# **Determinations of Urban Political Ecology: The Distribution Pattern Canopy Cover of Tree and Spatial inequality in Tehran**

T. Karami, M. Soleimani, H. Afrakhteh, H. Hataminejad

Received: April 20, 2011/ Accepted: Decdmber 15, 2011, 1-4 P

## **Extended** abstract

### **1-Introduction**

Inequality of green space distribution is a type of social production which by creating uneven ecological conditions in a feedback cycle plays its role on the quality of and intensification environment of inside urban imbalances the living environment. Most of the studies conducted so far have focused on the development or distribution of public green space but the truth is that public green spaces have not been the only source of urban metabolism (from the viewpoint of green space function) and a great part of the role of urban green space is undertaken by private green spaces. "What effect do private greeneries located in

### Author (s)

#### T. Karami (🖂)

Ph.D of Geography and Urban planning, Kharazmi University, Tehran, Iran

## e-mail: Karami\_ta@yahoo.com

#### M. Soleimani

Associate Professor of Geography and Urban planning, Kharazmi University, Tehran, Iran

#### H. Afrakhteh

Professor of Geography and Rural planning, Kharazmi University, Tehran, Iran

#### H. Hataminejad

Associate Professor of Geography and urban planning, University of Tehran, Tehran, Iran

residential areas have on the quality of citizens' life or what kind of reality is asserted by their development and distribution pattern in the urban life of today's modern society" were issues of less attention. Thus, considering the interconnection of green space production and distribution pattern (public and private) with the rest of natural, social, economic and fabric conditions, the present research benefits from NDVI (Normalized Difference Vegetation Index) as a dependent variable which has been influenced by ecological, social, fabric and economic variables and has analyzed them to identify effective factors in Tehran inequality urban green space. The present article theoretically makes use of urban political ecology approach and is considered a correlational research. The required data have been prepared and analyzed by some types of software such as ArcGIS, ArcView, IDRISI, ERDAS Imagine, and SPSS. In conducting this research some techniques have been used such as; "Average Distance to Nearest Neighbor", "Square Analysis",

### URS Journal

"Correlational Analysis and Factor Analysis".

## **2-Theoretical basis**

The present study is theoretically based on an urban political ecology approach. Urban components including green space from urban political ecological perspective are considered a kind of social production imagination and change whose are influenced by political economy, dominant pattern of public and private ownership in society (Heynen, Perkins and Roy, 2006: 3). The aforementioned perspective clearly states that urban material conditions which environment too includes urban are controlled and manipulated by the elite and city experts to serve their interests. This issue is conducive to make some of the urban social groups marginalized and deprived from natural riches and urban environmental artifacts. As a result, the quality of urban environment (physically and socially) increases in some neighborhoods and decreases in others (Heynen, Kaika and Swyngedouw, 2006: 1-15). Since unequal greenery distribution imbalanced creating ecological with conditions often plays its role in a feedback environment quality cvcle on and intensification of inequalities within urban life environment, the present study uses pattern of canopy distribution located in areas of residential uses (private and public) to reveal social, economic and spatial inequalities in Tehran.

## **3- Discussion**

The results of this research in relation to Tehran city confirm the determining position of urban political ecology in forming distribution pattern and density of trees canopy located in areas of Tehran. This is a subject which is confirmed by studies

conducted on urban green space (including public and private) in the cities such as San Diego, Toronto (by Perkins, Heynen and Wilson 2004, Scobedo and colleagues 2005, Heynen, Perkins and Roy 2006 and Conway, Shakeel and Atallah 2011). Also, so far many researchers on the urban issues of Tehran city (such as Madanipoor 2005, 2009) have emphasized Horkad the conformity of natural topography over social topography in Tehran. The result f this attempt, while confirming aforementioned perspectives, indicated that the distribution pattern of canopy density in residential areas(private urban green space) has a capability portray greater to social classifications and environmental quality and as a result spatial inequalities in Tehran city due to the fact that their production, distribution and density are performed in relation to different natural. social. economic and fabric-spatial factors.

