ORIGINAL ARTICLE

The study of the Sustainability indexes in Lahijan and its effect on the Urban Environment

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ABSTRACT

In today's world cities face with high rate of population growth and unlimited physical urban development. Because of these issues urban development faces with challenges and problems such as insufficient income, undesirable education, separation of the hometown from the job place, undesirable health affairs, distance from the natural sceneries, reduction of entertaining and passing leisure time places, reduction in the open spaces, and finally the lack of liveliness. Due to these issues the aim of this research here is to study the important sustainability indexes in economic (economic development), social (education and health), and environmental (ecotourism) realms. For this purpose with the use of descriptive-analytical method a questionnaire with reliability of 88% has been provided and distributed among the city officials and dwellers. With the use of SPSS software the descriptive statistics of the study delineated, and with the use of T test the hypotheses of the study were approved. According to the results of the study it was found that Lahijan in next two decades will reach sustainability regardingthe important indexes in economic (economic development), social (education and health), and environmental (ecotourism) realms. So noticing sustainability indexes and single, specialized management we can move toward substantiality.

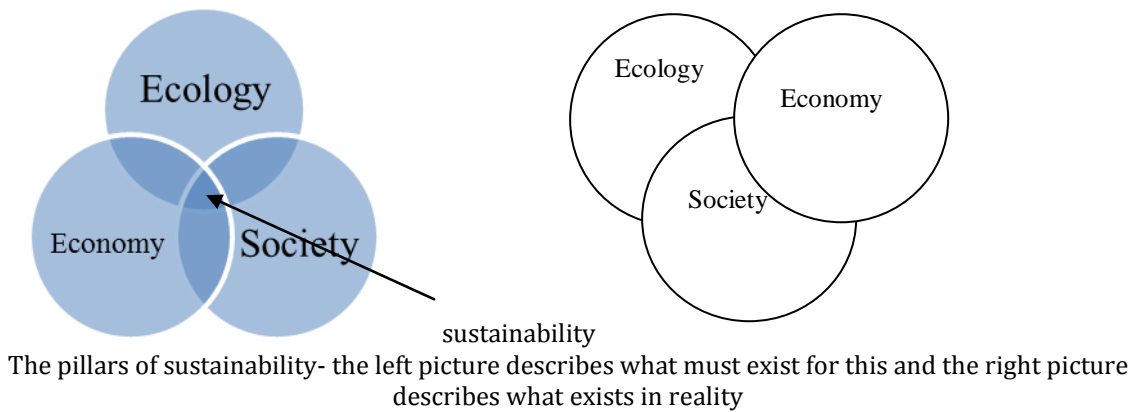*Keywords: sustainable development , Ecotourism , Economy, Health, Education.*

INTRODUCTION

Foo defines the term life as follows: the quality of life in many cases is surveyed with two groups of abstract and concrete indexes. Abstract indexes have been extracted from the evaluation of senses, evaluations, and citizens' satisfaction while concrete indexes relate to observable facts which are extractable in the framework of secondary data. Based on the level of the life quality which is evaluated abstract or concrete indexes are used [1,2]. During the last 100 years cities attracted a large percentage of world's population. For the first time in history the number of people living in cities has equaled the number out of cities. According to the prediction performed by the United Nations by the year 2030 over 60% of the world's population will live in urban areas [2] . In long time for achieving sustainable welfare people need new ways for satisfying their wants and adapting production and consumption paradigms. This is for saving protective systems and life on earth; also for supplying the required sources of future generations.

developed the idea of multi-faceted sustainability and mentioned that urban sustainability is discussable within different dimensions including: sustainable urban economy (jobs and wealth), sustainable urban society (urban coherence and consistency), sustainable urban abodes (reasonable and available abodes for all), sustainable urban environment (sustainable ecosystem), sustainable urban access (movements protecting resources), sustainable urban life (building livable cities), and sustainable democracy (giving power to citizens)[3,4]. In the conference of strategies for sustainable cities in 1999 it has been mentioned that economy, ecology, and social convergence are the principles of a sustainable city. These three issues should be interacting and for this we need an integrated and comprehensive approach.

sustainability
The pillars of sustainability- the left picture describes what must exist for this and the right picture describes what exists in reality
Figure 1- The pillars of sustainability

Regarding the physical developments of recent years the aim of this study is to know the important sustainability indexes in economic (production and consumption paradigms, economic development, investment), social (education), and environmental (ecotourism) realms in the next two decades in Lahijan and their effects on the living environment of the city regardless of the environmental crises and social unsustainability such as transmittance of urban functioning, having appropriate or inappropriate access to urban services such as health, education, and green sceneries [5] (Lahijan's developmental documents, 1384).

