

Aspects of Housing Development Analysis of the Impacts of Social & Economic Issues on Housing Physical Indicators (Case Study: The 2nd District of Tehran)

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ABSTRACT: Housing development and the planning of it includes variant aspects, which are important to study, in order to have a successful plan in a city. Physical aspect contains scrutiny of seeming and objective factors of housing and dwellings, which includes kinds of building materials, quality of structure, urban accesses, and etc. Social aspect contains issues such as structure of population and household, cultural issues and etc. And economic aspect of housing include issues like cost of dwellings and real states, households' incomes and etc. In addition, these aspects have influences on each other too. For example making changes in social and economic conditions will cause the change of physic of housing. Therefore, this paper studies impacts of social and economic situation on physic of housing in the 2nd District of Tehran as a bipolar area (in north and south of Hemmat expressway) which suffers a serious inequality in distribution of services and facilities, households' income, cost of properties, cultural and social indicators and etc. So the relationship between physical aspect of housing and social and economic factors will be defined as a function by the two following method: Factor-Analysis and Regression. This paper concludes that enhance of quality of housing is not achievable whit physical intervention merely and a comprehensive approach is necessary for housing planning.

Keywords: Housing Development, Social Aspect, Economic Aspect, Physical Aspect, Housing Planning.

1. INTRODUCTION

Human beings' vital and historical needs for housing has been complicated since the start of his settling. Housing like food is one of human's major needs especially in the recent century which urbanism has been growing rapidly and of course is one the most important economic, social, and political aspects of societies (Dorkush, 2003:115). So these political, social and economic aspects in addition to the physical aspect of housing emphasise housing planning for today's societies.

Housing with great economic, social, cultural, environmental and physical aspects influences characteristics and image of a society. Economic and social importance of housing put it into public scrutiny and in the other hand it is an important means of achieving economic objectives through its impact on job creation and relations to other economic sectors. Alongside the importance of housing, planning obtains its importance in the planning system and it's decisive roll in occupation, GNP and social and development objectives is clear. Fulfilling the growing demand for housing, not only needs land, capital, materials, labour work, and technology but also needs having high quality planning to harmonize

housing with other sectors and its components (land, material, etc.) with infrastructure, public and social facilities, transportation and etc.

2. METHODOLOGY

According to limited formations in the case study and the importance of indicators, some of social, economic and physical indicators are chosen to be analysed as objective indicators. Some of social indicators include number of families in each statistic area, population of statistic area, percentage of active population, percentage of literate people, sex ratio, distance from the nearest school, distance from the nearest medical centre, pure population density, number of people per room, percentage of units with no bath. Economic indicators include: share of housing from family income, share of housing from family outgo, percentage of employed population, percentage of unemployed population, annual inflation of house price and sponsorship. Physical indicators include: area, number of floors, height of the building, number of rooms per dwelling, microlithicness (having small grain), stability of structure, and impermeability of urban text.

Then, firstly physical indicators are combined and this determines housing physical condition and after that with regard to regression Method, the correlation of housing physical condition with social and economic indicators is calculated. Finally this relation is analyzed to determine the impacts of social and economic aspects on physical indicators of housing.

3. THE SOCIAL ASPECT OF HOUSING

Although nowadays housing has a broader meaning than only a vital need of human being and maybe its economic aspect dominates others, but its social and cultural aspect is also very deep. Social goals in national development plans point to requirements that cause the improvement of life quality. Although the quality of life is defined differently in different countries and different parts of a single country (Mokhber, 1984: 29), it is emphasized in all development plans as a major and critical goal. The problem of shanty towns will occur if the vulnerable class of society is neglected in development programs. Neglect doesn't resolve this group's needs for shelter and need indicators influence all aspects of housing and could cause bad quality and no access to housing (Amakchi, 1997:25).

Most important factors of housing including: security, desirability and affordability are the most critical social criteria's which are shaped based on

priorities, interests and preferences of housing consumers. People want an affordable, accessible, secure house with a good design in a suitable location. So house is not only a physical unit but it must include the residential environment with all facilities which responses to welfare, employment, education, and healthcare. Water supply, sewage system, and cultural, educational, recreational and health spaces are also a must for desirable housing.

