The Third World cities’ need for information

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Abstract

Most municipalities in the Third World are unable to meet the basic needs of city dwellers. Other than being exotic, these cities are also known for excess poverty, poor access to facilities and substandard housing. In such realms, discussion on access to information by the city’s poor is considered as luxury and attracts little attention. This paper reports the results of the study carried on 200 households in four neighborhoods within the City of Tehran. Half of these residents were provided with information on land and housing prices and property rights as well as on location and availability of amenities and services. The results of this study, show that those city dwellers who have greater access to reliable and updated information on land use and housing, also find valuable opportunity to improve their lot in terms of finding affordable and better shelter.

1 Introduction

Could a city like Tehran become a livable place by using the information technology as an agent? This question may be relevant to all the Third World cities where the problem is not only the rapid growth, but, as expressed by Evans [1], the ways such growth could be linked to greater livability.

Unlike in the developed countries where cities could be expected to have a greater chance to provide a better environment for their residents as time goes by; in the Third World, environmental problems and degradation tend to accumulate. In Tehran, the picture is also extremely alarming, especially for the poor: access to jobs and services is deficient, land is scarce, housing demand is high, and affordability is a dream for most city dwellers. The Municipality of Tehran, despite some achievements in improving the City as a whole during the last decade, especially in terms of infrastructure and green space, has neither the financial means nor the political support to meet the needs and demands of the low-income residents in traditional manners.
Rapid land use change within the City boundaries has become a recurring phenomenon, leading to build up of pressure on environment. The urban area has grown immensely due to high rates of natural increase, rapid in-migration, and changes in rural society. Translated into demand for land, such phenomenon have given way to land use conflicts, poor infrastructure, haphazard growth patterns, political and social conflicts, and greater pressure on environment [2].

On the supply side, it is apparent that, even in a developing city such as Tehran, urban land use data are becoming ever more accessible through satellite technology, use of image processing techniques and Global Positioning Systems (GPS). The availability of large volume of data carries with it the problem of ineffective data use [3]. Thus, along satellite images, other tools are necessary if urban data needed to be managed. In this context, geographic information systems (GIS) can play significant role by summarizing and modeling relevant information to be used in development of appropriate planning and policy making alternatives for affected cities [4].

Such information, however, is not accessible by the low- and the middle-income population. There are no plans to make them accessible in the future both because such issue, by definition, attracts little attention and is considered as a luxury by the policy makers.

In this article, however, we present the results of an study on four neighborhoods. Two communities in south of Tehran, where most of the low-income reside, and two in the middle section of the City, where is occupied mostly by the middle-income, are selected for the study. A total of 100 households were provided with information on land and housing prices and property rights as well as on location and availability of amenities and services for a period of four months. We selected another 100 households randomly to be considered as the control group. It was found that those city dwellers who have greater access to reliable and updated information on land use and housing, also find the opportunity to improve their lot in terms of finding affordable and better shelter. This is significant as it not only links the issue of livability with the information technology phenomenon, but can organize the thoughts of decision-makers and political actors toward, as Fourie [6] describes, increasing the sustainability of initiatives.

2 The City of Tehran

Tehran, located in the north central part of the country (figure 1), has a history dating back to 1000 BC. Throughout these centuries, the city, which was better known as the City of Ray, witnessed rise and fall of monarchies, several invasions by outside forces, and continued destruction and reconstruction of its infrastructure and neighborhoods. When it became the capital of Iran, 200 years ago, it was destined to become the largest and the wealthiest city of this ancient land. In fact, Tehran’s population has grown 75 times in 125 years.
Figure 1: Tehran, located not far from Caspian Sea, houses 10 million people.

To gain a reasonable perspective on Tehran, note that the City has a population greater than the whole of Saudi Arabia. Outside the Middle East region, it ranks closely with Los Angeles in terms of size, population, level of services, sophistication, climate and even smog. It holds, however, 20 percent of the country’s economy and houses one out of every five Iranians.

Today, the city holds a population of 8 million on 650 square kilometers of land. Its horizontal expansion, however, is limited by natural and human factors. Along the north and east side of this economic and political capital, awesome mountains line up as a wall, rising more than five thousand meters. To its southern border, spans of agricultural land are being overtaken by new settlements, functioning as dormitories for migrants who commute to the city in search of work. To the west, factories, including large automotive industries, line up to connect Tehran with the City of Karaj, 50 miles away.

Administratively, the population is distributed in 346 neighborhoods within 22 districts (figure 2). Within this territory, vacant land for development is fast
becoming extinct. Developers are limited to purchasing buildings with an average age of 15 years old, demolishing them, and putting up new ones. The municipality as well as other governmental, non-governmental, and private agencies are increasingly finding themselves with little access to suitable sites to locate. Competition between all sectors has led to significant changes in land use for housing, road networks, and other urban activities.