Methods and procedures
Lahijan is a city with Caspian Sea in the north, Langeroud in the East, Deilaman in the southwest, and Astanehashrafieh in the West. The city is located at 37 degreesand 11 minutes ofnorth latitude having the living area of 58.3 kilometer. In 1389 the population was estimated as 166,191. Half of this population was urban and the other half was village dwellers. The living area of this city is about 4% of the total province, Guilan and 0.035% of Iran's total living area. From this regard Lahijan has the tenth rank among the cities in the province.
Lahiojan as one of tourist attractions of the country has faced a fast development during the last decades such that its population has reached 72950 in year 1385 compared to year 1355, 31383 (census of the statistics center of Iran). This means that the population growth was two times with the average population growth of 4.3%. Also the physical development of the city during these three decades is of importance. To reach the aims of the study a cross-sectional survey was performed to evaluate the consequences of sustainability indexes. First, the researchers in a library form research and web searches analyzed the status of important sustainability indexes in economic, social, and environmental realms. Then, a 23 questionnaire based on Likert five-point items has been provided and interviews were performed with officials and urban dwellers in Lahijan. The officials were in educational, health, governmental, investment, economic and ecotourism sectors in the city. The reliability of the questionnaire was 88%. The sample used in this study was chosen among the city dwellers in Lahijan (people and officials) and statistical units of householders. The questionnaire was randomly distributed among city dwellers and officials; then, the results were analyzed by the use of SPSS software (this software was used for acceptance or rejection of H0), and the descriptive statistics of the study was gathered to measure the mean, variance, standard deviation, etc. based on these tables and figure were obtained regarding the items under study, so the viewpoint of people was reached. With the use of Excel software tables and figures were drawn and with the use of SPSS software statistical analyses were performed. The test used in this study was the T test.

RESULTS AND DISCUSSION
Table 1-Descriptive statistics of the studied indexes

Index	number	Mean statistic	Deviation from the mean	SD	variance
Economic	100	2.960	0.061	0.618	0.382
Social	100	2.900	0.007	0.703	0.495
Environmental	100	2.950	0.065	0.657	0.432
Total	100	-		-	-

The above table delineates mean, SD, and the variance of each of the studied indexes in the Lahijan city. The amount of mean shows the desirable amount of each of the indexes indicating the gradual movement toward sustainability.
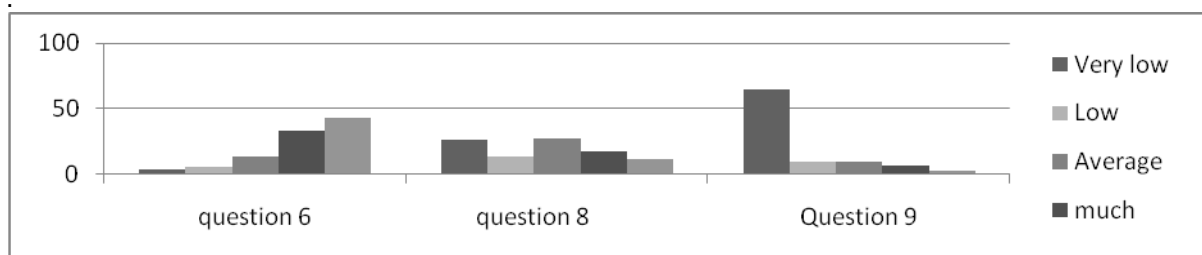
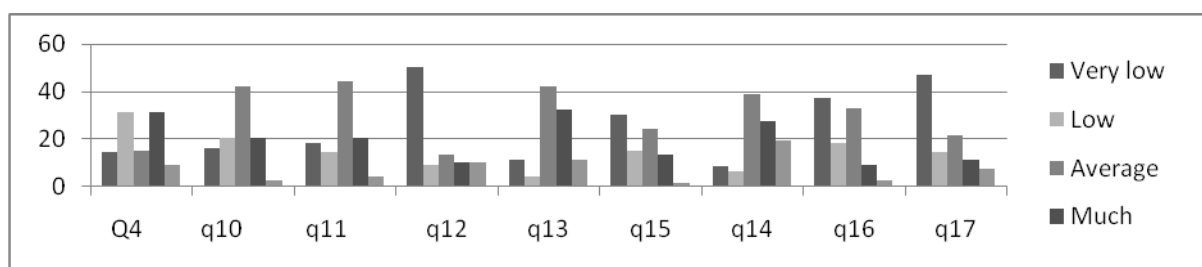

Diagram 1- The frequency of economic index

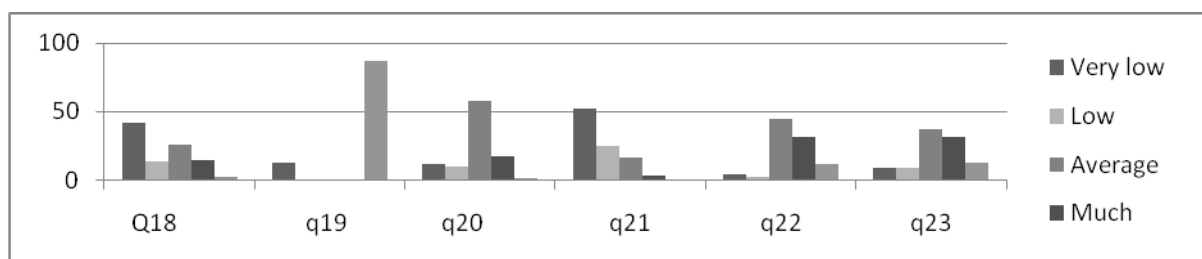**Diagram 2-The frequency of the social index**

Diagram 3- The frequency of the environmental index

The three above figures indicate the amount of frequency of each of the sub-indexes studied in Lahijan delineated based on the questionnaire used.

