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Evaluation the Role of Factors Affecting the Feasibility of Urban Development Plans through Structural Equation Model
(Case Study: Shiraz City)

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ABSTRACT: Urban development plans are progressing towards becoming more effective in their evolutionary process, with the goal of serving human beings with a modeling of sustainable development components. One of the major goals of urban development plans is the provision of basic services for the full development of human settlements. In this regard, the main purpose of this paper is to explain the factors affecting the change of service land uses in the city of Shiraz and identify its reasons. This research is an exploratory research, which first studies the concepts related to land use change using document-library sources and then investigates the severity of the effect of the four factors (physical, activity, economic, accessibility) on land use change and their desirability. For this purpose, the second-order confirmatory factor analysis technique has been used to determine the severity of the effect of the four factors on land use change, through which a contributing framework for the effects of the four factors on land use change is obtained. Finally, the extent and direction of the factors affecting the feasibility of service land uses in the city of Shiraz are explained using the structural equation model (SEM). In order to achieve these goals, 50 variables affecting 600 plots in Shiraz city are extracted through the field method. The variables are investigated and analyzed using GIS maps, Amos and SPSS software. The results of the research show that totally, the selected four factors have a significant effect on the land use change. It is such that the standardized weights of regression for "the effect of the access factor on land use change", "the effect of the economic factor on land use change", "the effect of the activity factor on land use change", and "the effect of the physical factor on land use change" are 0.91, 0.78, 0.65, and 0.56, respectively.

Keywords: land use, urban development plan, land use change, SEM, Shiraz.

INTRODUCTION

The rapid growth of population and the development of cities, especially metropolises have led to rapid changes in the land use patterns in and around cities. These problems, which are largely irreversible, have raised numerous issues in the environmental, social and economic contexts (Briamoh & Onishi, 2007). One of the most important reasons for this may be the lack of proper management and planning of the factors affecting the land use changes in cities (Lue & Wei, 2009). Nowadays, the concept of land use and its more sustainable and efficient uses has been widely considered and newer definitions and broader implications of this concept have emerged (Mahdizadeh, 2000). Following this development, land use planning, as the theoretical and operational axis of urban planning, has become the focus of urban planning issues over the past half century. In parallel with the emphasis of many theorists, including Keeble, on the importance of land use in the programming process, its definition, application and changes over time have been profoundly considered (Taqizadeh, 2016; Azizi & Dehghani, 2013). Land use change refers to both a change in the structure and function of a particular type of land use (a qualitative change) as well as a change in the spatial

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dimensions and extent of land use (a quantitative change) (Seto et al., 2002). Land use and its consequent developments are the result of a complex network of interactions between biophysical and socioeconomic forces in space and time (Briasolis, 2010). Population growth and distribution are the most important issues leading to accelerated land use changes, turbulence in urban land uses, polarization of some urban areas, and destruction of urban spatial cohesion in recent centuries (Dadashpour et al., 2013; Akbari & Rezaei, 1979).

According to World Bank analyses and the theories of (Wernberg et al., 2005) most land use changes occur due to increased demand for non-agricultural land due to urban and industrial development. These land use modifiers that are dependent on urban development are recognized as the main land use modifiers which play an important role in reducing the quality of arable land around cities (Long, Gouping, & Gerhard, 2007). In this regard, finding the solution of the existing problems, many scholars have pointed to the need for a comprehensive theory of land use change analysis and some of them have identified the priorities and issues that should be considered in achieving this holistic approach (Batty & Torrens, 2001; Verburg et al., 2004). Lambin, et al., 2001 have highlighted the following items as the most important issues and challenges for achieving a comprehensive theory of land use: (a) Considering the behavior of people and society and their reciprocal relationships with land use as well as involving them in the process of land use change; (b) Conducting land use analyses at different spatial and temporal levels taking into account the people and the environment; and (c) Considering the multifaceted nature of the analyses in order to focus on a framework in which the land, people, and the environment interact (Dadashpour et al., 2013; Akbari & Rezaei, 1979).

On the other hand, the majority of urban planners have emphasized the need to rethink the urban development plans, with particular emphasis on their feasibility, especially in land use, at a variety of time points. Although these urban development plans are costly and time consuming and have significant impacts on land use zoning and adherence to building regulations, they have not been feasible for some reason (Zangi Aabadi et al., 2014). One of the major goals of urban development projects in cities such as Shiraz metropolis is to provide essential services and human and urban infrastructure for the comprehensive development of human settlements. However, like many other big cities, Shiraz, which has been experiencing high population growth and poor physical development, has faced numerous challenges in realizing its urban development plans and goals, including the anticipated land uses and essential services and infrastructure. Since several factors influence the feasibility of urban development plans, the main question of this paper is to determine what factors and to what extent have influenced land use change in Shiraz for the past 20 years. The main purpose of this paper is to determine the factors that affect the implementation of urban development plans and land use changes in Shiraz and specify the complex relationships between these factors using structural equation modeling (SEM). The present study, using documentary-library resources, examines the concepts of land use change and the severity of the impact of the quadripartite factors (physical, activity, economic, access) on the land use change and then investigates the utility of this effect.

