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RESEARCH ARTICLE

Emerging Spatial Disparity: A Case Study of the Iranian Capital of Tehran

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Today's urban life has encountered with a number of challenges especially in social and spatial arenas. Socio-economic inequalities, sometimes, emerges in the form of spatial inequality. Tehran, as a metropolis and capital, enjoys effective system with higher sensitivities in national system. The city, though, with a multi and complex system has brought a large population under its arena but at the same time it is considered imbalanced with continuous growth and development. In other words, Tehran, despite a role model for macro socio-economic system, suffers from spatial disparity and imbalanced services. One of the most obvious and sharp characteristics of Tehran is its north-south spatial inequality and polarization thanks to modernisation and its elements such as cars and emerging business districts. In the post-1979 Islamic revolution, the gap between rich and poor and spatial inequality in Tehran has widened despite the promise otherwise. Urban planners and sociologists in Iran have conflicting views about the spatial disparity where some call it a historical trend and nothing to do with the globalisation process whereas others think vice versa. To know whether or not Tehran can be called a global city, the current paper tries to illustrate old and new emerging inequality patterns in Tehran. For that matter, the theory of 'Global City' (propounded by Saskia Sassen) has been analyzed based on spatial maps between 1996 and 2006.

Keywords: Socio-economic Inequality; Polarization; Spatial Inequality; Tehran.

1. Introduction

Global city is one of globalization phenomenon which highlights international flows of information, goods, labour and capital with different functions and domains such as political, cultural, and infrastructural characteristics in global economic system. Global cities also suffer from growing social and spatial inequality as found by Sasika Sassen (1986, 1987, 1991) in his studies on different global cities in three continent (London, New York and Tokyo). Manuell Castells (1989:343) and Saskia Sassen (1991) believe that observed social polarization (Sassen)

or new urban dualism (Castells) patterns in New York and Los Angeles could be universalized to other global cities.

Social polarization is an important challenge in today's urban life. Socio-economic polarization and inequalities occur in the form of spatial inequality (Castells 1989:227). In other words, the spatial inequality is a kind of social disorder that highlights unequal distribution of opportunities and positions. On the other side, unequal urban spaces lead itself to deepening class distinction. With regard to spatial inequality damages, one can point to deprivation of the possibility of optimum use of social space, coordination with other social inequalities, geographical concentration of poverty and intensification of segregation and polarization, weakening of spatial and social coherence, prevention of optimum spatial allocation as well as a balanced population distribution through intensifying migrations.

The spatial inequality in Tehran is widely believed to be a historical trend (Madanipour, 1998) and not because of globalization however, some others relate them to the globalization process itself.

Sassen's social polarization theory (1991) indicates that changes in social structure are the outcome of changes in economy structure that means service sector increases while production decreases. While trying to find out relation between spatial inequality and social disparity and injustice, this paper illustrates spatial inequality and using maps and longitudinal data in Tehran translates social polarization to spatial inequality.

2. Tehran Metropolis

Since 1795, Tehran has been the capital of Iran, with population of 8,429,807 (Iran Statistical Centre, 2010). The city encompasses not only the largest urban space in Iran but has turned one of the largest cities in West Asia and in the world. As an economic hub, many of Iran's public sector workforce and a large number of industrial firms are located in Tehran.

Still, considering Tehran as a global city remains a controversial and challenging issue. In 1998, Peter Taylor (GaWC) listed Tehran as a global city but he deleted it from the list of global cities in 2004. John Rennie Short (2004) referred Tehran as a "black hole". According to him, in the global urban network "global cities are big, but not all big cities are global" (Ibid). As such, it is arguable that Tehran has invisible and semi-visible connections to many other global cities such as Dubai, Istanbul, and Los Angeles. These visible and semi-visible connections are remarkable due to political, historical, economic, and cultural context and background. Perhaps, Rennie Short did not see the other side of the black hole (Tehran) despite of having an interesting quantitative analytical approach.

