RESIDENTIAL MOBILITY PATTERNS IN ISTANBUL- 1990-2000

www.esosder.org

ISSN:1304-0278

(466-485)

İSTANBUL'DA KONUT HAREKETLİLİĞİ DESENLERİ, 1990-2000

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Abstract

This study aims to clarify the nature and selectiveness of residential moves and their impacts on the urban space, at the level of district in Istanbul within two distinct periods: 1985-1990 and 1995-2000. This study is an attempt to understand residential mobility which is one of the poorly studied dynamics of Turkish urbanization. Data used in this study is drawn from the 1990 and 200 Population Censuses. To analyse residential mobility, the paper revisited B.A. Kipnis' 'flow priority graph' and introduces the 'Socio-economic Development Index' which is the original contribution of this study. The major findings are that from 1990 to 2000, high-status groups' interaction with the urban geography of Istanbul significantly increased, opposite to low-status groups.

Keywords: Residential Mobility, Istanbul, Kipnis, Socio-economic Development Index.

Öz

Bu çalışma konut hareketliliğinin- ki Türkiye kentleşme yazınında kendisine çok az yer bulmuştur- doğasını ve kentsel mekânlar üzerindeki etkisini aydınlatmayı amaçlamaktadır. Çalışma 1985-1990; 1995-2000 yılları arasında İstanbul örnek alanında gerçekleşen konut hareketlilik desenini ilçeler ölçeğinde analiz etmektedir. 1990 ve 2000 yıllında yapılan Genel Nüfus Sayımları veri kaynağı olarak kullanılmıştır. Verinin analizinde Kipnis'in (1985)"Öncelikli Akış Çizgisi" metoduna ek olarak kentsel (konut) hareketlilik analizinde ilk defa bu çalışmada kullanılan "sosyo-ekonomik gelişmişlik endeksi" de kullanılmaktadır. Çalışmanın sonucunda elde edilen ana bulgular ise şöyle özetlenebilir: 1990 yılından 2000 yılına yüksek statü grubunun kent coğrafyası ile etkileşimi artarken, alt-statü grubu ise kent coğrafyasında tabiri kalmakta, hali hazırda bulunduğu coğrafyayı terk edememektedir.

Anahtar Kelimeler: Konut Hareketliliği, İstanbul, Kipnis, Sosyo-ekonomik Gelişmişlik Endeksi.

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INTRODUCTION

In 2000, more than one fifth of Istanbul's population lived in a different place than their place of residence five years ago. If we consider the year of 2000 population of Istanbul was around some 9.2 million, this figure means that nearly 2 million people were not living in 2000 where they used to live in 1995. Of these 2 million 'mobiles' nearly half (9.5% of the total) were migrants coming from different cities. The remaining one million inhabitants of Istanbul moved in the five-year period between 1995 and 2000 from one district to another. In other words, the percentage of intra-urban mobile people (hereafter 'movers') in total population of Istanbul was approximately 11.5% in 2000.²

There has been an on-going interest in the dynamics of mobility in the city at the same time as there has been on-going enquiry the effects of such movements on the socio-spatial settings of the city. However, research on residential mobility (hereafter 'RM') in Turkey is relatively poor compared to the well-developed literature on migration. Although our knowledge on the causes and effects of migration is almost complete, research on RM is very limited in terms of theories describing RM and modelling RM flows. In the case of Turkey, a few studies (Türel, 1979; Aydemir, 1984; Kocatürk and Bölen, 2005; Erginli and Baycan, 2011) address RM of population in Turkish cities. This is partly related with the lack of available data and the difficulty of preparing RM questionnaire; and partly because of the dominance of migration studies in Turkish urbanization studies. To narrow the gap, this study provides a unique case for the studies on RM in Turkey, since it examines RM at the aggregate or macro level apart from the those that largely focus on the motivations of RM at the disaggregate or micro level.

RM is a highly structured process with impacts on both those who move and on the places they choose in their mobility process (Cadwallader, 1992). This point of view constitutes the core arguments of this study. RM is a process deeply rooted in the spatial organization of urban areas, but spatial factors cannot wholly explain the characteristics of RM. Such conditions as proximity or distance or direction or physical structure or socioeconomic/demographic profile of neighbourhoods and/or movers are significant parameters in any equation of movements, they can only be made expressive when RM is conceptualized in the context of social, political and economic and spatial settings of urban space.

In this study, space is taken as urban space and to be specific, it is taken as the metropolitan area of Istanbul, Turkey. What make Istanbul metropolitan area unique for RM research perhaps its idiosyncrasies based on geographical position, demographic transition and economic restructurings especially in the period of neo-liberalisation. The transformation of Istanbul represents a unique and particularly vivid example of the nature of Turkish urbanization story. Recent problems, concerns and potentials of Istanbul are likely to be faced by rest of Turkish cities at least one decade later. I believe that through analysing residential movement in the city, the urbanization dynamics of Istanbul could be rethought in a proper way, since this study does not only focus on the RM process of households, but also aims to carry it to the macro-scale debates on the city. By this study such information is highlighted for the first time in micro point of view.

It is not the intent or in the scope of this paper to examine every single components of residential mobility that exists in the context of neoliberal urbanisation in Istanbul; rather to focus on the characteristics of origin/destination units (in this case 'district') and the relationship between moves, and the changes in demographic and socio-economic profile of

²Although data is not available for those who changed their house within the same district, the figures available refer to a massive mobility of people at any measure.

each districts. Here, this study does not interest in the motivations behind such RM, notwithstanding it aims to answer the two main questions 'Where do they move and Does it matter?' In the broader context, the main aim of this study is to examine the relationship between RM and urban change. This is why this study examines RM in two periods: 1985-1990 and 1995-2000 that represent significant demographic, economic and social changes affecting mobility decisions and the nature of mobility patterns in the city, respectively.