Literature Review and Methodology

Feasibility is defined by two effectiveness and efficiency measures. Effectiveness means how much a project or plan has achieved its goals. Efficiency means the ratio between the input and output of a plan or the ratio of resources spent and the result of work. Here, the problem is that why urban development plans do not have the necessary efficiency and effectiveness, i.e. they do not achieve their goals, and their result is often negligible relative to the resources spent on their feasibility.

From Kuan's point of view (2005), feasibility is defined as the occurrence, completeness, and implementation of a plan or policy. It is a specific set of design activities for the application of an activity or a program with defined dimensions (Fixen et al., 2005). Paul Nutt (2007) defines feasibility as a process and a "regular and consistent activity" that has a special place in planning and design. He defines feasibility as an activity set that boosts creative ideas and projects (Nutt, 2007). Alternative terms used by various authors to refer to two stages of feasibility and implementation are listed in the Table 1. However, previous

Table 1: Alternative terms used by various authors to refer to feasibility

Terms	References
Plan	(Moughtin et al, 1999)
Construction Documentation and Construction	(Parshall & Pena, 2001)
Implementation	Roberts & Greed, 2001
Action Planning and Implementation	Cities Alliance, 2004
Implementation Phase	(Lang, 2005)
Implementation and Alternative	Decision Making Model, 2005
Strategic Implementation	Strategic Choice Model, 2005
Plan Implementation	(Cowan, 2005 (Cowan, 2005

studies of feasibility have shown different perspectives on the concept of feasibility. These attitudes, while providing real help in our understanding of feasibility, have deficiencies that prevent the convergence of literature and writing, and delay the unified development of theory. Such a theory should provide a general framework for describing the policy of the feasibility process, and a perceptual context in which individual studies are organized. In general, our understanding of the feasibility of the program is poor. Further research needs to be done on the methodological development of feasibility.

Among the factors in feasibility of urban development plans is the correct management of land. In the case of urban land, land is divided into groups such as production, distribution, services, housing, recreation, transportation and other activities of a city community (Mahmoudi, 2000). In addition, the land itself does not have economic value, but what makes the land valuable is the features that urban development projects attached to it. Macro objectives of urban development projects are: A) the provision of public interest in urban development projects, including the provision of community services, the protection of natural and historical values, the improvement of the quality of the environment, and the improvement of traffic. B) Setting the cycle of urban space production, including investment in real estate and production of public spaces, housing, urban regeneration and rehabilitation.

Several factors hinder access to suitable land for urban development projects. The physical conditions of the land, such as the slope, which require a lot of capital for development, may prevent any use of land or for some of its particular uses. The amount of land required for a particular type of construction may not be available on the market, or there may be restrictions in terms of a physical or zoning requirement. Other limitations and factors related to land position may also restrict the use of a particular plot (Lichfield & Darin, 1980). In addition to the above-mentioned factors, the access to services is one of the main factors in limiting the supply of land suitable for urban development. This could lead to a shortage of suitable land for urban development, resulting in inflationary pressures on land prices or development of a city on land without infrastructure. All the factors mentioned above reduce the supply of land and affect the price increase (Soltani, 1999).

In addition to urban land and its related features, other criteria and indicators also play an important role in the feasibility of urban development projects. Therefore, in order to identify the desirable criteria and indicators of the research, the opinions and ideas of various scholars have been studied and are classified in Table 2.

The survey shows that despite numerous efforts, each scientist has focused only on a specific dimension of planning; therefore, the proposed criteria and indicators of each of them are different.

MATERIALS AND METHOD

Partial Least Squares (PLS) as one of multi variable analysis methods was introduced by Herman Wald in 1975. The PLS method consists of two main stages: 1) the fitting of measurement models, structural model and general model, and 2. testing the relationships between structures (Joreskog & Wold, 1982). Reviewing published papers in the last decade indicates that researchers have widely used this method to analyze research data. Researchers have cited many reasons for using this method (Kline, 2005). The most important reason is abnormal data that researchers encounter in some studies. Finally, the final reason for using this method is to deal with measurement models of a constructive type.

The PLS approach is the second generation of structural equation modeling. This approach is a suitable approach because of less dependence on the sample size, the measurement level of variables, the normal distribution, and the use of embedded tools. Another important advantage that researchers have recently discovered is the ability to use the measurement model with one index (question) in the PLS-SEM method.

