

## Statistical Analysis of Sustainable Development in Urmia City

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### Extended Abstract

#### Introduction

According to the increasing rate of urban challenges in various areas, it is required to adopt a strategic and comprehensive approach to sustainable urban development in dealing with the challenging and vulnerable aspects of cities. Adopting a future-oriented and sublime approach has been considered in the agenda of urban planning and management policies for development. This is to provide an impartial and justice-centered insight into the axes of the development. For this purpose, seven sustainable urban development patterns, namely sustainable urban economy, sustainable urban community, sustainable urban housing, sustainable urban environment, sustainable urban access, sustainable urban living, and sustainable urban democracy, with 35 variables were selected and classified.

Harlem Brantlind (1987) introduced the concept of sustainable development for the first time in a report entitled "Our Common Future". This report offered the following definition of sustainable development: "Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs and enjoy the resources". This report has introduced seven strategic imperatives, namely "Reviving Growth, Changing the Quality of Growth, Meeting Essential Human Needs, Ensuring a Sustainable Level of Population, Conserving & Enhancing the Resource Base, Reorienting Technology & Managing Risk, and Merging Environmental & Economic Components in Decision Making". In fact, adopting a human-oriented approach over and above paying attention to the environment has been the first impression perceived from the principles and fundamentals of the development at a sustainable level. Social justice and fairness in allocation of development resources without undermining other areas of development is the exact inference drawn from the sustainability of urban development. Urban planning and even urban design policies are nowadays faced with this issue.

#### Methodology

The purpose of this research is to analyze the aspects of sustainable urban development in Urmia through adopting an applied goal-setting strategy and conducting both analytical and

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descriptive survey. Subject-related library documents have been chosen as a basis for conducting the research and getting access to the descriptive data required for the study. The survey method was used as an instrument for collecting the necessary analytical data. Linear, logistic, and logarithmic regression analyses and tree analysis have been used as research tools to elaborate the survey method output.

### Results and Discussion

At this stage of the research, a tree analysis has been carried out in order to evaluate the priorities of sustainable urban development in Urmia from the perspective of its citizens. The results of the tree analysis contribute to evaluation of the priorities of indicators based on the aforementioned statistical measures from the perspective of the citizens through classification of overall average. This, in return, was gained by each aspect of the sustainability, calculation of the closely-related standard deviation, and making an overall prediction from synthesizing the low, medium and high averages. In this analysis, it was required to classify and evaluate the data in order to provide the dependent variable. For this purpose, the data below the average level was classified with the value of “zero” and those above the average level with the value of “one”. These data were regarded as the variables required for the evaluation. According to the results of the study, the tree analysis aiming at identifying the perspective of urban sustainability aspects denotes that sustainable urban democracy (identified in two branches with an overall average of 22.32) has an inappropriate condition for the perspective of the citizens compared with the other aspects of sustainability in Urmia. Linear, logistic, and logarithmic regression analyses of the aspects denote that the two aspects of sustainable urban settlement and sustainable urban democracy have the weakest impact on the urban sustainability of Urmia. Overall combination of the results obtained from the regression models represents the impact of sustainability aspects on sustainable urban development in Urmia (with a value of 0.101).

### Conclusions

Nowadays, the concept of sustainability in development process has become the cornerstone of all policies related to growth and development of human societies. It is necessary to consider this concept to achieve social balance and justice and human-centered development. In this study, the sustainability aspect of urban development in Urmia has been assessed and evaluated using the sustainability for urban development discussed at the conference on “Future of the Twentieth-Century Cities” held in Munich, Germany. For this purpose, the seven aspects of sustainable urban economy, sustainable urban community, sustainable urban housing, sustainable urban environment, sustainable urban access, sustainable urban living, and sustainable urban democracy with 35 variables were brought into questions in the form of questionnaire and survey from the viewpoint of Urmia citizens. The citizen feedbacks were collected subsequently. The purpose of this survey was to identify the priority levels of the seven aspects in the process of sustainable urban development of Urmia from the perspective of its citizens and identifying the impact significance of the aspects considered in the process of sustainable urban development in Urmia. The first stage of the research has been performed with the target group based on a tree analysis. The results of this stage represent low average of sustainable urban democracy compared with dependent variable in the employed conceptual model. The results showed that this aspect of the public perspective needs to be improved and that this aspect has the highest priority at this stage. At the second stage, impact of the aspects proposed in the sustainable urban development process in Urmia has been measured using linear, logarithmic, and logistic regression models. At this stage, the aspects of sustainable urban democracy, sustainable urban environment and sustainable urban economy (from the selected aspects of sustainable urban development) have represented the lowest and the weakest impact compared with other indicators. These are based on the way of explaining the data effectiveness variance in the three regression models. Although, explaining the data resulted from the regression models may not be a satisfactory measure to describe the effect of the

aspects on reliability of the research, the existing significance denotes that the two aspects of sustainable urban living and sustainable urban community have the greatest impact on realization of sustainable urban development in Urmia.

**Keywords:** sustainable development, sustainability aspects, Urmia.

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