Data used in this study is drawn from the 1990 and 2000 Population Censuses, specifically the public use 'microdata sample file', which is a 5% sample of households in Istanbul. In order to highlight the characteristics of the spatial patterns of RM flows Kipnis' flow priority graph is used. The interrelationships between mobility rates/levels and urban setting are analysed by combining Kipnis' graph theory and "socio-economic development index" (hereafter SDI) methods. The significance of this study comes from that combined-method that used. Here, in this study, the socio-economic and demographic composition of neighbourhood of origin and destination to mobility patterns of movers is linked. To the best of our knowledge, this had not been done before.

The paper is organised as follows. Before introducing the results of empirical analysis, a brief review of RM literature and a synopsis of the changing structures of socio-spatial settings in Istanbul in the post-1980 period have been introduced. In the following section, B.A. Kipnis (1985)' flow priority Index and the socio-economic development index, one of the contributions of this study, are highlighted. In the fifth section, RM patterns in Istanbul as well as the selectivity of these movements and the effects of moves on urban socio-economic and demographic composition of districts are examined. Then, the Conclusion section summarises the findings and concludes the study.

RESIDENTIAL MOBILITY AS A RESTRUCTURING PROCESS OF URBAN GEOGRAPHY

Since the early 1950s sociologists, economists and psychologists have proposed a number of interdisciplinary studies of 'who, why, when, and where and how households move'. Numerous definitions of mobility can be found in the literature ranging from 'decision-making process' to 'spatial adjustment process' or 'a function of the household's dissatisfaction' or 'a result of changes in housing needs' or 'restructuring process of urban geography'.³

RM commonly refers to the local moves of population within a neighbourhood, city, or metropolitan area and is assumed as one of the influential decision-making processes which in turn is influenced by macro processes of economic, social and demographic changes in urban setting of a city (Cadwallader, 1992; Clark and Onaka, 1983; Clark, et al., 2003, Dieleman, 2001). In other words, the decisions about whether and where to move are determined to a large extent by economic, life-course, housing, and residential satisfaction

³Dieleman (2001) argued that contemporary residential mobility studies shifted their emphasis from the demand factors of households (e.g. family size, income, occupation career, life cycle events, and education attainments) to supply-side factors such as housing policy and local housing markets' characteristics Clark and Onaka (1983), Dieleman and Everaers (1994), Geist and McManus (2008) highlight the role of life-cycle events; Böheim and Taylor (1999), Clark (2009) indicate the role of income; Courgeau (1985), Clark and Winters (2007) analyse the role of family typology, on mobility. Besides, Huang and Clark (2002), Hui (2005) and Li (2003) point out the importance of the tenure choice, Teixeira and Murdie (1997) indicate the roles of developers, real estate agents, and Dieleman et al., (2000), Li and Sui (2001) and Vlist et al., (2002) focus on the differences of local housing market, in the residential mobility literature.

factors.⁴ In this sense, RM is a central phase of urban geography for it provides a spatial expression of the link between the households and the social structure, between housing processes and the spatial setting of the city (Ley, 1983; Knox and McCarthy, 2005).

In a similar fashion, Quigley and Weinberg (1977) claim that "the results or effects of RM decision are critical to understanding the changes in the spatial character of regions and of urban areas". In a same scope, Cadwallader (1982) claims that analysing the underlying processes related with residential moves' patterns is the crucial elements of understanding the changing socio-economic and demographic and spatial structure of the city. In taking a step forward, firstly Knox and Pinch (2000), then Feijten and van Ham (2009) indicate that studying RM is significant since it contributes to an understanding of the formation of urban space, which is comprises many individual movements at the macro-level.

RM studies could be classified into two main perspectives: micro and macro (Cadwallader, 1992; Quigley and Weinberg, 1977). The micro approach examines the movements of households at the individual level (Cadwallader, 1992; Quigley and Weinberg, 1977). Cadwallader (1982, 1992) said that as opposed to the micro approach to RM the macro approach is rooted in the ecological studies. Short (1978 cited in Cadwallader, 1992) claims that the macro approach focussed upon the spatial distribution of mobility rates associated with urban sub-areas, and the relationship between these mobility rates and other socioeconomic and demographic characteristics.

In this study, one of the main reasons for taking macro approach to RM is the widespread concern over the RM effects of urban space. Here, the statement is that other things equal, the socio-economic and demographic composition of the neighbourhood interlink with mobility likelihood of the movers (Clark and Morrison, 2012). Implicit in these conditions is the important assumption that the population is sufficiently mobile to match up social status and life-cycle needs to existing housing opportunities.

In order to understand the relationship between RM process and socio-spatial settings in Istanbul, one needs to look beyond RM phenomena because the decisions about whether and where to move are determined to a large extent by economic, life-course, housing, and urbanization dynamics.⁵ In this respect, what the following section attempted is to draw a guidelines of the neo-liberal urbanization that took place in Istanbul, as a background, within the trajectory from 1980s up until now.

THE BACKGROUND: ISTANBUL ON STAGE

İstanbul is the largest populated city in Turkey and the second largest metropolitan area in Europe after Moscow.⁶ By 2011, Istanbul's population reached approximately 14 million people (nearly one-fifth of Turkey's population), and the city's land area tripled from 1.800 km2 to 5.350 km2 over the fifty years, but its growth did not happen overnight.

⁴The most recent mobility research is defined by the household's housing aspirations, stage and timing of events in the family life cycle: life-course (Geist and McManus, 2008). In short, the impact of life-course approach and housing policy strategies 'the availability in housing market, the limitations in choosing housing and the stringency degree in housing market' on residential mobility studies are well-known.

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⁶Most Populous Metropolitan Areas in Europe available at: http://www.blatantworld.com/feature/europe/most_populous_metropolitan_areas.html

Istanbul's incredible growth was primarily due to the largest influx of immigrants in its history arrived to call the city home in the period of rapid urbanization, up until the 1980s.

Since the 1980s, neoliberalism is the dominant ideology shaping Turkish cities, especially İstanbul. The city began to regain its historical-regional role, and during the last three decades generated opportunities that supported the city's determined attempt to categorize itself as a Global City ⁷(Öncü and Keyder, 1993; Keyder, 1999a, 2005, 2006). Due to the limited scope of this study, whether Istanbul could be categorised as a global city is not the crucial point. Here, the unquestionable truth is that the neo-liberal globalization process has brought about highly problematic and uneven socio-spatial developments within the city in the post-1980 period.