Structural equations modeling was first introduced in the early 1900s following Spearman and Wrhight's studies. The application of this method in the humanities and geography has been increased since 1980 (Timothy et al., 2013). Structural equation modeling is a general and very powerful multivariate analysis technique from the multivariate regression family, and more precisely, it is the extension of a general linear model that allows researchers to test a set of regression equations simultaneously and examines the relationships between different variables at the same time (Hoyle, 2012). Structural Equation Modeling (SEM) is a data analysis technique designed to evaluate the relationship between two variables: (a) explicit variables that are directly measured and observed; b) hidden variables that are considered as theoretical constructs (Kafashi, 2011). SEM can be done through Amos software (Fesharaki, 1977).

In general, the research method used in this study is analytical (explanatory) and the type of research is "applied". In this regard, by applying SEM structural equation modeling in analyzing the relationships of variables and achieving the optimal land planning model, the causal relationship as well as the hidden and explicit variables have been found at the level of complex equations. In this context, used documentary-library resources, the concepts related to the land use change have been studied first. Then, the impact of the quadripartite factors (physical, activity, economic, accessibility) on the land use change and the desirability of this impact have been investigated. To this end, second-order confirmatory factor analysis technique as one of the structural equation modeling techniques has been used to determine the severity of the effect of these quadripartite factors on the land use change, achieve an explanatory framework to specify this effect and finally, explain the extent and direction of the factors affecting the feasibility of service applications in Shiraz. In total, to achieve these goals, first, 50 variables affecting 600 sections have been field-sampled in Shiraz (their land use has been changed in Article Five Commission from 1994 to 2017) and analyzed using GIS maps as well as Amos and SPSS software to examine a set of bivariate correlations

Table 2: Summarizing the criteria and indicators affecting plan feasibility from the viewpoint of thinkers

Scientists	Focused Criteria	Indicators affecting plan feasibility
(Alterman & Moris, 1978)	Political-institutional factors	The institutional-political structure for the process of performance and its effectiveness, the exercise of influence by individuals with political or economic interests during the conduct, the role of the designer in the process of performance
	Plan features	The planning techniques used, the type of planning team, the stated goals, any other features related to the quality of the plan
	Urban system factors	Population growth pressures, changes in standard of living, changes in economic activity.
(Talen, 1997)	Internal factors: program and its quality	The nature of the planning function, the limits of planning in the context of uncertainty, the roles and interests of the planners, the shortcomings of planning objectives, the inability of the program to recognize the political impact on planning decisions, the weakness of some plans, complexity and comprehension of other programs.
	External factors	The complexities of the local political context, the degree of coherence and consensus in the local community, the degree of uncertainty, the level of awareness of planning issues, the amount of support for planning (in terms of budget and politics)
(Norton, 2005)	Related to the process	Program requirements and commitments, project quality, program application
	Related to the nature	Priority policies, the importance of each policy, the importance of project implementation
(Elmore, 1979)	Effective Tasks and goals	Tasks and goals that affect the policies of a person, planning management that affects tasks, objectives, and executive boards in sub-units, targets that affect the assessment of sub-sectors, a management and social permits' control system that is used to evaluate performance.
(Berke et al., 2006)	The quality of the program, the manner of implementation, the creation of awareness, the capacity of the staff, the capacity of the applicants, the existing context	
(Khoury, 1996)	New urban development agenda, leadership and political commitment, organizational issues and institutional capacities, partnership and engagement, availability of financial and human resources	
(Dalon et al., 2007)	Sufficient resources, experienced staff, adequate training	
(Behn, 1980)	Simplicity of the activities	The simplicity and clarity of the activities related to each stage of the program, the coherent process of the project
(Laurian, et al., 2004)	Commitment of planning offices, executive and management laws and practices, features of appropriate management practices	Commitment of planning offices in the implementation of the plan, executive and management laws and practices to implement plan policies, features of appropriate management practices in issuing development permits, how to use development management techniques by development factors
(Oliveria & Pinho, 2008)	Relationship between goals and mechanisms of program feasibility, the relationship between city needs and program objectives, the state of the planning system, participation in the program (quality and quantity of citizen participation), the impact of political power in the structure, planning process and products, human and financial resources' commitments, the rate of benefit of the plan	
(Carmona & Edwards, 2001)	Awareness and complete information about the quality of the results of the plan, awareness of the priorities of future users of space and those who will be investors in future, stock markets and economic markets, land prices, land ownership, coordinated development at all stages of the plan, understanding between constructors and the public sector, projects should preferably be achieved in the short term, an optimal interaction between property buyers and owners of the property, appropriate decision patterns, skills and experience of urban design professionals	

in a table called correlation matrix or covariance matrix, the most important of which are confirmatory factor analysis and structural equation modeling (SEM).