Spatial Inequality in Tehran

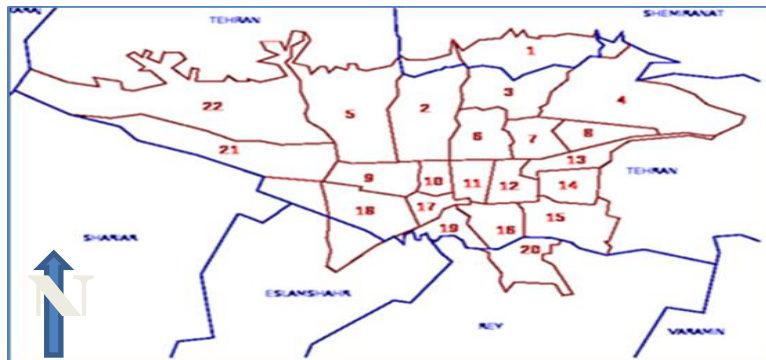
North-South spatial inequality and polarization are among the most obvious and sharp characteristics of Tehran. These were largely because of the process of modernization and its

elements such as cars and new business districts. The polarization continued even after the 1979 revolution despite promises of equality and improvement in life style (Madnipour, 1998).

The current paper takes into account some available indices to present and visualize the urban spatial inequalities. However, there are other effective macro factors which are also important to analysis the spatial inequality and disparities in Tehran. At macro level, for socio-spatial inequalities, effects of geography, economy, and history should have taken into consideration (World Bank, 2011).

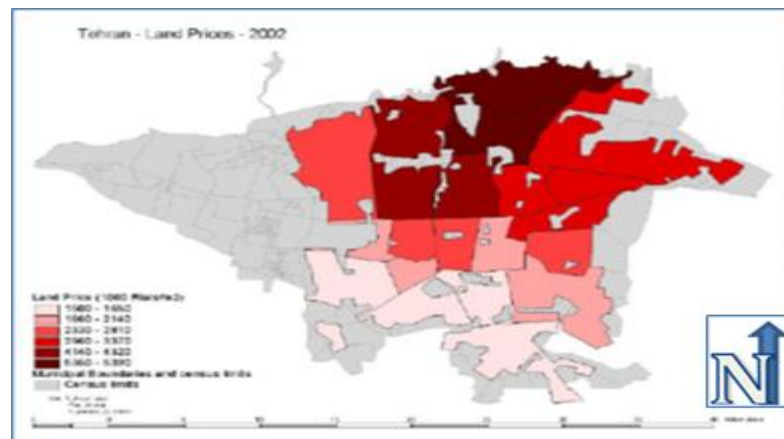
The result of macro factors in the Middle East and North Africa (MENA) shows that social and spatial inequality is inevitable there because of lack of equal potential resources and opportunities needed for a balanced development. With regard to Tehran, the most important consequences of inequality is uneven development and a high spatial concentration of economic and human capital that lead to many social problems such as inflow of migrants. In other words, the concentration of facilities and capital attract people from different parts of the country not only for white collar (higher paid) job but also for blue collar (lower-paid) work. In fact, the social disparity is a simple concept which shows “gaps in living standards between people in different places” (World Bank, 2011). In fact, these gaps are filled by the people coming to big cities such as Tehran for their livelihood.

Among many key data sets, the paper chooses seven parameters (land price, family size, population density, recreational spaces, housing ownership, number of managers and experts, and number of unskilled workers) as the most relevant indices for social and spatial inequalities and injustices in different parts of the city (Source: Tehran Municipality). It is worth mentioning that Tehran is divided into 22 districts each with its own administrative centre (Map1).



Map 1 Administrative Map *Source:* Tehran Municipality (Atlas of Tehran)