4. THE ECONOMIC ASPECT OF HOUSING

Housing investment usually includes 2 to 8 percent of GNP and 10 to 30 percent of gross capital in developing countries and causes 5 to 10 percent of investment in other sectors. With direct investment in housing and other related sectors 20 to 50 percent of wealth of most countries is produced. Housing is also a major mean of investment for families with great impact in their consumption. In addition, housing influences inflation, budget deficit, labour activities, balance of payment, and government budget through taxes and subsidies (Rafiee, 2003: 14 ; world Bank ,1992 Balchin and Rhoden , 2002:21).

Price of housing and its subsidies are important economic factors. Proportion of average house price to income is low in lots of developed countries with good housing conditions but very high in developing countries. Totally great subsidies for producer or consumer cause problems for housing policies, if these policies need heavy subsidies for producer and consumer. Houses subsidies must be in favour of efficient programs and avoiding unwanted influences. This needs housing subsidies to be defined very clear in an efficient process. Anyway, if it influences housing market, new problems will occur (Bull,1998:25).

Finally, housing investment is a productive long-term investment and causes a flow of services that influence other parts' productions. Economic housing indicators are indexes which show different aspects of housing in quantities and enable us to compare and analyse them.

5. THE PHYSICAL ASPECT OF HOUSING

Physical aspects of housing can be considered from two perspectives. First, physical of house as a residential unit, and second relation of it with its residential environment which is a social indicator and determines the role and status of housing in urban development. For example the location of a house is very important because conditions of the place determine most characteristics of a house. Any kind of need and behaviour in residential areas demands its own

form of dwelling and functional spaces of a house can have different aspects based on social and economic demands of their residents. People with different incomes live in different zones of a city (Towfiq,1990:182). Housing consumption model, whether in major goals or in policies, has great physical impacts. Some activities which used to be done out of the house have entered people's homes and need their own space.

The outdoor physic of a house is very important. A house has Great impact on urban environments and cities. The role of housing in urban development has been variant through history and in recent periods alongside environment, are two major factors which shape cities. Rapid population growth, as a result of natural birth rate and immigration, in addition to great changes in structure and household scale, cause great physical expansions of cities. Residential zones has been the biggest zones of cities and housing productions, as a quantity factor, determines physical development of cities. (Azizi, 2004: 23)

6. CONSIDERATION OF HOUSING INDICATORS IN THE 2nd DISTRICT OF TEHRAN

Tehran, capital of Iran, has officially 22 districts and this study focuses on 2nd district for considerations of housing development. This district is of the five mountainside districts in the north of Tehran in a form of an elongated rectangle at the altitude of 1800 m from the sea level in north to 1200 m in the south and has variant slopes from south to north.

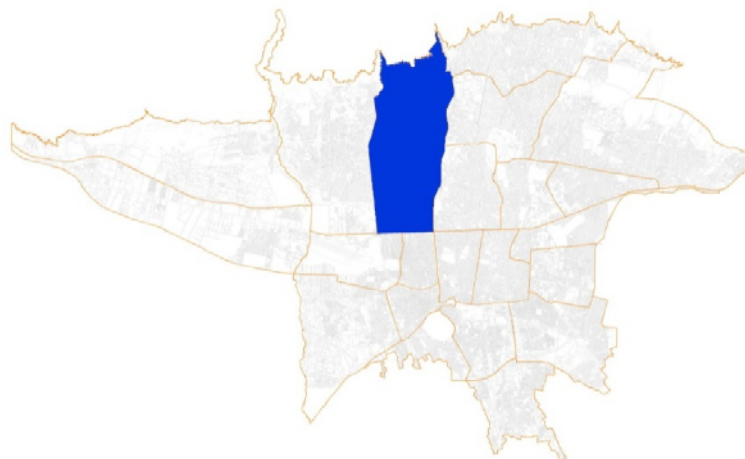


Figure 1: location of the 2nd district in Tehran

Alborz mountain range is located in the north of this district. Some small valleys like Darakeh and Farahzad are located in the mountainside (in the north of the district) with depth and a slight slope. Lots of hills are located in the middle

of the district as a result of water friction including Pardisan park hills and the north of Gisha.