General Overview Of The Study Area

Shiraz with a population of 1,565,045 people in 2016 is the fifth largest city after Tehran, Mashhad, Isfahan and Tabriz. A survey of the city's demographic changes shows that over the six decades from 1956 to 2016, the city population has increased from 170,659 to 1,565,572. In other words, the population of the city has increased by 9.2 times in the past six decades. The establishment of electronic and petrochemical industries as well as the increasing effect of city tourism and culture and the centrality of administrative-political-headquarter services in the province can be considered as the attractive factors affecting the population growth. Table 8.3 shows the

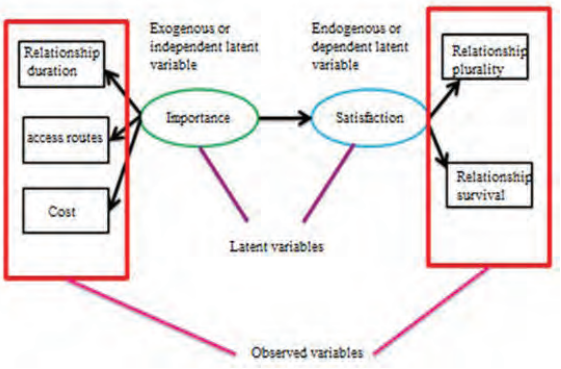


Fig 1: Variables and their relationship in SEM (Habibi, 2012)

Fig 2: Stages of SEM (Habibi, 2012)

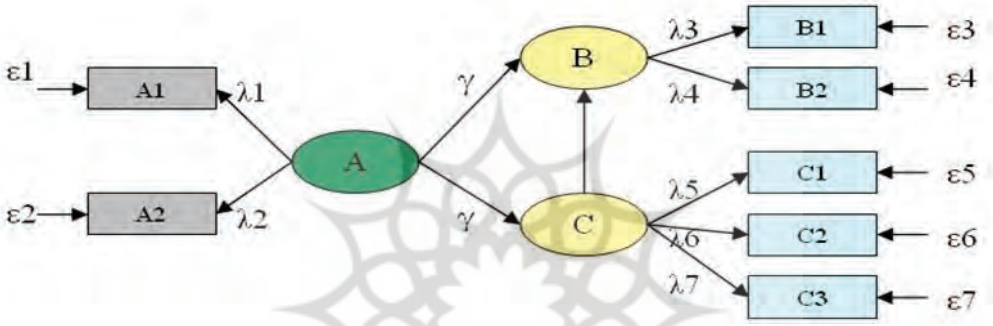


Fig 3: The overall structure of the structural equation model (Habibi, 2012)

Fig 4: Geographical location of the study area, Source: Author, 2017

trend of population growth in the last six decades. Another characteristic of the population changes in Shiraz is its uneven population distribution in the urban areas. Considering the size of the city in 2016, the population density was 74 persons per hectare (Deputy of Shiraz Municipality Urban Planning, 2016; Shahr-o-Khaneh consulting planners, 2014).

RESULTS AND DISCUSSION

The Physical Structure of the City

The process of extending urban structures, resulting from the need for land for human activities, is known as urban development. In general, the two factors of market forces and government play an essential role in this development. The private sector has always sought to maximize profits, while the government is obliged to interfere with the use of land to meet the public's needs, direct and encourage private incentives towards social interests and observing social rights.

In summary, the city's physical structure (Fig. 5) can be summarized as follows:

1. The historical area of the city with an area of nearly 350 hectares includes the primary nucleus of the city's formation. Its urban texture is compact and dense, and its buildings are old and predominantly worn out. The communication network and the urban facilities are weak and inefficient. Its population and construction density are high. Because of the decline in health and quality of housing and environmental problems, the price of land in this area is low and poor families of immigrants live in the houses of the city.
2. The central context of the city includes expansions after about 1951, where construction density is high and the level of the network of roads is inadequate with regard to urban functions.
3. The expansion of the northwest in the city gardens is considered by the well-off strata, and has high construction quality and low population density and high land prices.
4. The southern margins' expansion includes unplanned extensions beyond the scope of the comprehensive plan adopted. Due to the financial weakness of the inhabitants, the size of the plats is small, the quality of the building is low, and the population density is high. Due to the lack of a specific plan, its texture is unconnected and not compliant with the order, and its passageway has been created by itself and follows the paths of rural roads. However, due to the existence of large arid and agricultural lands, the major development of the city in future will be in this region. According to the latest approved city plan, the total area of the city is over 22,000 hectares, of which 63% account for constructed areas and 37% account for unconstructed areas.

Investigating the Feasibility of Proposed Land Uses in Shiraz Detailed Plan

Most evaluation reports on detailed plans indicate the lack of feasibility of the objectives of these plans, especially in realizing the proposed uses of the detailed design. Although several factors such as the quality and method of preparing these plans, contribute to this failure, the private ownership of land and the inability of public organizations to buy and possess needed land can be considered as one of the most important factors (Fig. 6). Research shows that in 40% of the samples, the city has not been expanded in the directions projected in plans, and in 60% of the plans, almost none of the proposed service functions has been created. This is also evident in the case of Shiraz. Although the comprehensive plan has seen the development of the city on the south side of the city and one of its goals is to prevent linear expansion, the opposite has taken place in practice.