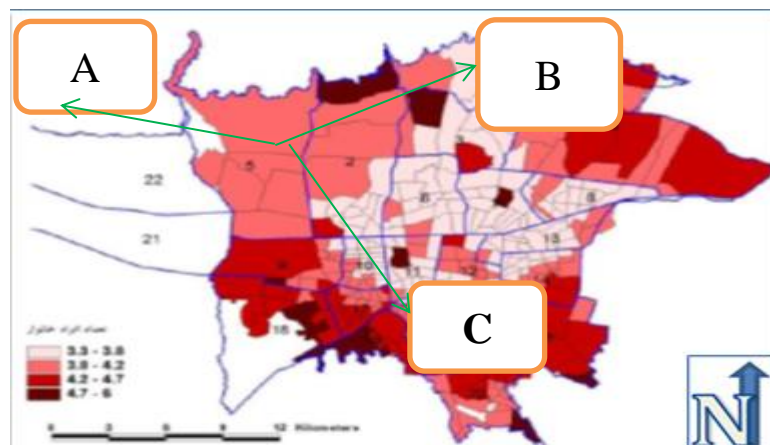
3.1. Land Price



Map 2 Land Price

Map (2) presents the land price in 22 divisions of the Tehran metropolis. Fundamentally, a difference in property value implicitly reflects affordability, income, or residences in that specific area. The map shows six categories where the north-south stratification is evident. The property value decreases southward with the vast difference between the highest price in District 1 and 3 and the lowest price variably in District 18, 19, and 20. It must be understood that the land price of an area has direct relations with other economic factors, facilities and services.

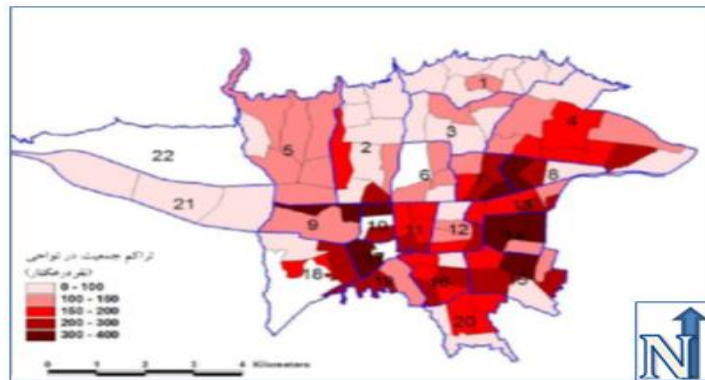
3.2. Family Size



Map 3 Family Size

As portrayed in this map, family size in southern parts of Tehran is bigger than the central parts. However, in northern part, District 3 is seen hotspot largely affected by new large scale residential projects for public sector employees (A, B, and C). The family concentration in the southern part is understandable as land price and rent are more affordable there for internal migrants. These newcomers usually have bigger family size. In addition, the birth rate is higher compared to other parts.

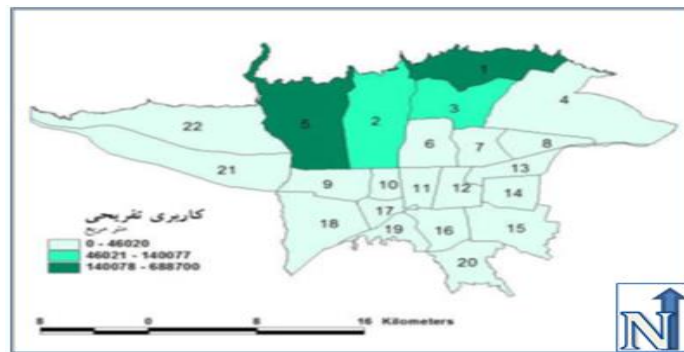
3.3. Population Density



Map 4 Population Density

The population density follows the same pattern as that of the family size. District 4 and 5 are newly developed parts and to some extent populated. But, the land price increased dramatically during recent years.

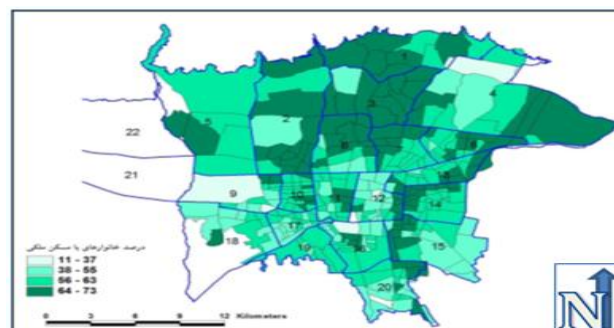
3.4. Recreational Spaces



Map 5 Recreational Spaces

Category (3) in this map presents the northern parts (District 1, 2, 3, and 5) that enjoy more recreational spaces than other districts. This has a meaningful relation with the land price hence; the map highlights the social injustice in different areas.