Considerations show that the history of this district doesn't go back much far and doesn't have any special historical sites. Tarasht, Evin, and Farahzad are the three focal areas in the district's history with organic and rural morphologies.



Figure 2: The 2nd district of Tehran

7. ANALYSIS OF THE IMPACTS OF SOCIAL AND ECONOMIC ISSUES ON THE PHYSICAL INDICATORS OF HOUSING

It seems that, the physical condition of housing is influenced by environmental socio-economic characteristics. In order to prove this correlation, firstly, a data base of social, economic and physical indicators of housing in the 2nd district of Tehran should be created. And then an indicator entitled "Housing physical condition (HPC)" will be defined and finally we will have a scrutiny on its correlation to social and economic indicators.

7.1 Making a data base

Information of some of the indicators are based on the surveys of the detailed plan of the 2nd district of Tehran and some other indicators are derived from overall census gathered by the Institute of statistics of Iran and some other are provided from studies of comprehensive plan of Tehran (2007). Therefore in order to make such a data base, considering the differences of units of these studies (parcel, block and statistic areas), data are gathered in a data base in units of statistic areas, as the biggest unit of study in those studies. The combination of the indicators that are in smaller scales are done via Spatial Join by the software of ArcGIS.

7.2 The combination of physical indicators

After making this data base, the second step of analysis is combining physical indicators in order to form the factor of "HPC". Therefore the correlation of all the socio-economic indicators with this factor can be studied. For this purpose in order to define such a factor the following steps were done:

- Firstly, the physical indicators were reviewed and seven indicators were chosen from them. These seven indicators include: area, number of floors, buildings' height, number of rooms per dwelling, stability of structure, impermeability of text and microlithicness (being small grain). It is postulated that the housing physical condition can be defined by these seven indicators. Therefore, in order to determine the HPC indicator, combining of these physical indicators is necessary.
- Considering the uneven importance of the above indicators, it's required to determine the coefficient of importance for them. For this purpose, by the method of AHP (Analytic Hierarchy Process) indicators have been given an importance. This importance was based on Thomas L. Saati's matrix.

Table 1. The calculation of the importance coefficients of the studied physical indicators

Housing Physical Concition	Area	Floors	Build. Height	Room per Unit	Microolithicness	stability of structure	Impermeability of text	Row multiplication	Numeral Average of Rows	importance coefficient
Area	1	5	9	1/3	7	3	8	2520.00	3.0613	0.2614
Number of Floors	1/5	1	7	1/5	5	1/3	7	3.26	1.1842	0.1011
Build. Height	1/9	1/7	1	1/7	1/3	1/5	1/3	0.0000503	0.2432	0.0207
Number of Room per Unit	3	5	7	1	7	3	7	15435.00	3.9660	0.3386
Microolithicness	1/7	1/5	3	1/7	1	1/7	1/3	0.000583	0.3451	0.0294
Stability of Structure	3	3	5	1/3	7	1	5	525.00	2.4467	0.2089
impermeability of text	1/8	1/7	3	1/7	3	1/5	1	0.0045918	0.4634	0.0395
								Sum	11.7102	1

Reference: Authors

Now, after determining the coefficients of importance of the indicators and normalizing them, we can combine the physical indicators to form one factor and calculate HPC for each statistic area that shows the consequent of physical indicators. So, categorizing this indicator to 5 groups expresses housing physical quality of the 2nd district of Tehran as “very good, good, average, bad and very bad”. Figure No. 3 shows the location of the statistic areas in this categorization.