## 4- Conclusion

The attained results from the analysis of canopy density dispersion in Tehran residential areas indicated that areas with thick and very thick tree-coverage density quite clustered patterns possess and geographically are almost conformed to the northern urban regions which have a more desirable environmental quality. Also, the areas with average density have an almost scattered pattern and geographically show more development in the northern half of Tehran. Areas with low density or without tree coverage at all have also scattered patterns. Nevertheless, with respect to the concentration of residential blocks without tree coverage, their spatial dispersion pattern have changed to quite scattered patterns which are geographically conformed to the thick density population, areas with problematic, old and low environmental quality tissues. According to the results obtained from Rotated Component Matrix of factor analysis, five main components which indicate spatial inequality in Tehran are: economical – ecological factors, settlement pattern of social classes and residential quality factors, structure quality and city texture, family density in residential units and density and centralization of population and contaminant uses.

## **5- Suggestions**

In a society like Iran, whose almost 70 percent population are urban, it is vital to schedule justly to decrease social and economic inequalities and their bad functional outcomes in cities. This subject is of particular importance in relation to Tehran and its urban collection which accommodates 19 percent of the total country's population and which plays an important role in political stability of Iran. After the victory of Islamic revolution the economic powers had fewer facilities to show luxurious and lavish styles and this was because they had a cultural and fair approach. As a result, the dimensions of social inequality are not much visible in the society. Therefore, with respect to difficulties of access to sources of documented information (such as families' income and their financial and non- financial facilities), it is suggested to seriously pay attention to technology development in using variables and spatial indicators such as the use of Normalized Vegetarian Index (NDVI) in the present article which has an interactive relationship with social and economic conditions to measure spatial inequality in cities and metropolises.

**Key words:** Urban green space, urban political ecology, Spatial Inequality, NDVI (Normalized Difference Vegetation Index).

## References

- Berg, Bruce F. (2007), New York City Politics: Governing Gotham, Rutgers University Press, New Brunswick, New Jersey and London.
- Bernard H. (2009): Tehran Alborze, Translated by Cyrus Sahami, Mohaghagh – Taraneh publication, Tehran, Iran.
- C. P. LO. (1997), Application of LandSat TM data for quality of life assessment in an urban environment, Computers, Environment and Urban Systems, Volume 21, Issues 3-4, May-July 1997, Pages 259-276, Available in:
- Chalabi, M. (2007), The Order Sociology, Naie publication, Tehran, Iran.
- Conway Tenley M, Tooba Shakeel, and Joanna Atallah (2011), Community groups and urban forestry activity: Drivers of uneven canopy cover? Landscape and Urban Planning, Volume 101, Issue 4, 30 June 2011, Pages 321-329, Available in:
- Deghan h. (2007), Opportunities and challenges of education in the face of spatial disparities in information and communication technology, Journal of Education No 91: 125-163.
- Escobedo Francisco J.and etc. (2005), The socioeconomics and management of Santiago de Chile's public urban forests, Greening, Volume, 3 April 2006, Pages 105-114, Available in: http://www.sciencedirect.com/science/article/p ii/S1618866705000543.pdf.
- Esri. (2004), ArcGIS 9: Geoprocessing Commands Quick Reference Guide, Printed in the United States of America.
- Farrid y. (2000), Epistemology and The foundation of Human Geography, publication by Islamic Azad University; Ahar unite, Ahar, Iran
- Faryadi, Sh. and Taheri, Sh. (2009), Interconnections of Urban Green Spaces and Environmental Quality of Tehran, Int. J. Environ. Res., 3(2), Pages: 199-208, Spring 2009, ISSN: 1735-6865, Available in:www.sid.ir/en/VEWSSID/J\_pdf/108220090 205.pdf
- Hataminejad H. (2001), City and Social Justice (Spatial Disparities in the neighborhoods city of Mashhad), A Thesis for the Degree of Phd in Geography and urban planning, Supervisor; Momeni Mostafa, Shahid Beheshti Univeristy, Tehran, Iran.