3.5. Housing Ownership

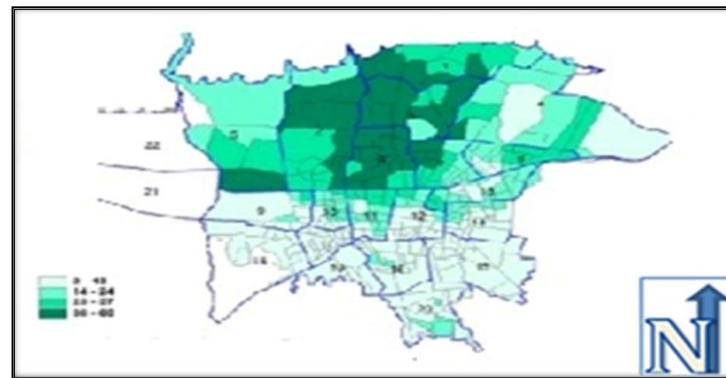


Map 6 Housing Ownership

The above map shows a variation in residential areas with a majority of people in the north having their own houses while the southern part is dominant with tenants. Meanwhile, the east-west variation is due to development projects (especially when the land price was not

too high). Arguably, the housing ownership index is uninterrupted and ambiguous as it does not reflect the required quality, facilities, and services.

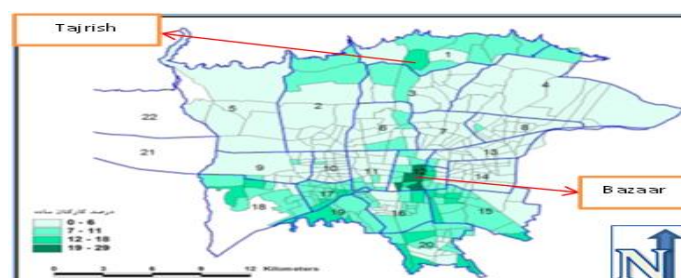
3.6. *Managers and Experts*



Map7 Area-wise Survey of Managers and Experts

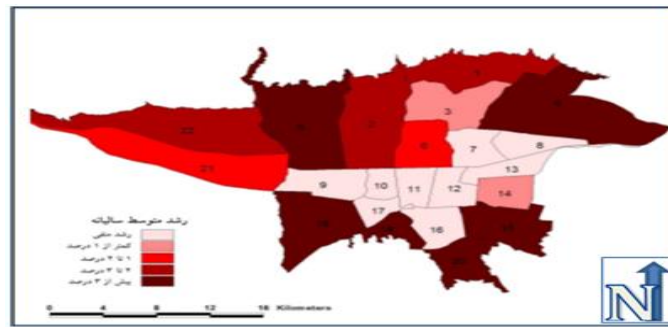
The above map gives a glimpse of highly-skilled workers classified into four based on their educational qualifications. In fact, the map highlights the spatial gap between educated people and unskilled workers in Tehran. Nevertheless, it explicitly obeys other indices such as land price, housing ownership, and family size.

3.7. *Number of Unskilled Workers*



Map 8 Unskilled Workers' Concentration

The unskilled workers index is yet another criterion to ascertain spatial and social inequality in Tehran. It must be noted that an unpredictable concentration of unskilled workers in the north as the above map reflects, is related to some specific jobs such as restaurant, car-wash, and gardening. Also, most of these workers live in slums or at their workplace with least or no hygienic facilities. These can be compared with hidden slums of Singapore and Dubai. With the passage of time, northern Tehran has incorporated some old villages (Ganes, 1982) but now these have different fabrics, people, and housing condition (even accent) such as Zargandeh, Dehvanak, and Rostam Abad. In other words, these villages merged with Tehran in the course of the last century with some of them turning as hotspots such as Tajirsh Bazaar and its vicinity in the north, Grand Bazaar in the south.