Urbanization entered a new phase under mostly the pressure of neo-liberal policies after the 1980s. In the demographic sphere Istanbul became more older, the fertility rate decreased, the average household size decreased and the nuclear family replaced traditional extended family; in the economic sphere while industry was still the dominant sector service industry enlarged its share in economy; and in spatial sphere the peripheral urban areas occupied mostly by low-status groups were opened to middle and high-status groups residents like gated communities. Turkish cities faced new problems such as new urban poverty, segregation and suburbanization in addition to the inherited problem areas of previous era such as gecekondu and informal sector in the post-1980 period. Consequently, the dynamics of the urbanization after the 1980s can no longer be explained through the concepts and concerns of the preceding period such as gecekondu, informal sector, migration and poverty.

As Özdemir (2002) highlights, in Istanbul Metropolitan Area's development, a large series of factors has been influenced in the different scales from neo-liberal policies in national level to metropolitan governments in the local level. Put this reciprocal relationship in mind, regarding the implementations of neoliberal policies, three periods: 1983-1992, 1994-2002 and after 2002, of neoliberal urbanization in Istanbul are particularly striking. As Keyder (2010) stated that there is a shift from an 'informal, unstructured, and insufficiently institutionalized globalization (which was the case in 1980s and 1990s) towards a more formal and deliberate platform where the state has put in legitimate power and force to implement the urban agenda since 2002. What distinguishes the recent urban restructurings from the previous ones is arguably the scope and scale of the urban restructurings which are certainly providing plentiful distinctiveness for the RM processes of Istanbul.

By 1983, the year ANAP (Motherland Party 1983-1991) came to power, neoliberal policies were put into play and thus Turkey left 'a closed economic model based on heavy state intervention for a market-oriented development strategy' in the early 1980s (Buğra and Adar, 2008; Keyder, 2005). In the ANAP point of view, Istanbul started to be seen as the main gateway to the world for Turkey. The reflections of this era on urban setting (physical set-up and social structure) of the city were megaprojects like second bridge over Bosphorus, Trans European Motorway, enlargement of Ataturk International Airport, urban renewal projects in historical neighbourhoods like Tarlabaşı and Haliç, and etc.⁸

In terms of urban setting (urban systems, physical set-up, social structure and finally on the growth of Istanbul), Istanbul has witnessed the emergence of new socio-spatial

⁷The inability of the "Euro-American centric dominant theorizations of global city regions", used to analyse the emerging multiple forms of metropolitan modernities, like Istanbul. (Ananya, 2009) It also makes it difficult to propose clear-cut urban solutions for a variety of uniquely contextualized problems the city is facing.

⁸What happened in Tarlabası and other neighbourhoods in 1980s can be compared to what happened in Bronx of New York in 1950s by Robert Moses; a similar Hausmannian fashion, with the same Tabula rasa approach towards the existing fabric formed the basis for the urban renewal projects in Istanbul's of the 1980s.

formations partitioning the city into compartments, a process that continues today. Since the 1980s, as the city's exposure to private capital and investment skyrocketed, along with the tremendous increase in population numbers, the land use and building practices took a radical turn in Istanbul. Land hereafter is being perceived as one of the crucial components for investment and development, as a result of the commodification processes that came along with the neoliberal positioning of the city (Keyder, 2005). As Pinarcioğlu and Işık (2009) pointed out that "...the outskirts as well as the core of the city presented opportunities not just for the poor but also for middle and upper income groups who seeking to improve their quality of life and gain benefits from Istanbul's profitable property market after the 1990s".

With the 2002 elections, Turkey got a new single party government AKP (Justice and Development Party) which has governed the country since then. AKP government holds the belief that Turkey's future is absolutely dependent on Istanbul's future⁹, consequently, a very special treatment has been given to the city by the Central government, through making vast political, economic, and cultural resources available for the Istanbul Metropolitan Mayor. ¹⁰As Aksoy (2011) stated "Now every part of the city is exposed to radical change as more and more land is pulled into the market sphere, catapulting the whole of Istanbul into an irreversible process of large-scale urban development". Up until the 2000s, the contradiction among urban social groups has significantly heightened and an unequal spatial distribution has become more visible (Keyder, 2005, 2009; Türkün and Kurtuluş, 2005). In case, it should be noted that this restructuring includes deep transformations of spatial organization and built environment.

During the period of transition, the state's interventions in urbanization, especially in housing industry, were changed remarkably (Öncü, 1988; Tekeli, 1994, Keyder, 1999; Bozdoğan, 2002; Türel, 2002; Türel & Koç, 2007; Geniş, 2007; Özdemir, 2010). Soon after AKP came to power, and since 2004, as an agent of the state, TOKI (Mass Housing Development Agency)¹¹ has become the main actor in shaping the urban geography of the city. Urbanization has gained much more top-down characteristic in the last decade, as a result of the state putting in legitimate power and force to implement the urban agenda (Türkmen, 2011). Urban transformation projects became the main tool for transforming the incompletely commoditized informal housing areas and deprived inner-city neighbourhoods in the cities (Kuyucu and Ünsal, 2010).

Urban transformation projects in prestigious areas of the urban space are transferred in the best interests of particular urban social groups; mostly for wealthy in the post-1990

⁹To comprehend the significance of Istanbul for AKP, one needs to look at the Prime Minister. His views on the city: "Istanbul is one of the prominent cities in the world and in Turkey in terms of not just its history, tourism and culture but also its economic and commercial profile. I served as mayor in Istanbul for 4.5 years (1994-1998) and I had a goal, an ambition in those days to turn Istanbul into a financial capital. Of course, because it was different politics ruling in the central government we couldn't do it then. But now, we are in power in the central government, and also in Istanbul local government. We considered the pros and cons and decided to take prompt action to make Istanbul the financial centre. As we have expressed in our medium-term programme, we will accomplish this, mindful that it amounts to an important structural reform. Private sector financial institutions are already here, we are going to move public finance institutions as well as the regulatory bodies and organizations".