Hypothesis economical:
H0: Lahijan will not achieve sustainability regarding the important index of economy.
H1:Lahijan will achieve sustainability regarding the important index of economy.
To analyze whether Lahijan reaches sustainability during the next two decades or not the researchers used the T test. The aim was the understanding of the point that whether sustainability exist in this index or not.so we should see whether this index exists in its best condition or not.
Level of significance<0.05 ------sustainable
Level of significance>0.05------unsustainable

Table 2- The T test of the economical index

Index bound	amount of T	degree of freedom	level of significance	mean difference	Upper lower bound
Economic	7.440	99	0.000	0.460	0.582 0.333

Noticing the above tables we see that the level of significance 0.0000 is lower than 0.05, the H1 is accepted i.e. Lahijan will achieve sustainability regarding the important index of economy during next two decades.

Hypothesis social:
H0: Lahijan will not achieve sustainability regarding the important social index.
H1:Lahijan will achieve sustainability regarding the important social index.

To analyze whether Lahijan reaches sustainability during the next two decades or not the researchers used the T test. The aim was the understanding of the point that whether sustainability exist in this index or not. So we should see whether this index exists in its best condition or not.

Level of significance <0.05 ------sustainable
Level of significance >0.05----- unsustainable

Table 3- The T test of the social index

Index	amount of T	degree of freedom	level of significance	mean difference	Upper lower bound
social	5.688	99	0.000	0.400	0.539 0.260

Noticing the above tables we see that the level of significance 0.0000 is lower than 0.05, the H1 is accepted i.e. Lahijan will achieve sustainability regarding the important social index during next two decades.

Hypothesis environmental:
H0: Lahijan will not achieve sustainability regarding the important environmental index.
H1:Lahijan will achieve sustainability regarding the important environmental index.
To analyze whether Lahijan reaches sustainability during the next two decades or not the researchers used the T test. The aim was the understanding of the point that whether sustainability exist in this index or not. So we should see whether this index exists in its best condition or not.

Level of significance <0.05 --------sustainable
Level of significance >0.05---- unsustainable

Table 3- The T test of the environmental index

Index	amount of T	degree of freedom	level of significance	mean difference	Upper lower bound
Environmental	6.848	99	0.000	0.450	0.580 0.319

Noticing the above tables we see that the level of significance 0.0000 is lower than 0.05, the H1 is accepted i.e. Lahijan will achieve sustainability regarding the important environmental indexduring next two decades.
All in all H1 is accepted, and this means that according to citizens of Lahijan this city will reach sustainability in next two decades regarding economic, social and environmental indexes.

CONCLUSIONS

In this study important indexes in the city of Lahijan were evaluated. First, a questionnaire was distributed among the city dwellers. Then the status of the indexes was described with descriptive and T tests. In general, the results of the T test indicate that Lahijan regarding the economic, social and environmental indexes is in a desirable state based on the viewpoints of the city dwellers and the officials of the city i.e. the city is moving toward sustainability, and Lahijan will achieve the sub-indexes of sustainability during the next two decades. It is important to note that in order to reach sustainability being ideal and achieving sustainability in all these three indexes are important. According to the acceptance of the H1 of the researchers that Lahijan it has been concluded that Lahijan will achieve this sustainability in economic (economic development), social (education) and environmental (ecotourism) realms in next two decades. This also has affected the life environment of the city including an increase in the economic development with increase in incomes and jobs, and satisfaction of the financial and religious needs of the people[2,6]. Due to this we will see an increase in the number of work forces and its quality which has the most important role in economic development. If health is in its right condition among the people of the society, this will improve the conditions of the work forces resulting in the improvement of the power of work forces and final economic development[8,9]. This also provides the opportunity for literacy among all people. Moreover, regarding the environmental and life factors the health conditions of the people in the society is attended having them access to healthy drinking water, balanced medical services, etc. the other results are the reduction in air, soil, and water resources. Regarding the social justice people will attend in social affairs, also a good management of humanity affairs will occur having with itself leisure and entertainment services for Lahijan dwellers. According to

these all sayings the officials in Lahijan should do their best to reach these conditions until we see sustainable status and a healthy and lively environment during the next two decades.

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