Map 9 Population Growth in Tehran

To some extent, the above map looks other than the ideal north-south spatial inequality hence; an identical population density is shown in either part. The lowest population rate in the north would have been a common guess but surprisingly as the map shows, the lowest rate is pertained to the centre of Tehran. The higher concentration in the north may be due to: a) Hidden slums (District 1, 2, 3, and 6). Home offices are also common in District 2 and 6, even run by well-educated lot. District 6 is also the business hub of Tehran. b) New developed area (5, 22, 4), and c) Emerging west-east spatial inequality in Tehran (5, 22).

4. Analysis and Discussion

Taking into account Sasika Sassen theory of social polarization in global cities, the current paper intended to analyse spatial inequality in Tehran metropolis. The aim was also to increase sensitivity of city management to problems of social and spatial inequalities. For that matter, the author took help of survey as well as socioeconomic and demographic data. The scale of maps was 1:250 000 which was the basis for data integration.

4.1. Change in Occupational Structure

A reliable data showing income in Tehran is missing nevertheless; the following table highlights a change in occupational structure that could be ascertained from 1996 and 2006 surveys.

Table1 Occupational Structure in Tehran (1996 and 2006)

| Occupation | Total Number Year - 1996 | Total Number Year - 2006 | Percentage 1996 | Percentage 2006 | Change |
|---------------------|-----------------------------|-----------------------------|--------------------|--------------------|--------|
| Manager and experts | 681800 | 1173377 | 18.94 | 22.32 | +3.38 |
| Services | 1664126 | 2448722 | 46.23 | 46.58 | +0.35 |
| Production | 810688 | 959348 | 22.52 | 18.25 | -4.27 |
| Unskilled workers | 63384 | 315172 | 1.76 | 6.00 | +4.24 |
| Unknown | 379935 | 361602 | 10.55 | 6.85 | -3.7 |
| Total | 3599933 | 5258221 | 100.00 | 100.00 | 0.00 |

Source: Iran Statistical Centre (Tehran Occupations Statistics, 1996 and 2006 Survey, Originally 42 and 36 classes reclassified into 4 classes by the author).

As the table shows, the number of managers and experts (upper strata) and unskilled workers (lower strata) shot up in Tehran between 1996 and 2006. But there were no change in the service sector although that must have witnessed a rise according to the global city thesis. At the same time, data from Iran Statistics Centre shows a country-wide decrease in production rate but an increase in service share rate. Moreover, gross domestic product (GDP) decreased dramatically (Word Bank Reports, from 2000 to 2009) because of the West's anti-Iran sanctions and accelerated with the global economic crisis during the same period of time.

4.2. Ecological Fallacy and Life Style

The Iranian life style is less individualistic than those in the West. Still, there are some, not all, who want to keep their relation and avoid spatial or geographical distance with their family, friends (Tuan, 1974). In other words, one can occasionally see an affluent person living in a deprived and poor locality and that's because he wants to remain close to his nears and dears. As a matter of fact, the geographical position of a person or family cannot be generalized for everyone living in that area. The problem of ecological fallacy is also akin to this issue that needs further studies [1].

4.3. Modifiable Areal Unit Problem (MAUP)

To illustrate the spatial inequality, categorical maps were used in this study. However, like other studies, this too encountered with some critical issues. The modifiable areal unit problem (MAUP) is the one according to which, "the interpretation of a geographical phenomenon within a map depends on the scale and partitioning of the areal units imposed on the map" (Hayward, Peter, and Parent Jason, 2009). MAUP consists of two main problems: scale and zoning effect. First, using different scales possibly could reveal different patterns and facts pertained to existing social and spatial inequality and its resources within the city. There are different types of social disparities that are not easy to understand and explore. The geographic information system (GIS) is an effective research tool for finding the hidden social structure and trend in a city. It is hard to accept that Tehran completely and totally bipolarized, to be more precise, there are a lot of well flourished and well-serviced people and good atmosphere prevailed in southern part of the city; on the contrary, many deprived people and regions are in the northern part (Map 8).