¹⁰Since Istanbul is being governed by an AKP administration, 2002, what has emerged is a total accord between central and local governments between Ankara, where the central government is seated, and Istanbul.

¹¹TOKI gained unprecedented powers, including forming partnerships with private construction companies and involvement in the construction and selling houses for profit, being able to take over state urban land at no cost with the approval of the prime ministry and the president's office, expropriation of urban land to construct housing projects, and developing and implementing gecekondu transformation projects (Bartu & Kolluoğlu, 2008).

period. Gecekondu areas and old valuable inner-city neighbourhoods, the neighbourhoods of the urban poor, will be emptied from its users and turned into prestige residential areas for an upper-class. An unfamiliar period has started on gecekondu areas in respect of former years. The large-scale developments directly fortify the capitalist property rights on urban periphery. This is the end of one of the important integration ways of low-status groups into urban. Due to TOKI's big share in the housing industry, Istanbul's future is heavily dependent on the path that TOKI is going to shape in the next decade. Considering the positively correlated relationship between the differentiation in urban settings and RM in a city, it can be assumed that RM in 1985-90 period is significantly different from RM in 1995-2000 period, in Istanbul.

THE METHOD

In the case of Istanbul, it is estimated that the relative importance of the socio-economic and demographic attributes of the movers and of neighbourhoods in analysing the relationship between RM and the urban change. Such an approach requires a specialized data and analysis.

The main focus of this study is the analysis of the mobility patterns between districts over two distinct periods: 1985-1990 and 1995-2000. The analysis mainly aims to explore the reciprocal interactions between RM and changes on urban setting in the scale of district through answering the two-sets of questions: (1) Are there specific spatial mobility patterns of households in the city, If so, what are the basic characteristics of mobility patterns and how are they differentiated in terms of social status, Are these mobility patterns differentiated between 1990 and 2000, and (2) How RM interlink with the socio-economic and demographic composition of districts' population?

RM is analysed by graph theory¹² which previously has only been used by a small number of mobility studies (Kipnis, 1985; Kipnis and Schnell, 1978; Nystuen and Daces, 1961; Holsman, 1975). The present paper discusses the contribution of the work of B.A. Kipnis, and his legacy of graph methods and approached, to the study of RM. Specifically, in this study, B.A. Kipnis' Flow Priority Graph is employed to analyse residential moves, partly because of the characteristics of data and partly because it is the most appropriate approach to answer the questions above. Flow priority exhibits RM preferences among regions of a M_{ii}matrix (Kipnis, 1985). The graphs are defined on the basis of a "0 flow

Priority Index (PR) in which

$$PR = \frac{Om_{ij} - Em_{ij}}{Em_{ij}}$$

where, ${^\prime}0m_{ij}{^\prime}$ is the total observed number of people who moved from region i to region j, and

$$Em_{ij} = mt \left(\frac{Pi}{Pt}\right) \left(\frac{Pj}{Pt}\right)$$

where, 'mt' is the total number of people who are residentially mobile in the whole urban area. Pi and Pj are the total population of area i and j respectively, and Pt is the total population of the urban area" (Kipnis, 1985).

¹² A graph is a kind of representation that consists of a set of points (an area under consideration such as places, districts or regions) and a set of lines represent the links between a pair of points. However, in residential mobility and migration studies, 'digraphs' (directed graphs) are used which reflect in the real world structural patterns of relations of a system under consideration (Kipnis, 1985).

To find how the overall mobility are balanced of each of origin/destination points, Kipnis (1985) developed two related indices: In-Migration Index and Out-Migration Index which are also used in this study and called 'In-comers Index' and Out-goers Index', respectively. The formula of former one

$$II = \left(\frac{i_m}{Pi}\right) / \left(\frac{mt}{Pt}\right)$$

in which I_m is the number of people entering region i. And the 'Out-goers Index' is similarly calculated as:

$$OI = \left(\frac{m_i}{P_i}\right) / \left(\frac{mt}{P_t}\right)$$

where m_i is the number of people leaving region i (Kipnis, 1985).

How RM relates with the socio-economic status of origin/destination points and Does RM selective? To this end, Kipnis (1985) developed 'average income index' which informs the socio-economic characteristics of destination points by using income composition of population. However, in this study, in order to answer these broad questions, I developed 'socio-economic development index (SDI). Because of its nature, SDI helps to gain more sensitive interpretation compare to Kipnis' 'an average index'.

SDI is an area level index, and is assigned to areas, not to individuals. It indicates the collective selected socio-economic and demographic status of the people living in an area. It may be assumed that relatively under-developed areas are likely to have a high proportion of people with illiterate, large household size and low labour force participation rate. However, such an area is also likely to contain people who do not reflect such characteristics, as well as people who are relatively high of socio-economic and demographic profile.

The formula of SDI:

Normalized Value =
$$\frac{(X_i - Min_i)}{(Max_i - Min_i)}$$

X_i, is the value of selected variable in selected district

 $Max_i - Min_i$, are the highest and lowest values the variable x, respectively.

Here, the point that has to be considered is that this normalization process is applied to "The higher the better" variables. "The lower the better" variables are normalized as Min=1 and Max=0. And, finally, as can be seen from the formula below, all these values are summed and are divided to the total number of variables (It means that this method is run without weight variables). And the total score is the SDI of selected district. In Table 1, the selected variables of SDI are illustrated.

$$SDI_i = \frac{total\ normalized\ value\ _i}{number\ of\ input\ vairables}$$

i =Selected district

The components measured which contribute to overall change in the socio-economic and demographic composition of neighbourhoods can be seen in Table 1. Education: Işık & Ataç (2011) examine the relationship between households' education level and their social

status: it is clear that households with higher education have a great propensity to be members of high-status groups in the society, vice versa.