Table 3 indicate that the status quo service per capita in Shiraz is compared with the projected per capita of the detailed plan proposed by the Ministry of Housing and Urban Development. Therefore, it can be said that the growth of land prices and volatility in the production of buildings reflect the dominance of the role of land as a private commodity in the city's economy, which not only depends on economic fluctuations at

Fig 5: Spatial and physical structure of Shiraz city (Source: Shahr-o-Khaneh consulting planners, 2014)

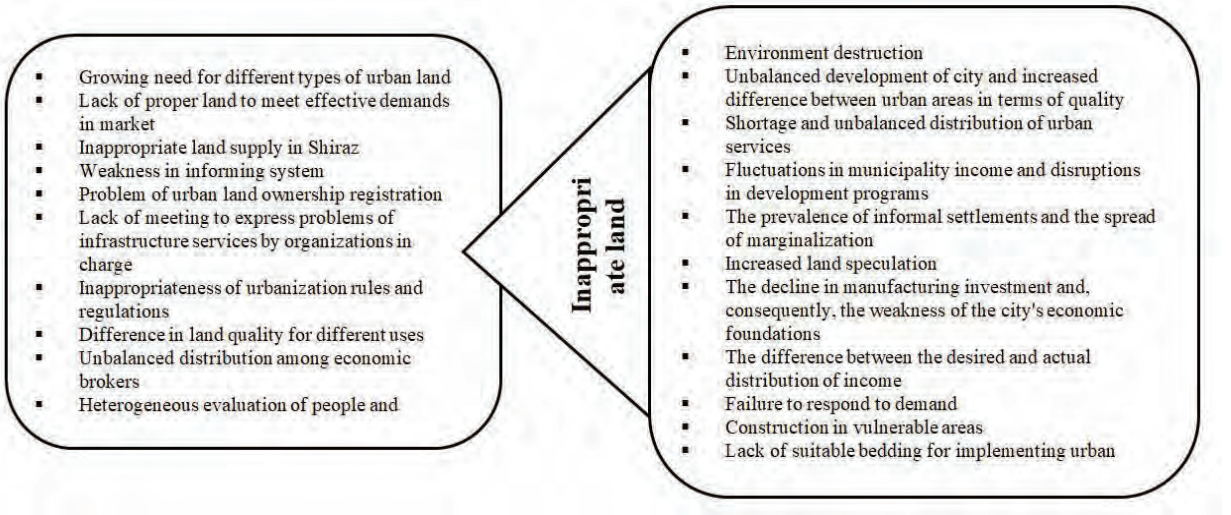


Fig 6: Issues and bottlenecks in the land market performance in Shiraz

Table 3: Comparison of status quo service per capita in Shiraz with the projected per capita of the detailed plan proposed by the Ministry of Housing and Urban Development

Services	Per capita during plan formulation	Proposed per capita of plan	Per capita of 2018	Shortage in comparison to the comprehensive plan	Housing and urbanization regulation	Shortage in comparison to housing and urbanization regulation
Educational	1.03	2.22	1.22	1	3-5	1.8-3.8
Health-Care	.74	.95	.62	.33	.75-1.5	.13-.88
Cultural	.49	.83	.7	.13	.75-1.5	.05-.8
Sport	.29	1.01	.65	.36	2-2.5	1.39-1.85
Park and green space	.92	8.37	2.91	5.46	7-12	4-9
Sum	3.67	13.4	6	7.28	13.5-22.5	7.3-16.3

the national level, but also affects land use and following the rules of urban planning.

Using SEM in Analysis of Variable Relations and Achieving Optimal Land Planning Model

The structural equation modeling is a viewpoint in which hypothetical patterns of direct and indirect relationships are examined among a set of observed and latent variables (Chin, Marcolin, & Newsted, 1996; Haenlein & Kaplan, 2004; Statsoft, 2013). Its main application is in multivariate topics that cannot be done in a two-variable manner, taking into account each time an independent variable with a dependent variable (Westland, 2015).

The structural equation model is basically a combination of path models and confirmatory factor analysis models. Path analysis is completely defined with observed variables, in which several independent observed variables and several dependent observed variables are used and evaluates the causal relationship between a set of independent and dependent variables (Sun et al., 2013). The factor analysis contains observed variables that measure one or more latent variables. The SEM includes both the above-mentioned models (Awang, 2014).

According to what was mentioned, in this section, the severity of the effect of the four (physical, activity, economic, access) factors on the land use change and then, the utility of this effect are examined. For this purpose, the second-order confirmatory factor analysis technique has been used as one of the structural equation modeling techniques to determine the severity of the effect of four (physical, activity, economic, access) factors on

land use change, through which a contributing framework for the effects of four factors on land use change is obtained.