Changing the scale is essential to detect hotspots such as Tehran Grand Bazaar, which could be an interesting subject for more studies with regard to the spatial inequality. In fact, this place brings into mind what spatial inequality is all about? Whether or not related to context and scale in Tehran? Despite being located in the southern part as well as in dilapidated circumstances with high risk of fire and downfall, bazaar is the business and economic hub of not only Tehran but Iran as well. One cannot deny the socio-economic inequality within the bazaar which is obvious between the rich (businessmen) and the poor (unskilled workers specific teenagers). On At the same, there is a sharp and deep land price fault between bazaar and its neighbourhood.

Zoning effect is another problem. The maps used in this paper have been produced by Tehran Municipality based on census and the data has been aggregated within each census tract. These census tracts are defined arbitrarily according to some physical barriers or other reasons such as block, transportation network or official territorial zones.

Last but not the least, interpolation and extrapolation, gathering and sampling methods, and spatial analysis techniques could change and distort some facts about (spatial) inequality in Tehran.

4.4. Migration

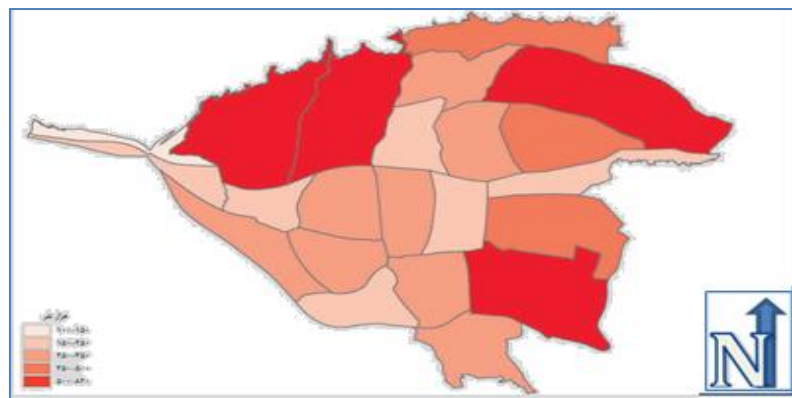
The population growth in Tehran remains very high, but the city has so far lacked a precise household survey with a detailed migration module. Neither the municipality nor the central government has reliable statistics. Tehran witnesses migration on almost hourly basis with many come to this megacity permanently while some temporarily, and even daily from all provinces. Tehran population is changeable day and night as a plethora of men, women, students, skilled and unskilled workers come to this city for work, shopping, study, recursion, and various other activities during the day and return to other big and satellite cities surrounding Tehran such as Karaj located on the western fringe with 1,377,450 residents (2006). Also, the population growth is higher in the southern part considering the fact that the land price (Map 2) is lower and more affordable in that area for newcomers and migrants (Map 9).

4.5. New West-East Spatial Inequality in Tehran

A mere glimpse on municipality projects and an analysis of maps could lead us to new emerging west-east spatial and social inequality in Tehran which has been ignored (Districts 5 and 22). The western part is more vibrant and developed than the east which has more highways, parks, universities, and shopping centers. Spatial-based demographic analyses could be a good proof for this new emerging trend (Map 9) especially since youth, educated and the rich prefer western part to live in.

In other words, since north western region of Tehran is young and more organized with cultural and recreational spaces and modern shopping centres it seems, this part of city is creating a new social class with specific characters namely educationally well, demographically young, ideologically and politically moderate, originally migrant, socially active and vibrant, and economically unstable, that the authors do not want to coin a name for them. Certainly, this new urban social class plays an effective role for change and transform but the relationship between this new emerging class and environment needs more research. But the question as why do these people go there? is perhaps that Tehran is surrounded by mountains in north and east that act as physical barrier for further urban development hence; the only possible and potential area remains is the western part (even Greek planner Constantinos Doxiadis had proposed this area for further city development in Tehran Action Plan). Also, the western part is preferred because it enjoys environmental condition similar to the northern part.

Moreover, land price is cheaper than other parts considering available services i.e. good accessibility to other parts through well-developed highways and streets. Recently, Tehran municipality, Statistics and Information Technology Organization have also came up with atlas showing indices such as economic activities, land price, quality of housing, urban services and facilities, air pollution, and population density. These maps too confirm preference of young and educated people for the north western and recently developed region. Map (10) shows this trend very well.