Table 1: The components of SDI

		Min	Mari	Maan	
		Min	Max	Mean	=
A-Education	A ₁ - % literacy	88.37	98.65	95.04	The higher the level of the indicator, the more
B- Employment	A ₂ - % university graduates	1.26	29.93	8.02	developed the district The higher the level of the indicator, the more developed the district
	A ₃ - % Difference between male and female literacy	2.54	16.08	8.10	The lower the level of the indicator, the more developed the district
	B ₁ - % FIRE (Finance, Insurance, Real Estate) sector employment	3.06	21.68	8.84	The higher the level of the indicator, the more developed the district
	B ₂ - % Labour force participation	46.0	81.86	53.09	The higher the level of the indicator, the more developed the district
C- Demography	B ₃ - % Difference between male and female labour force participation rates	21.26	70.11	50.93	The lower the level of the indicator, the more developed the district
	C ₁ - Household size	3.31	5.07	4.10	The lower the level of the indicator, the more developed the district
	C ₂ - Child Women Ratio	157.89	641.24	380.38	The lower the level of the indicator, the more developed the district

Employment: Another employment indicator used in the development index is the difference between female and male labour force participation rates. In simplistic word, the lower rate of this variable indicates the high-level of development. Demography: Işık and Pınarcıoğlu (2006, 2010) show the reciprocal relationship between demography and socioeconomic development level of households. The household size and child women ratio variables are selected. As known, the Child Women Ratio and average household size has significantly decreased since the middle-1980s. While there is a close relationship between the income level and status of groups, the area with low Child Women Ratio and the average household size shows high-development profile. In the table above, the input variables of the Socio-economic Development Index are indicated.

As measures of development level, the index is ordinal. It can be used to rank areas, yet cannot be used to measure the size of the difference in development level between areas. For example: it cannot be interpreted that an area with an Index of Development value of for example 0.3 is twice as less-developed as an area with an index value of 0.6; and the difference in development between two areas with values of 0.7 and 0.8 is not necessarily the same as the difference between two areas with values of 0.8 and 0.9. Briefly, it is only used to distinguish whether the area is a high-developed or a less-developed.

And finally, the mutual data base for almost all graph analyses is a flow or FROM/TO matrix (M_{ij}) . The matrix consists of rows and columns with same labels in a corresponding sequence and it shows the relationship between a set of variables. In the case of Istanbul: i rows and j columns of the M_{ij} Istanbul with i=j=29, refer the origin and destination districts, respectively. In the light of the literature, it is right to say that by this study such information is highlighted for the first time.

This study is not without limitations. The major limitation is the lack of appropriate data that could take into account residential moves within districts themselves. While the data includes intra-districts moves, I assume that the major findings of this study are rectified. Another important problem of the data stems from the fact that the boundaries of geographical units change considerably between these censuses. The other limitation links with the physical geography of Istanbul: Istanbul is unique in straddling two continents. Bosphorus is a natural boundary between Anatolia side and European side, and the golden horn also creates another boundary at the southern end of the Bosphorus. In a sense, the city acts like the combination of three separated zones: Anatolia, Europe and Historical core. Nevertheless, the data do not allow calculating the effects of this physical geography of the city on RM process. Furthermore, data provides no information on the motivations underpinning RM flows. Census variables inform only usual place of residence so the circular patterns of RM are also among the drawbacks to measure of RM.

Next section examines spatially-dependent links of the movements between origin and destination districts and the effects of these moves on socio-economic and demographic composition of those districts.

THE FINDINGS

In Istanbul, raw 'mobility rate' was 10.8 % in 1990 and was 11.5 % in 2000. This means that the raw mobility rate of Istanbul rose with a small percentage increase (6.5%) between 1990 and 2000. As known, there are plenty of reasons for this shift such as increase in population, decrease in household size, and increase in education attainment levels of the society and the differentiation in housing stock regarding size, type and location, of housing units. As known, it is not interested in the motivations behind such residential mobility, notwithstanding which is particularly interested in to answer the questions 'Where do they move and Does it matter?'

The Patterns of Residential Movements

RM flows of Istanbul exhibit relatively complex patterns. In order to decrease this complexity as well as to show the relationship between RM and urban form, as a first step Istanbul's districts are grouped in three sub-groups by housing stocks' construction periods. And as a second step, it is calculated Flow priority From/To Matrix of Istanbul for each subgroups (see Table 2).

Table 2: The origin by destination matrix of move	ers in Istanbul 1995-2000, based on spatial
zones in Istanbul; Flow Pr	riority Index score

1995-2000		F	low-Priority Inc	- In comova	Out-goers Index	
			Destination	In-comers Index		
		Inner	Middle	Outer		
Origin	Inner-city*	-	-0.5	0.3	0.7	1.5
	Middle-suburb**s	-0.2	-	0.4	0.9	1.1
	Outer-suburbs***	-0.6	-0.3	-	1.2	0.8

^{*} Nearly more than half of its housing stock was constructed before the 1970s: Eminönü, Fatih, Beşiktaş, Şişli, Beyoğlu ** Nearly more than half of its housing stock was constructed in the period 1970-1990: Bakırköy, Bayrampaşa, Beykoz, Esenler, Sarıyer, Bağcılar, Kağıthane, Kadıköy, Güngören, Eyüp, Ümraniye, Bahçelievler, Üsküdar, Zeytinburnu *** Nearly more than half of its housing stock was constructed in the period 1990-2000: Pendik, Tuzla, Büyükçekmece, Sultanbeyli, Avcılar, Gaziosmanpaşa, Küçükçekmece, Kartal, Maltepe

People mostly tend to move to urban periphery. A closer look at the distribution of flow priority index value by sub-groups reveals that people tend to move from inner and middle zones towards the outer-zone of the city in 2000. As can be seen in Table 2, the priority index value of from inner-zone to outer-zone flows was 0.3 in 2000, while the priority index value of from inner-zone to middle-zone flows was only -0.5 in the same period.