For the above analysis, in the first step, all latent and observed variables and all possible relationships between them and the measurement and structural errors were introduced into the model (Fig. 7); however, due to the fact a number of correlations were not significance at .05% significance level and the inappropriate fit of the model, insignificant correlations (including the average area of the adjacent plates, the life of the building, the quality of the building, the land use in the previous detailed design, green space per capita, educational per capita, the average income of the household, the placement on the urban development path, distance from public transport stations, the natural landscape, the surrounding landscape quality, the proximity to natural hazards, placement in historical zone) are removed to improve the model and the covariance relationship between measurement error was drawn based on the relationship between observed variables (Fig. 8). At the end of these steps, the final path analysis model resulting from this process is obtained as shown below (See Table 4). The fit of the model is suitable (although in the model, the NFI and the CFI indices have not obtained an acceptable value, but because of their proximity to acceptable values and the acceptability of other indicators, this model is acceptable and can be used to analyze variables).

Based on the model obtained (as shown below), the "land use change rate" is more than anything else related to the "effect of access factor on land use change" (0.91). Meanwhile, the "effect of access factor" was most affected by "passage width" (0.96), "distance from the city center" (0.82), "distance from the activity centers" (0.75), "distance from the passages of over 20 meters" (0.34), and other variables within this factor are ranked next.

After "the effect of access factor", "the effect of economic factor on land use changes" (0.78) has the most role in explaining "land use change rate." This factor is also affected by "land price rate" (0.97), "the amount of construction around the desired plate" (0.84), "placement in the effective urban project area" (0.75), "the proportion of proposed density with the land price" (0.65), and "placement inside or outside the area" (0.34).

In the third place, after "the effect of economic factor," "the effect of activity factor on land use changes" (0.65) has the most role in explaining "land use change rate." This factor is affected by "review plan use" (0.89), "previous detailed plan use" (0.82), "adjacent land use change rate" (0.45), and "arid lands around the intended land" (0.32).

Finally, "the effect of physical factor on land use change" (0.56) is placed. It is most affected by "plate area" (0.86), "symmetric geometric structure" (0.58), "number of floors in the review plan" (0.46), and "number of floors in the current situation" (0.41).

In total, the selected four factors have a significant effect on the land use change. It is such that the standardized weights of regression for "the effect of the access factor on land use change", "the effect of the economic factor on land use change", "the effect of the activity factor on land use change", and "the effect of the physical factor on land use change" are .91, .78, .65, and .56, respectively.

Using SPSS software, more than 50 parameters were analyzed in about 600 plots having land use changed during 1994-2017. The results were as follows:

1. Most land use changes were in districts 1, 2, 7, 5, 3, 4, 10, 9, 6, and 11.
2. 91% of the plates that had land use change during the years 1994 to 2017 had land use change in other plates within a range of around 500 meters radius.
3. 95% of the plates that had land use change were outside the heritage zones and 50% of the plates that had land use change from 1994 to 2017 were far from natural zones and the other half was near the natural zones.
4. More than 70% of the plates that had land use change from 1994 to 2017 were symmetrical in geometry.
5. More than 88% of the plates that had land use change from 1994 to 2017 were not on the development path of the city.
6. Approximately 50% of the plates that had land use change from 1994 to 2017 had a good, high-quality landscape.
7. Among the plates that had land use change from 1994 to 2017, 21.3% had a garden use in the detailed plan approved in 1994, 18.2% had a residential use, 15.1% were in the urban area, 13.6% had a park and green space use, and 11.4% had an educational use.
8. The range of price changes of lands that had land use change varied from 500 to 10 million Tomans per meter, indicating that all urban lands with different economic positions are affected.
9. Among the environmental quality index of the plates with land use change, 25% were of very high environmental quality,

Table 4: Fit indices of path analysis model in the studied area (Source: Kalantari, 2009; MacCallum, Michael, & Hazuki, 1996)

Indices	CMIN/DF	NFI	TLI (NNFI)	CFI	PNFI	PCFI	RMSEA
Acceptable	3>	.9<	.9<	>9.	.6<	.6<	.08>
Obtained	1.9	.851	.920	.867	.621	.701	.06