Map (10): Cartogram of Population (2006) [2]

5. Conclusion

The current paper with the help of different maps and taking into account Saskia Sassen's theory has tried to show the emerging spatial inequality in Tehran.

Since Tehran metropolis was the case study, the paper highlighted a clear social polarization as explained by Sassen's occupational structure change. Whether or not this polarization has linkage with globalization is to be tested, author strongly believes that the city possess invisible global network-politically and economically. Forms of spatial inequality in global cities can vary. Explain spatial inequality remains a difficult task but the map analysis shows a clear socio-economic division between northern and southern Tehran. Even though there are historical arguments justifying the event and cultural reason such as family-connection to such a division but that also not void of the methodology scale bias. Furthermore, the new west-east spatial movement adds more complications in studying relationship between social structure and urban landscape, which author finds worthwhile for interested researchers to look into.

The paper has also tried to highlight the inequality trend through occupational structure. Accordingly, Table 1 shows 4.27% declined in production sector in Tehran. But Sassen argues that when the production industry started to decline and service industry started to grow due to information & communication technology.

The main idea of Sassen's global city is that the growth of service industry creates more professional and specialized jobs. Yet in order to support such workforce, low-skilled jobs such as cleaner, construction workers, security guards, drivers, etc also increased. As a matter of fact, there is increase on both ends (the rich/top and poor/bottom) in social structure, resulting more rich people and more poor people. Table 1 also shows the increase in managerial work +3.83

percent and unskilled workers of +4.42 percent which again is going in accordance with Sassen's argument.

If we accept the global city theory, we must consider that social and spatial polarization in Tehran was produced by diverse factors such policies related to urban management, land and infrastructure development, and domestic migration. Insufficient spatial policies, carelessness and weakness in urban management are some of the important factors behind lack of control of spatial inequality in Tehran. At the same time, one cannot forget factors like Iran-Iraq war, burden inflicted on the country by the West's sanctions that too led to urban mismanagement and mass domestic immigration to Tehran.

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نابرابری فضایی در حال ظهور؛ مطالعه موردی: شهر تهران

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چکیده

زندگی شهری امروزی با چالش های متعددی به ویژه در عرصه های اجتماعی و فضایی مواجه شده است. نابرابری های اقتصادی-اجتماعی گاهی به شکل نابرابری فضایی ظاهر می شوند. تهران به عنوان یک کلان شهر و پایتخت از سیستمی موثر با حساسیت های بالاتر در نظام ملی برخوردار است. این شهر اگرچه با سیستمی چندگانه و پیچیده جمعیت زیادی را در عرصه خود آورده است اما در عین حال با رشد و توسعه مستمر نامتعادل تلقی می شود. به عبارت دیگر، تهران علیرغم الگوی کلان نظام اجتماعی-اقتصادی، از نابرابری فضایی و خدمات نامتعادل رنج می برد. یکی از بارزترین و واضح ترین ویژگی های تهران، نابرابری و قطبی شدن فضایی شمال به جنوب آن به لطف مدرن سازی و عناصر آن مانند خودروها و مناطق تجاری نوظهور است. پس از پیروزی انقلاب اسلامی در سال ۱۹۷۹، شکاف بین فقرا و ثروتمندها و نابرابری فضایی در تهران علی رغم وعده های دیگر افزایش یافته است. برنامه ریزان شهری و جامعه شناسان در ایران دیدگاه های متناقضی درباره نابرابری فضایی دارند که برخی آن را یک روند تاریخی می دانند و ربطی به فرآیند جهانی شدن ندارد، در حالی که برخی برعکس فکر میکنند. برای اینکه بدانیم آیا تهران را می توان یک شهر جهانی نامید یا نه، مقاله حاضر سعی دارد الگوهای نابرابری در حال ظهور قدیم و جدید در تهران را نشان دهد. برای این موضوع، نظریه «شهر جهانی» (که توسط ساسکیا ساسن مطرح شده است) بین سال های ۱۹۹۶ و ۲۰۰۶ بر اساس نقشه فضایی تجزیه و تحلیل شده است.

کلیدواژگان: نابرابری اجتماعی-اقتصادی؛ قطبی شدن؛ نابرابری فضایی؛ تهران.

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