

Systematic Evaluation of Effective Factors in Establishing and Developing Informal Settlements in Mashhad Metropolis

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Extended Abstract

1. Introduction

Mashhad with a population of three million is the second largest city in the country which has accommodated the population of nearly one million and two hundred thousand people in eight residential areas. According to the researches, such unplanned settlements are the consequences of structural problems of the urban management resulting from the main structure of the urban management plans along with the regional issues (Farnahad, 2008; Housing and Urban Planning of Khorasan-e-Razavi, 2014). Furthermore, these areas adversely affect the city economically, socially, physically, and environmentally.

The present paper aims to identify the factors affecting the formation and development of informal settlements in Mashhad and to measure the effect of these factors and their modeling in the form of systematic thinking.

2. Review of Literature

Informal settlements are mostly developed on the margins of the cities and metropolises typically outside the formal development plans (Act of Iran's Supreme Council of Urban Development and Architecture, 6th June 2006). Until now, studies of informal settlements that

have somehow led to the identification and investigation of the factors that shape and expand informal settlements have taken place in a number of ways.

A: Using futures research

B: Modeling through relevant software especially GIS

C: Evaluating the Factors of Informal Settlement in parallel to Trend Identification, Policy Pathology

But none have used systematic thinking to address complex issues such as informal settlements to gather and identify causal relationships between these factors.

3. Method

Descriptive-analytical research was conducted to gather information through documentary and survey methods. Therefore, the factors contributing to forming and establishing Mashhad's informal settlements were determined and applied to achieve research objectives. Sampling method and questionnaire were used to collect the required data. The statistical populations of this research were experts and residents of informal settlements in Mashhad. The First population used 55 questionnaires which was completed several times by Delphi method. The number of questionnaires for the second population was calculated based on Cochran's formula and 384

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questionnaires were obtained. In the residents' questionnaire, the informal settlements reliability (Cronbach's Alpha) was 0.909, and for the experts, the reliability was calculated as 0.882. Finally the main system is designed using expert interview results (Delphi method).

4. Results and Discussion

Diagrams have been drawn to understand and analyze the causes of informal settlement using systematic thinking. Eventually, in the final diagram of the system, 11 cycles were shown, 5 of which had two-variables. Two medium cycles with 4 and 5 variables were also formed. Besides, there were 4 cycles with the main and big cycles. The relationships between these cycles were as follows:

- A) Unbalanced regional policy - ignoring the policy of housing supply for the low-income people – Development - structural disadvantage of urbanization – Mismanagement - Unbalanced regional policy
- B) Drought and agricultural recession- Unemployment-Immigration- Development-structural disadvantage of urbanization- mismanagement- Unbalanced regional policies- Drought and agricultural recession
- C) Drought and agricultural recession- Inflation- Permanent increase in living expenses- Poverty and low income- Immigration-Development-structural disadvantage of urbanization- mismanagement- Unbalanced regional policies- Drought and agricultural recession
- D) Lack of governance-Poor efficacy and effectiveness of the city system- Failure to implement approved projects timely and accurately-Poor supervision of municipality- Lack of supervision during construction- Horizontal development of the city-Creation of livable centers- Close access to city- immigration- Development-

structural disadvantage of urbanization- Mismanagement- Lack of urban governance

Examining the variables in these main cycles, it was revealed that most of these communication chains are made up of a combination of economic variables and management variables. Therefore, it can be said that the economy together with management moves the most influential cycles towards the development of informal settlements in Mashhad.

5. Conclusion

The factors that shape and expand informal settlements create cycles the biggest of which is fed through the economic and managerial factors at the national, regional, and local levels. In order to slow down or break these formation cycles, these two factors must be considered at different scales. Economic variables had more impact on the formation and development of the informal settlement of Mashhad from both the experts and the residents' viewpoint. Furthermore, the cycles that led to unemployment, poverty, and low-income had a greater impact on the development of this phenomenon. Finally, it can be said that none of these sub-systems are separate as they do not act apart from each other, but the greatest impact is in between the economic and managerial sub-systems and the cycles that connect them. It is also concluded that most of these cycles which stimulate the development of informal settlements act through a social-related cycle or variable. Therefore, strategies and proposals should be directed with the aim of weakening the effective cycles, which normally tend to be more oriented towards the regional and national strategies.

Keywords: Systematic thinking, Informal settlement, Factors of formation and development, Mashhad metropolis

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