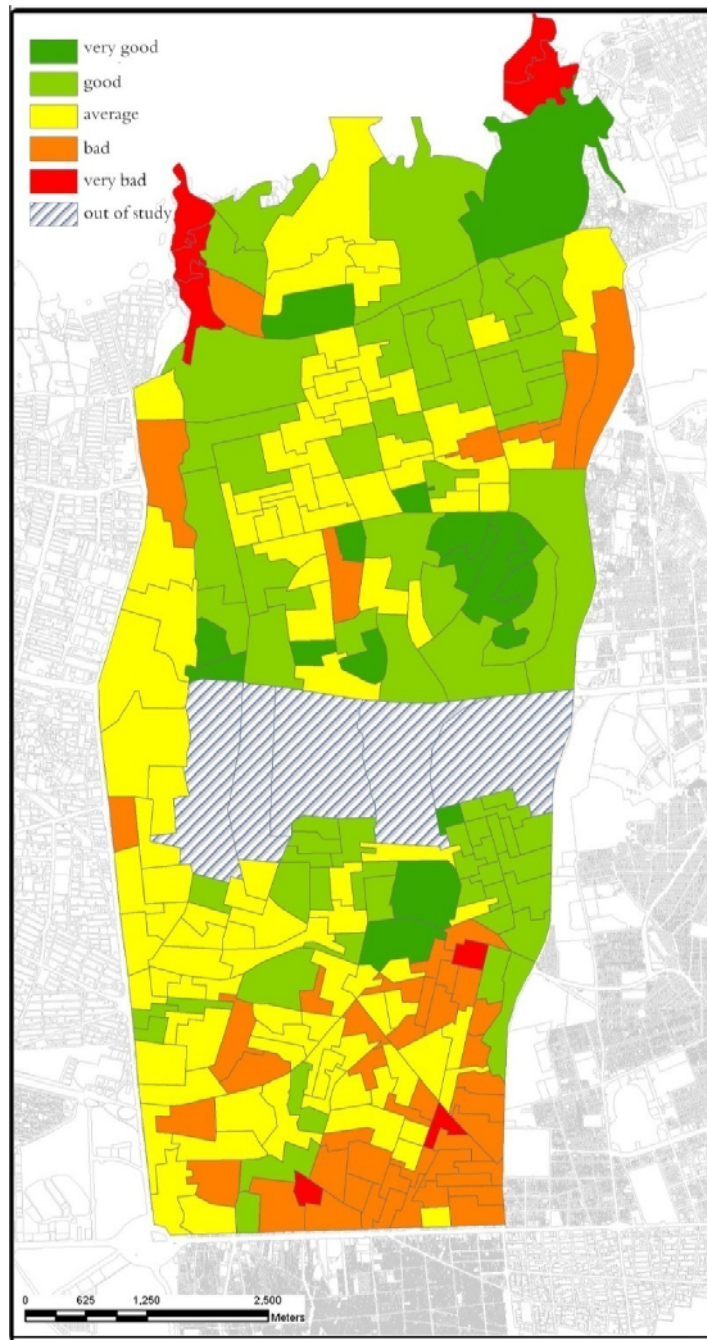


Figure 3. Distribution of the indicator of Housing Physical Condition in the 2nd district

In the Middle belt of this district, there are five statistic areas which mainly include a civic park (Padisan Park) and since from a housing study point of view it is less of an importance, they are excluded from our study. Distribution of the HPC indicator in the 2nd district is shown in the following chart.