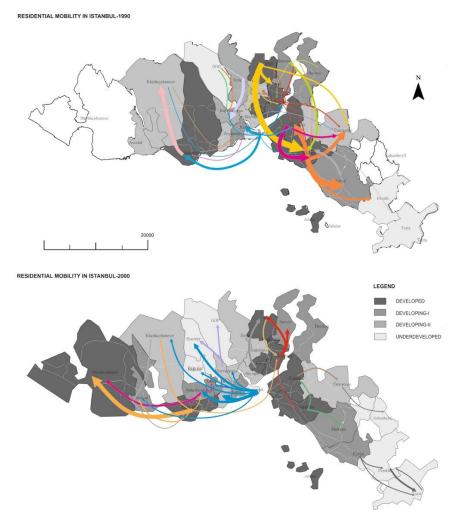


Figure 1: 1990 and 2000, Residential Mobility Flows Patterns

The in-comers and out-goers index values for each sub-group also fortify this tendency: in 2000 the in-comers index value of inner-zone was only 0.7, while for outer-zone

this value was 1.2. As known, by the opening Bosphorus and Fatih Sultan Mehmet Bridges with peripheral highways reinforce the suburbanization process in the city; and the finding above, in a way, reflect the results of these developments.

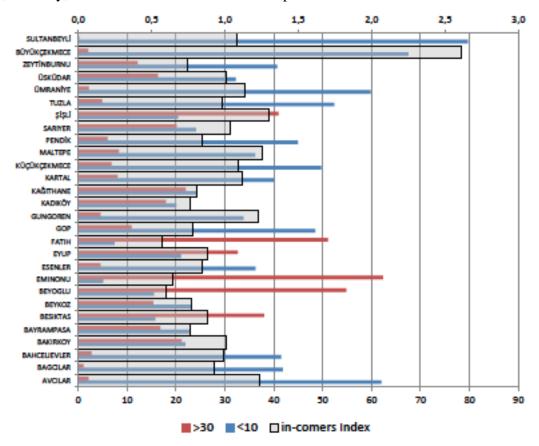


Figure 2: Housing stock by age and the in-comers index of districts in 2000

The quality of housing stock regardless of its type and tenure is likely to be a feature that people will consider when moving. In a similar fashion, the composition of the housing stock and the characteristics of the population living in the stock are the most important predictors of variation in mobility between districts (Quigley and Weinbeg 1977; Bailey and Livinston, 2007). Thus it is appropriate to assume that RM patterns of households are constrained by the existing set of spatial settings and housing opportunities in the city. In order to test this assumption, I examine the relationship between in-comers index and the age of housing stock, by districts in 2000.

In Figure 2, the bar chart illustrates the housing age (primary index) and the line, the in-comers index (secondary index) in 2000, by districts. It is clear that there is a negative relationship between RM and the housing age, of districts. This means that the availability of new housing stock in these areas has an increasing effect on RM. In simplistic words, districts with a large percentage of new buildings show the highest in-comers index. This assumption becomes more meaningful, considering the in-comers rates of those districts- Eminönü (the former CBD of the city) and Büyükçekmece (the most recent developed area in the city) 0.6 and 2.6, respectively. There is a tendency to move from old residential areas to the new developed residential areas mostly located in the outskirts of Istanbul such as Büyükçekmece and Maltepe (See Figure 1). This profile can be interpreted like that while the gap between housing stock age composition of district increase in favour of young housing units, the attractiveness of district increases in the case of Istanbul.

Table 3: In-comers and Out-goers Indices of Movers by education attainment level, 1990 and 2000

	Low-educated HHs			High-educated HHs				
	In-comers Index		Out-goers Index		In-comers Index		Out-goers Index	
	1990	2000	1990	2000	1990	2000	1990	2000
Avcılar		0,05		0,07		0.16	0.43	0.43
Bağcılar		0,06		0,04		0.05	0.07	0.07
Bahçelievler		0,04		0,03		0.17	0.29	0.29
Bakırköy	0,06	0,03	0,11	0,07	0.10	0.41	0.75	0.75
Bayrampaşa	0,14	0,02	0,07	0,05	0.08	0.05	0.13	0.13
Beşiktaş	0,02	0,02	0,08	0,06	0.28	0.50	0.78	0.78
Beykoz	0,03	0,01	0,04	0,03	0.05	0.22	0.12	0.12
Beyoğlu	0,05	0,04	0,14	0,07	0.06	0.10	0.19	0.19
Eminönü	0,03	0,10	0,28	0,48	0.06	0.06	0.77	0.77
Esenler		0,04		0,04		0.03	0.05	0.05
Eyüp	0,05	0,05	0,12	0,03	0.07	0.12	0.11	0.11
Fatih	0,04	0,02	0,07	0,09	0.07	0.11	0.40	0.40
Gazios manpaşa	0,08	0,06	0,05	0,03	0.03	0.03	0.05	0.05
Güngören		0,06		0,07		0.19	0.19	0.19
Kadıköy	0,03	0,01	0,02	0,04	0.28	0.36	0.40	0.40
Kağıthane	0,05	0,02	0,04	0,04	0.05	0.11	0.11	0.11
Kartal	0,03	0,04	0,04	0,05	0.14	0.18	0.12	0.12
Küçükçekmece	0,30	0,05	0,02	0,02	0.19	0.16	0.10	0.10
Maltepe		0,04		0,03		0.36	0.24	0.24
Pendik	0,08	0,05	0,02	0,02	0.07	0.10	0.09	0.09
Sarıyer	0,08	0,02	0,04	0,03	0.10	0.43	0.31	0.31
Şişli	0,03	0,05	0,19	0,06	0.14	0.49	0.41	0.41
Tuzla		0,07		0,02		0.17	0.21	0.21
Ümraniye	0,16	0,05	0,02	0,02	0.08	0.15	0.08	0.08
Üsküdar	0,03	0,03	0,06	0,03	0.18	0.35	0.27	0.27
Zeytinburnu	0,05	0,04	0,13	0,04	0.05	0.13	0.12	0.12
Büyükçekmece		0,06		0,01		0.77	0.05	0.05
Sultanbeyli		0,12		0,05		0.03	0.07	0.07

People tend to leave from historical core of the city. Considering the in-comers index value of inner-city, it is clear that people tend to move from historical core of the city and this is a one-way flow. However, on the contrary to the other inner-zone districts, the out-goers index values of Eminönü and Fatih (former CBD and former middle-class residential area, respectively) increased in the period between 1990 and 2000. As can be seen in Table 3, the out-goers index, of Eminönü increased from 4.2 in 1990 to 4.5 in 2000, of Fatih it increased from 1.2 to 1.7 in the same period. It is right to expect that this situation is closely related with decentralization of industry from inner-city since the early 1980s. Furthermore, this tendency is also in compatible with the labelling Eminönü as one of the touristic points of Istanbul in the post-1990 period. At the aggregate level, this indicates the decline of the historical core of the city.