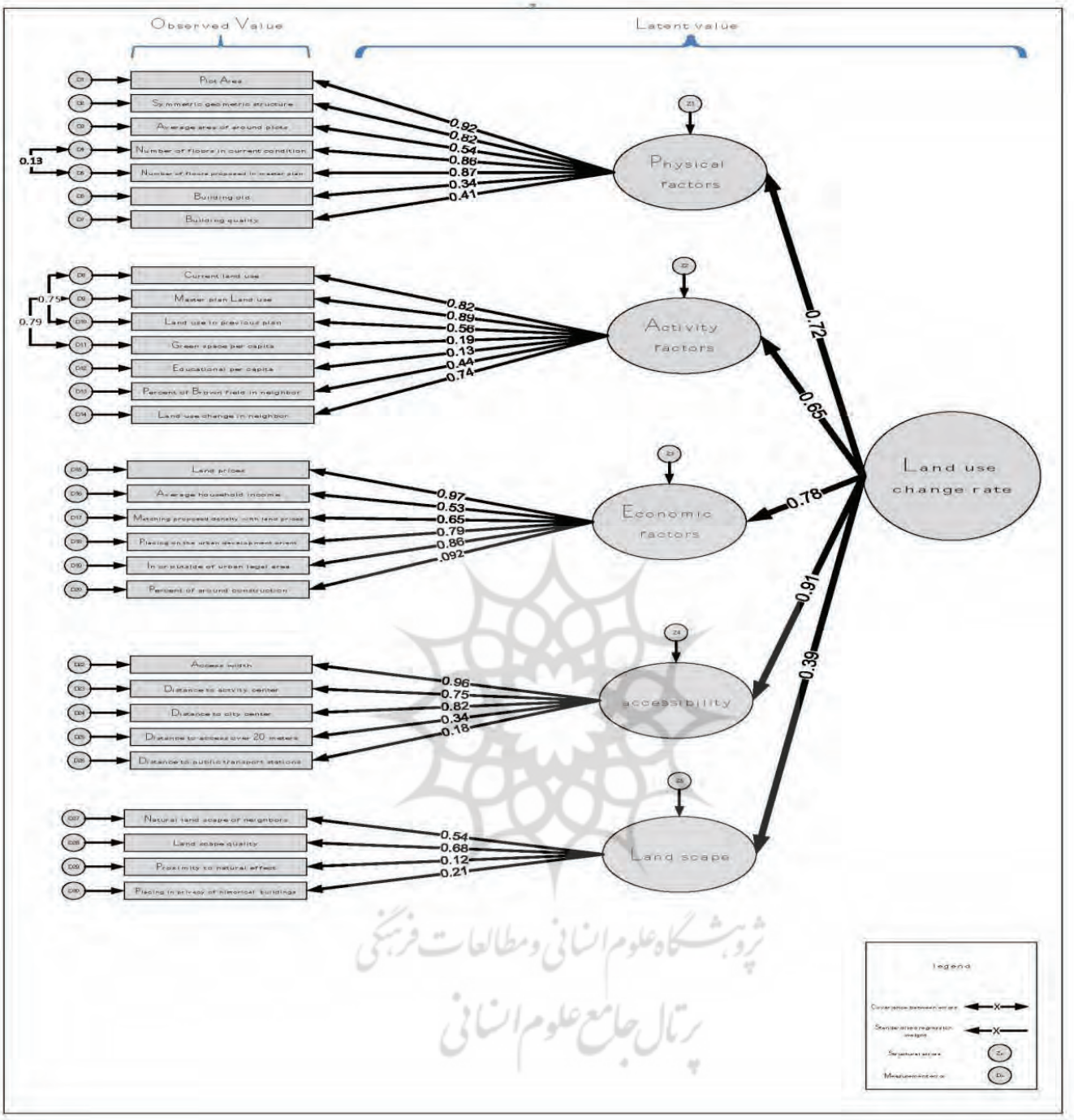


Fig 7: Explanatory framework of the effect of four factors on land use change based on standardized regression weight

20% were of high, 13% of moderate, 39% of low, and 1.9% were of very low environmental quality.

10. In 73% of the land use change cases, the density predicted for land in the review plan is not proportional to the land economy.

11. 61% of plates are within the scope of effective urban projects, 36% are not within the scope of effective urban projects, and 1.4% are negatively affected by urban projects.