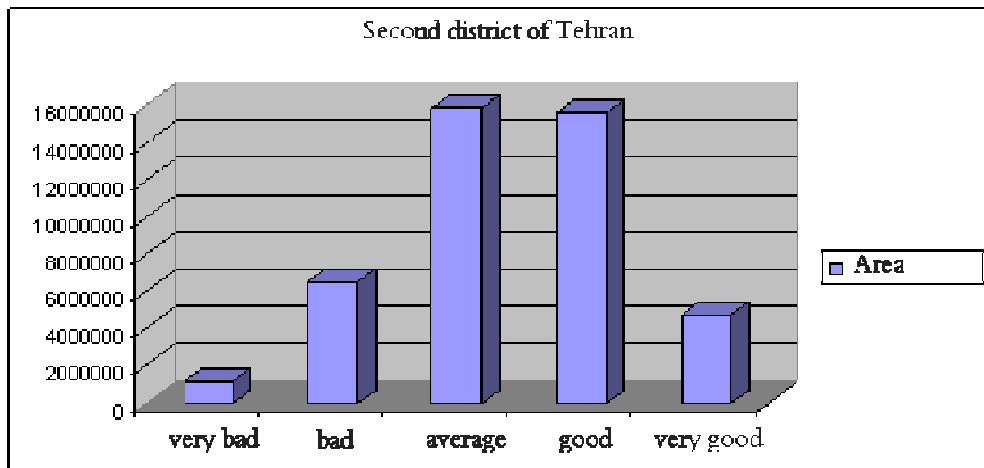


Figure 4. The HPC indicator in the 2nd district of Tehran

7.3 Analysis of the impacts of socio-economic indicators on physic of housing

In order to study the correlation of socio-economic indicators and the housing physical condition, the correlation of the HPC indicator, which was calculated before, with each of social and economic indicators is studied. In this paper, specification of Correlation Coefficient took place in SPSS software environment. Here the correlation of each indicator with HPC is presented.

Table 2. Correlation coefficients of the socio-economic indicators with Housing Physical Condition

Correlation Coefficient	HPC
Number of families per dwelling	-.188**
Statistic area's population	-0.098
Percentage of employers	0.01
Percentage of unemployed	-0.107
Percentage of active population	.280**
Percentage of literate people	.442**
Sex rate	-0.057
Distance from the nearest school	.147*
Distance from the nearest medical centre	.363**
Pure population density	-.165*
Percentage of dwellings without bath	-0.114
Share of housing from family's income	-.217**
Share of housing from family's outgo	-.246**
Annual Housing fee's inflation	.142*
Number of people per room	-0.056
Sponsorship	0.078
Number of units	-.141*

Reference: Authors

The above table shows the correlation coefficient between social and economic indicators and HPC indicator (that is in fact a combination of several physical indicators). When this coefficient is near to 1 or -1, it means that more correlation can be expected. The negative sign points that there is an inverse relationship between that indicator and HPC. According to the above table, indicators of "percentage of literate people", "distance from the nearest medical centre", "percentage of active population", "share of housing from family's outgo" and "share of housing from family's income" have the most correlations with HPC indicator.

8. CONCLUSION

According to this paper, housing physical condition is influenced by social and economic factors. Based on this fact, the relation between some social and economic indicators with the physical aspect of housing was studied. For this purpose, the "housing physical condition" indicator was defined firstly and then its correlation coefficient with the other indicators was calculated. So it is denoted that indicators of "percentage of literate people", "distance from the nearest medical centre", "percentage of active population", "share of housing from family's outgo" and "share of housing from family's income" respectively have the most relationships with housing physical condition according to importance.

Therefore, in order to improve and influence on housing physical conditions, the enhancement of social indicators such as education level and access to medical centers and also the enhancement of economic indicators such as rate of activity and deduction of housing costs in the basket of income and outgo of family (that is possible in two ways: by decreasing housing costs and by increasing families income), may be efficient. Although none of the indicators have a correlation coefficient more than 0.6. Therefore in order to find more exact and efficient indicators, more studies are necessary.

As new findings, this paper suggested a method to determine various aspects of housing development and the correlation of them with each other. According to this study, we can say that housing development not only needs paying attention to physical aspects, but also needs to recognize social processes and economic structures in the city. As a case, in the 2nd district of Tehran, there is a correlation between housing physical condition and the indicators of "percentage of literate people", "distance from the nearest medical centre", "percentage of active population", "share of housing from family's outgo"

and “share of housing from family’s income”. Also we can say, there is a relationship between physical and socio-economic aspects of housing development which means that in order to improve physical aspect of housing, we should enhance social and economic indicators.

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