High-status groups diffused from inner-city and tend to move towards the urban peripheral areas. Boyle et al. (1998) state that non-urban residential areas offer quality of life attractions, notably in terms of open space and better housing quality. These features are only available at a higher cost and therefore restrict low-income household's ability to reside in these locations. In this respect, Istanbul is not an exception. Mostly, the villa style settlement

located far from the city center and isolated from the other parts of the city was preferred by these groups. In majority, these villa sites or 'gated communities' were located in the forests whose accessibility to the city is easy via the provision of highways of D-100 and TEM. Especially after 1990, high-status households have mostly preferred to move to new suburban areas developed after the 1990s such as Büyükçekmece on the European side and Kadıköy on the Anatolian side of the city. This situation is closely linked with the characteristics of housing stock. In this sense, it is right to say that the residential mobility of high-status groups was dominated by mostly housing quality and housing type concerns in the post-1990 period. This is likely to reflect the counter-urbanising moves of the higher-educated households.

The Selectivity of Moves

In this study, educational attainment, more specifically the proportion of those who have no formal diploma and have higher level degree is taken as a criterion to illustrate the selectivity of groups in each district. Nord (1998) finds that the high-educated as well as the low-educated move in response to real economic opportunities, but the migration patterns of the two groups differ because the opportunities that attract them differently are mixed in varying proportions in different places.

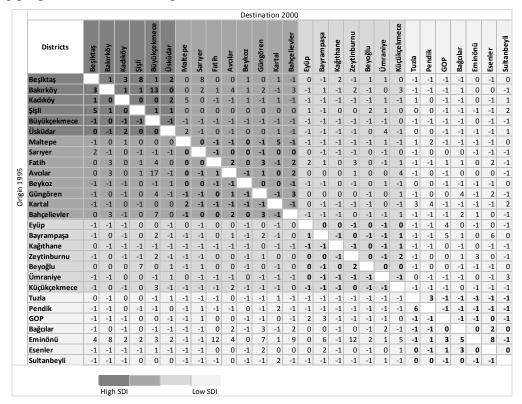


Figure 3: From/To Matrix by SDI

Districts located in the center attracted selected individuals from the other districts. Likewise, these districts lost proportionally high-educated households to the peripheral districts. Moreover, educated and urban groups were more among those who were able to stay in the peripheral districts than in the center (see Table 3).

People tend to live with people having similar profile or people with similar composition tend to concentrate in certain areas. The findings also show that while RM increases this tendency, contrary to migration. In a sense, RM increases the segmentation level in the city between 1990 and 2000.

While, the nature of mobility flows between neighbourhoods may be dominated by housing choices, the socioeconomic profile of a neighbourhood is also expected to be an important factor influencing mobility. Among the movers, the most frequent practice was to move within the same broad socio-economic category they left (Cadwallader, 1992; Işık and Pınarcıoğlu, 2009). In a similar fashion, North and Syrett (2006) claim that those who have more choice about where they live will choose areas where they are surrounded by others in similar or better economic circumstances to their own.

Figure 3 shows also that the mobility flows of districts within same SDI band show priority. The priority Index of the flows from Beşiktaş to Sarıyer and Şişli was 8, for the flows from Beşiktaş to Kadıköy it was 2 and for the flows from Beşiktaş to Bakırköy it was 1 in 2000. In a similar vein, the priority index of the flows towards Beşiktaş from Şişli was 5, from Kadıköy to Beşiktaş was 1, and from Bakırköy to Beşiktaş it was 3, in the same period. Of particular interest in light of these findings is the possibility that high-educated households might be more sensitive to the SDI level of districts when they move, in ways that further enhance their ability to upgrade.

Turnover is therefore lower in the low-SDI level districts. This supports existing theories about internal migration for deprived areas that presuppose those most able to move away will be more likely to do so. However, poor households will find it more difficult to escape the most deprived areas because even if they move they will not have the resources to move to less deprived areas. This tendency also collapses one of the important as well as a unique integration way of integration of low status groups' into urban society (Buğra, 2008). If the connection between the patterns of residential moves and the socio-economic and demographic composition of neighbourhood is to be better understood then I need to focus on the role of movers on socio-economic and demographic changes in Istanbul.

Moves Matter

In the light of this general trend, I turn to the main question of this study- namely, does RM matter. How the change in the socio-economic and demographic composition of districts as a result of moves, is measured is described below. I use difference between the SDI scores for all and SDI scores for immobiles plus migrants and divided by the SDI scores for all to generate the effect of movers:

$$MR = \frac{\Delta SDI_{ij}}{SDI_i}$$

where, ΔSDI_{ij} is the SDI score of the destination districts (j) minus the score of the district of origin (i). The effect of migrants is calculated in the same way as the effect of movers is measured.

In Figure 4, socio-economic development index (grey bar) is represented in the primary index, and in the secondary index the red bar represents the percentage contribution of in-comers (Movers) and the green bar represents the contribution of migrants (%) to the percentage change on socio-development index, by district in 2000. However, the effect of migrants is very small when taking into account movers and low-SDI status of a district. Socioeconomic neighbourhood change due to internal migration is driven by the action of migrants selectively moving between areas. There are numerous reasons why people move from place to place but the selection of an area of residence appears to be strongly related to a migrant's own socioeconomic status (Bailey and Livingston, 2007; Ioannides and Zabel, 2008).