www.SID.ir

3

- Heynen Nik, Harold A. Perkins and Parama Roy. (2006), The Political Ecology of Uneven Urban Green Space, The Impact of Political Economy on Race and Ethnicity in Producing Environmental Inequality in Milwaukee, Urban Affairs Review, Vol. 42 N. 1: 3-25, September. 2006.
- Heynen, Nik, Maria Kaika and Erik Swyngedouw. (2006), In the Nature of Cities: Urban political ecology and the politics of urban metabolism first published by Routledge and Taylor & Francis Group, London and New York.
- http://www.sciencedirect.com/science/article/pii/S 0034425797000886.pdf.
- http://www.sciencedirect.com/science/article/pii/S 0169204611001034.pdf.
- Jalili, A, Khosravi E. (2009), A research in strategies for green space Development in Tehran master plan, Journal of Natural resource No 81, Winter : 176-185
- Jehadabkhizdari Company (Watershed Company). (2005), Environmental studies in Tehran Master Plan Volume 4, Tehran, Iran.
- Jensen Ryan, Jay Gatrell, Jim Boulton and Bruce Harper. (2004), Using Remote Sensing and Geographic Information Systems to Study Urban Quality of Life and Urban Forest Amenities, Ecology and Society, Vol. 9, No.5, Available in: http://www.ecologyandsociety.org/vol9/iss5/art 5/
- Kalantari k. (2008), Data Processing and Analysis in Socio-Economic Research using with SPSS Software, publication of Farhang Saba, Tehran, Iran.
- Kamali A. (2006), An Introduction to Sociology of Social Inequalities, Samat publication, Tehran, Iran.
- Lee J and David W. S. Wong. (2002), Statistical Analysis with ArcView GIS Translated by Mohamdreza Hosinnejad and Fereydoun ghadimi aroosmahaleh, publication of Iran University of Science & Technology.
- matakan A.A and etc. (2009), Measuring The quality of life places by using Multicriteria

Metod in GIS (Case study: Tehran city), first year, No.4, winter: 1-20

- Mousakazemi S.M and Akbari S. (2010), Aanalaysis of socio-environmental sustainability in Ilam city with emphasis on green spaces land uses, Journal of Iranian Geographical Association: eighth year, No.26: 135-149.
- Parivar P, Yavari A.R., Sotoude. (2008), A Landscape-based analysis of spatial distribution and dynamics of Tehran urban green spaces, Journal of environmental studies may 2008; 34(45):73-84.
- Piran Parviz. (2008), analysis of Sociological of Urban Housing in Iran in Proceedings of Social problems in Iran edited by Iranian Sociological Association, Agah publication, Tehran, Iran.
- Soltani, M. (2007), The urban Parks contemporary , with a focus on Tehran experience in transition of garden to park, Journal of Baqe Nazar, forth year, No8: 48-58
- Soltanzadeh H. (2003), From gardens to park, Iranian Journal of anthropology leter, Winter 2003; 1(4):91-113.
- Stevenson, D. (2009), Cities and urban Cultures, Rajab Panahi, Ahmad Pourahmad, publication by Architecture and Urban Development Research Center, Tehran.
- The Ministry of of Housing and Urban Development and Institution Urban Development plans of Tehran. (2007), The basic document of Strategic – structural plan of Tehran development, Tehran, Iran.
- United Nations Center Settlements. (2009), Cities in globalizing: global report on the human settlements, translated by Reza pourkharad and etc, publication by Research Planning center of Tehran.
- Zangiabadi A, Rakhshaninasab H.R. (2009), The statistical- spatial analysis of urban green spaces development indices (case study: Isfhan urban zones), Journal of Environmental Studies, April 2009; 35(49):105-116.