia, it was between the ages 20-24 for the rest of the regions. During the period 2010-2011, as shown in Figure 6 and Table 4, the peak of out-migration distribution was between the ages 20-24 for all regions which leads to the conclusion that migration for university education is gaining importance as already illustrated by Yazgi et al. (2013).

The results of the study reveal that there are three basic characteristics of migration according to age variation as already illustrated by Tobler (1995). The first is that migration flows exhibit distinct origin-destination-specific patterns, which are relatively stable over time. The second is that inter-regional in-migration and out-migration patterns are similar to each other. The third is that there are strong regularities in age profiles, which is illustrated by the fact that the majority of migrants are young adults. Finally, later life migration reveals a parallel result to the previous research in that return migration to home town is the highest in the Black Sea Region while it is the second highest for the Marmara Region, which is the opposite result to previous studies (Walters, 2000).

Figure 5- Age distribution of out-migration (2007-2008) in Turkey.

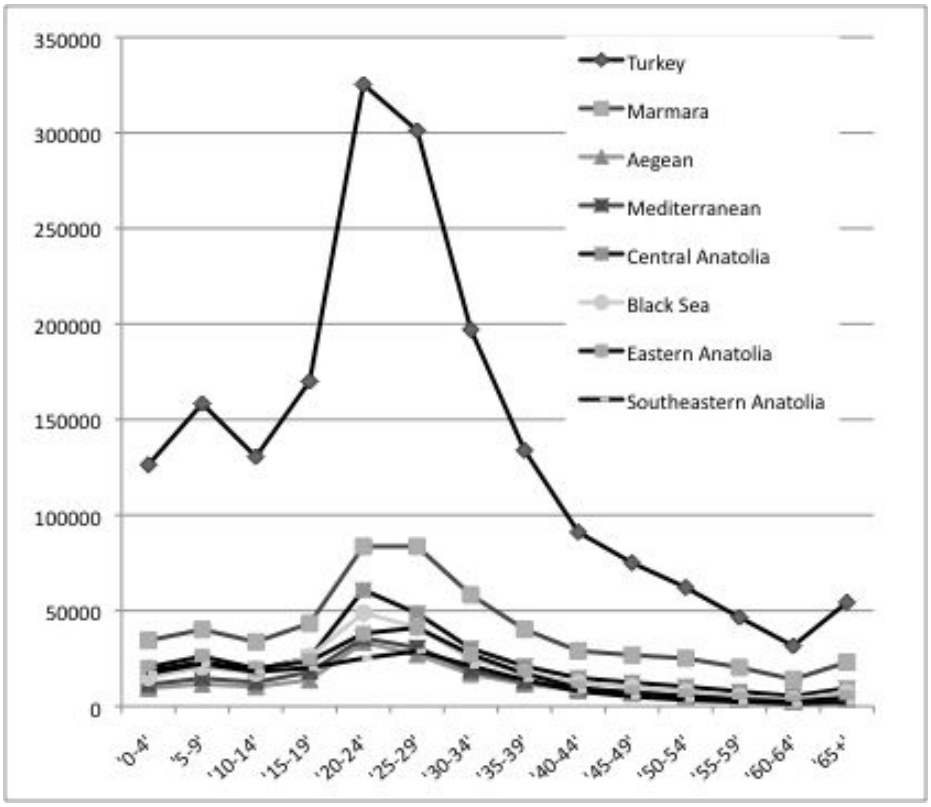
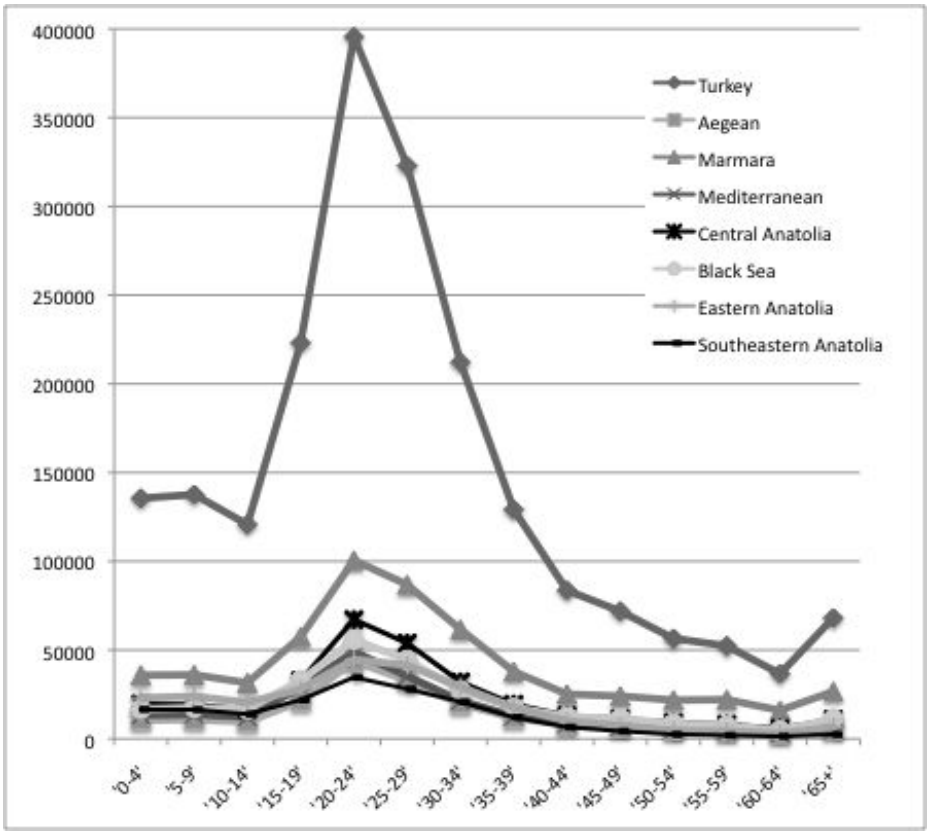