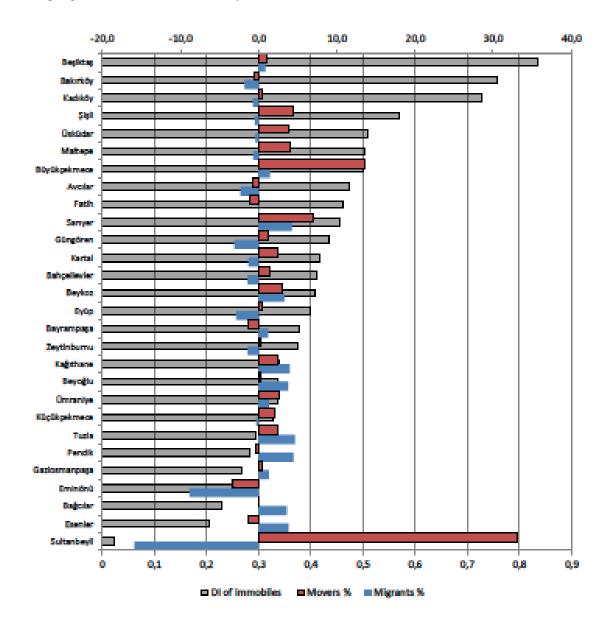


Figure 4: Socio-economic development Index, the contribution (%) by movers and migrants to development Index, by districts during the five-year period (1995-2000)

For district with higher SDI score, movers are mostly responsible for the increase in the socio-economic development. The in-comers of most of the higher development districts have similar or higher socio-economic status compared to the immobiles' composition of those districts. Besides, the in-comers to those districts have compensated the negative contribution of the immigrants to the development index changes in such districts.

Another generality derived from the findings is that in peripheral districts of the city such as Beykoz, Büyükçekmece, Sarıyer, Kağıthane and Gaziosmanpaşa, either immigrants or in-comers have an increase effect on socio-economic development index.

While the decrease in the socio-economic development index of most of the inner-city districts (Beşiktaş, Beyoğlu and Şişli) accounts for the in-comers' contributions, migrants are significantly responsible for the deprivation of the historical core of the city in this period. It can be seen from the table above, migrants and in-comers to Eminönü decreased socio-economic index of district by approximately -12.2% in total. Out of this, the contribution of

migrants to this change is approximately -9% and the remaining -3.4% is contributed by incomers of Eminönü.

The other generality shows that migrants are responsible for the increase in the socio-economic development index of lower development districts of Istanbul such as Bağcılar, Tuzla, Ümraniye, Esenler and Pendik. The immigrants and in-comers are responsible for approximately 7.1 % increase in the socio-economic development index of Tuzla. Out of this, migrants account for 4.7% of the increase whereas in-comers are responsible for the remaining 2.4. This means that in the case of lower development districts the inflows of immigration play a leading role on the increase of the socio-economic development level. In other words, migrants are mainly responsible for population composition changes at lower development districts.

CONCLUSION

The findings illustrate that over time, the residential moves and the changes that they bring ultimately effect and transform the population composition as well as the spatial structure of neighbourhoods. In simplistic word, neighbourhoods change as people move in and out. Here, the focus is specifically on the effects of residential moves on the districts' socio-economic composition where they move.

In the light of the findings, it is right to say that sub-urbanization process increased and diversified regarding RM preferences of population. The other important finding is that RM in Istanbul is selective in terms of movers' education profile. Within this process, the role of high-status group is important. High-status groups left the historical core of the city and mostly move towards new residential areas such as sites and gated communities located in the urban peripheral districts. In other words, they passed through the middle-income housing areas located on highway of D-100 (buffer zone between high-income residential areas along with Bosphorus and forest areas in north of the city) and they move to high-security enclaves. This profile shows that in making their RM decision; high-status groups may exercise choice over a wide spectrum of city and of housing markets within a city. In a sense, this composition can be interpreted as the increase in the role of high-status groups on restructuring of Istanbul's urbanization after the mid-1990s. Meantime, the low-status groups stuck in the city. Housing market conditions of the city can serve much appropriate explanation on the changes in RM of low-status groups in the city of Istanbul during these periods. As previously mentioned, RM operates smoothly when local housing market is appropriate to supply the housing preferences of all segments of the society. In compatible with this point of view, it is clear that between 1990 and 2000, for high-status groups the housing opportunities increased in terms of location, size and typology. On the other hand, for low-status groups the situation was quite opposite.

Due to the previous discussions, it is possible to depict three tendencies in RM in Istanbul in the post-2000 period. Interventions on socio-spatial setting of Istanbul such as urban transformation in old gecekondu areas directly increase the housing problem of urban poor. In this scope, it is assumed that their RM rate will decrease significantly in the post-2000 period and they mostly move towards TOKI's mass housing projects at the urban periphery. Whereas middle-income groups unevenly distributed among the city up until the 2000, their tendency is to move towards semi-luxury and secured housing units in urban periphery in the post-2000 period. Large-scale builders constructed residential units for middle-income groups at the peripheral urban areas and this tendency has gained speed after the second half of 2000s. In the former period the direction of suburbanization was towards northern part of the city; by 2004 with the huge construction activities of TOKI this occurred throughout east-west direction of the city. Wealthy groups in the post-2000 period will

become more mobile than those in previous periods. This is closely interlinked with the weighted role of those groups in the social and spatial structure of the city as well as the response of housing industry by 2005. Both, the high-secured residential areas in the urban periphery and the gentrified neighbourhood in the historical core of the city are the targets of this group. This means that restructuring of Istanbul mainly aims to satisfy the demands and needs of wealthy groups which are also in compatible with the demands and interventions of neo-liberal urbanism.

To sum, this study tries to draw the contours of the socio-spatial changes in the city of Istanbul through RM process of households up until the 2000. In the light of the findings of the research, it is appropriate to assume that in the post-2000 period RM increases residential segmentation level in Istanbul. The interrelation between residential mobility and residential segregation deserves further investigations on the possible consequences of restructuring process of Istanbul to reveal the future of the city.

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