3 Methodology

Two communities in south of Tehran, where most of the low-income reside, and two in the middle section of the City, occupied mostly by the middle-income, are selected for the study (figure 3). A total of 50 households were provided with information on land and housing prices as well as on location and availability of amenities and services for a period of four months. We selected another 50 households randomly to be considered as the control group.

We made available several laptop computers to the members of the experimental group. Digitized maps at the scales of 1:2000 and 1:10000 provided information on the communities' boundaries, their relationship with adjacent communities and with the city as a whole, as well as the land use coverages, as existing and as planned. These households could find their place of residence and work on these maps. For example, they could review what the City had planned for their area and discuss how such plans could affect them in terms of property value and accessibility to jobs, services, and facilities.

Along the graphic representation, they could access the attribute data on fluctuations of rents and property values during a three-year period. For this
purpose, a number of land uses were defined and each was organized into a separate coverage. The literature on land uses in Iran point to about two thousand urban uses [7]. Their distribution within cities of different sizes, functions, and densities has also been investigated. The array of land uses has also been classified broadly into three categories: developed, transition, and reserved lands [8]. For the purpose of this study, however, land uses were categorized into 8 classes, each forming a theme:

- developed lands: residential, non-residential, road network,
- reserved lands: recreational parks, green spaces, agricultural, wetlands, and
- transitional lands: vacant land (with access to necessary infrastructure).

To create such database, several sources were utilized. In addition to Tehran’s existing maps, the images of the City from the SPOT satellite were obtained for the years 1996 and 1999 from the Tehran GIS Center. Software such as Easi/Pace and Spans were used for the primary image processing. AutoCAD, Photoshop, and CorelDraw were also used for ancillary operations. Figure 4 presents an example of such data. Next, the data were encoded and imported into a GIS environment to be presented and used by the households in the experimental group. The control group, however, did not receive any of the said data.

Some extra analytical information was also provided to the experimental group concerning comparisons between districts. An example of such comparison is presented in figure 5. Graphic and attribute data on different land use and densities were also provided. Figure 6 shows an example of residential densities for a section of Tehran. Based on these, for instance, the users could make judgment about which areas are subject to rapid development and which are more or less stagnant.
After exposure to all data for four weeks, the residents responded to a set of questions, ranging from demographic ones to those concerning better decision-making. The coded data was then analyzed using SPSS software.

Figure 4: An example of satellite image provided to the experimental group.

Figure 5: Sort of analytic information accessed by the experimental group.
Interpretation of Results

Although reliable information on income is not available, but the districts to the south of Tehran are known for housing the lowest-income residents. For example, it is unofficially estimated that in District 18, the average yearly income is about $600 compared to about $3600 in the affluent districts of 3 and 1. Our sample of two communities in the south confirms the estimated average income. In addition, the other two communities in District 7 are considered as middle-income ones.

We found that there is a relatively strong correlation (Pearson r=0.807) between income level and access to information on city matters in our sample. Not only that the lower-income head of households did not have the means to acquire computers and internet connections, they had no idea about the City offices where they could refer to for information. The only source of information on vacant land and housing values that they mentioned was the private housing agency. More than 90 percent of respondents, however, expressed lack of trust for such agencies since, as we were told, they would provide insufficient, incorrect, or biased information when it suits them.

The experimental group responded to the information we provided with enthusiasm. After the first four weeks, 23 percent of respondents in the experimental group had decided to search for better and more affordable housing based on the information they had received. In the control group, none of the
households had any thoughts about improving their situation in terms of housing or accessibility to amenities or services.

It is noteworthy that after 8 weeks into the study, two heads of household in the experimental group had managed to sell their units and to move to new dwellings far better than the former ones. This, they claimed, was due to having useful information through computers and tools such as GIS. Many others (about 85 percent of respondents) pointed out that they would refer to such information at least once a month if it were made available through computer site or booth in their neighborhood. They mentioned “financial gains” and “achieving better standard of living” as the motivation for doing so.

Furthermore, “level of education” was controlled for in a regression model. This was done since it was assumed that, regardless of income levels, sex and age of the head of households, those with higher education could easier accept and understand the new technology than those with little or no education. Here, however, it was found that this variable was not significant at all (beta=0.07).

Based on this study, it was conclude that the city dwellers who have greater access to reliable and updated information on land use and housing, also find the opportunity to improve their lot in terms of finding affordable and better shelter. Based on this finding, it was recommended that the City officials provide computer booths at as many neighborhoods as possible with enough updated information. This could be considered as a first base upon which city plans and projects could be presented to all residents, regardless of their level of income, to encourage greater participation in decision-making.

References