Figure 6- Age distribution of out-migration (2010-2011) in Turkey.



4. Conclusion

The purpose of this study is to investigate the several related population phenomena, including regional population redistribution, and the relationship between age and regional in- and out- migration patterns. In general, our findings concerning regional level characteristics are consistent with previous research in Turkey and in other developing countries. Individuals are more likely to move out of regions with a lower level of economic development to higher income large metropolitan areas. This is parallel to classic arguments about migration and economic development.

One of the cornerstones of geographic analysis is recognition of different spatial scales, and migration studies can be greatly enhanced by adopting different scales of analysis (Pandit and Withers, 1999). By focusing on age differences in the inter-regional migration and comparing them with previous results, this article adds a new perspective on the scale at which these age-cohort dynamics and period effect explanations. In aggregate, the developed areas grew more rapidly than less developed regions in recent decades. This analysis, however, demonstrates that such aggregate trends are not uniform across all regions.

The age composition of the migrants is investigated for the periods of 1985-1990, 2007-2008, and 2010-2011 at both the country and regional level. According to the results at the country level, while in-migration reached its peak point at the ages of 24-29 for the period 1985-1990, the peaks switched to between 20-24 for both in- and out- regional migration for the periods 2007-2008 and 2010-2011. Following this, migration falls sharply during the both periods until 65+. Later, it increased slowly which shows that later life migration in Turkey follows a similar, though less extensive, pattern to that of developed countries.

Moreover, during the period 2007-2008, the regional analysis of the age composition of in-migrants reveals that the Marmara region and Central Anatolia have higher migration ratios than other regions due to the large amount of employment opportunities and educational facilities which are the major reasons for attracting migrants as shown by Yazgi et al. (2013). While their dominance continued during the period 2010-2011, the ratios of the

Mediterranean, the Aegean, and the Black Sea regions decreased but that of East Anatolia and South Anatolia increased as a result of return migration.

Furthermore, the age composition of regional in-migration varies according to the regions to some extent. During the period 2007-2008, the child in-migration ratios of East and Southeast Anatolia are higher than the other regions due to their higher birth rates. During the period 2007-2008, while peak in-migration was between the ages of 25-29 for Southeast and East Anatolia, it was between the ages of 20-24 for the other regions which have more extensive job alternatives and better university education facilities. On the other hand, during the period 2010-2011, it switched to the ages 20-24 in East Anatolia, probably, due to the increasing number of universities in this region. Although it is to be expected that there is a higher amount of later life in-migration ratios for those regions with amenities such as the Mediterranean region, these ratios are higher for Central Anatolia and the Black Sea regions. The former can be explained by its higher quality of health care facilities and higher quality of life which is important for the later life migrants, whereas the higher in-migration ratio for the Black Sea region could be the result of the rural background of people which are more prone to return at older age compared to those born in urban areas. These ratios have further increased during the period 2010-2011.

In general, the out-migration pattern is similar to in-migration with some slight differences. The out-migration ratios of the Mediterranean and Aegean Regions were lower than those of the other regions. Moreover, between the period 2007-2008 and 2010-2011, while the out-migration ratios of children decreased, the ratios of younger age and later life age groups increased for all regions. In some places, this may cause the need for transformation of facilities related to children, and in others it may increase the demand for later life group facilities.

In sum, internal migration between developed and less developed regions has an important effect on the transformation of their economic, political and urban structure as well as their social fabric and life styles. The results of the study can be useful for demographers, geographers, sociologists, urban and regional planners and policy makers by providing background to address the problems in the aforementioned subject areas. Further research into regional migration can be extended by including the education and professional levels of migrants.

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