12. In 83% of cases, there is a very severe lack of urban green space and there is only 9.1% green space.

13. Approximately 62% of the changes are in plates where the number of floors in the review plan is 3 or less.

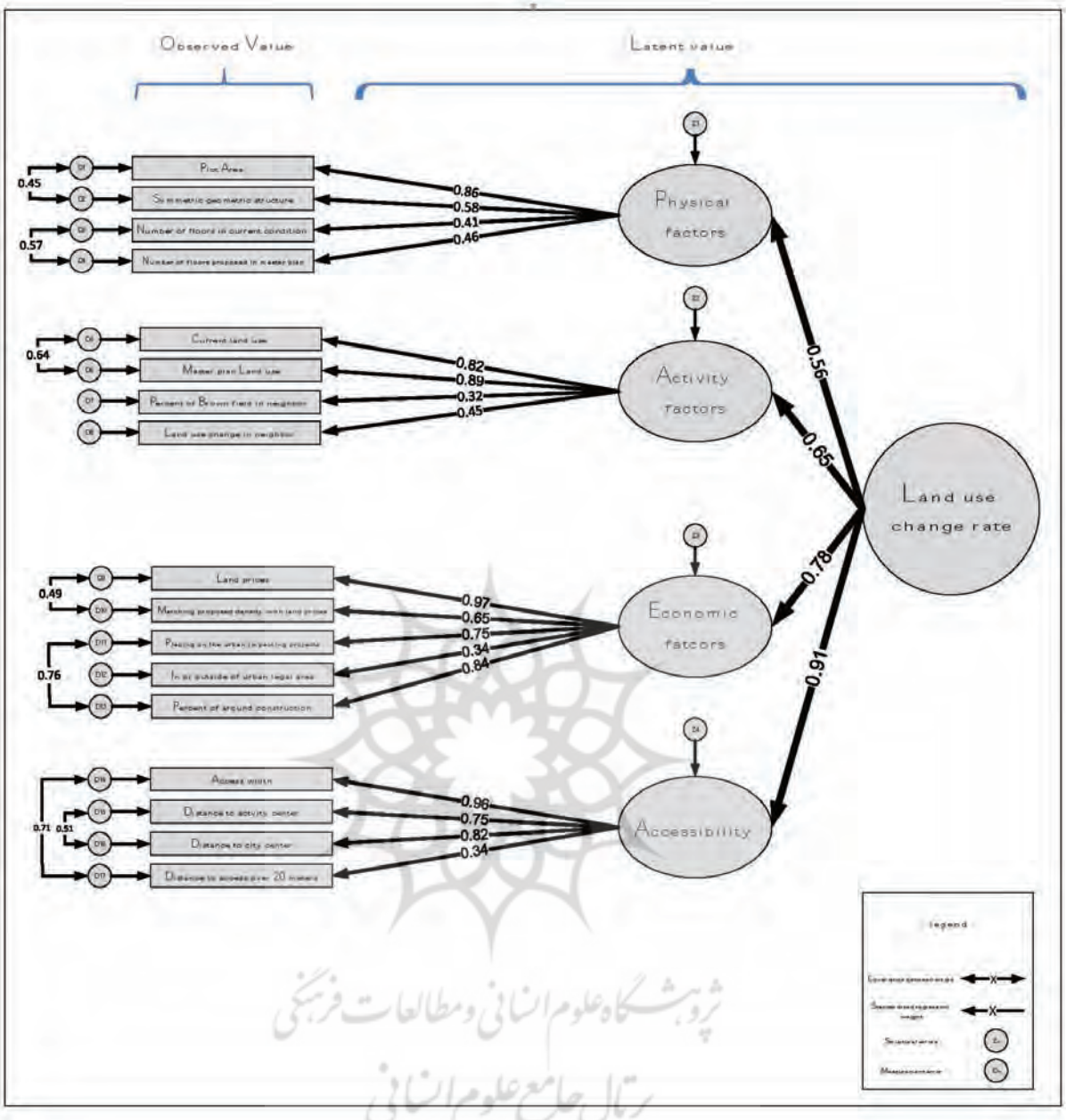
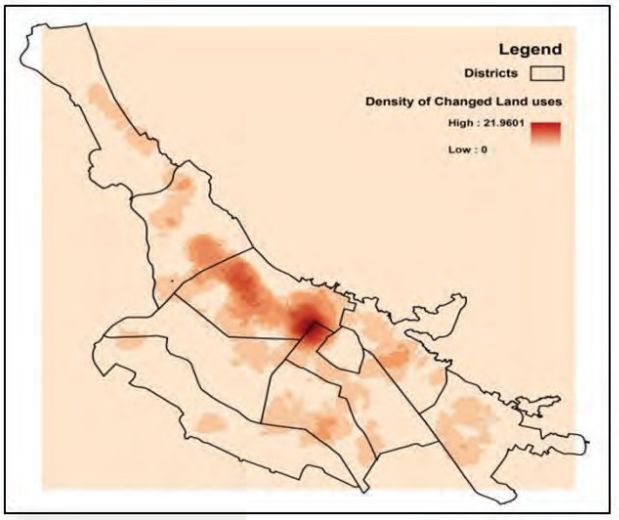


Fig 8: Explanatory framework of the effect of four factors on land use change based on modified standardized regression weight

14. The average distance between plates and passageways above 20 meters is 77 meters.
15. In 32% of the cases, 100% of the plate adjacent to the intended plate has been constructed and in 35% of the cases, under 50% of the adjacent plates are constructed.
16. The average distance to the activity centers is 100 meters and the average proposed width of the passage is 25 meters.
17. Also, 67% of the plates that had land use change are residential zones in review plan, followed by 19% being commercial-residential.
18. The existing land use status of 45.2% of the plates that had land use change is residential, 18% is arid-ruined, and 6.5% is garden. About 76% of the plates that had land use change are ruined and without quality that require repairs, 28% of the plates are not constructed, 13% are less than 5 years old, and 59% are more than 10 years old.
19. 56% of plates have one and two floor and 27% are arid. Also, 17% had three floors and more.



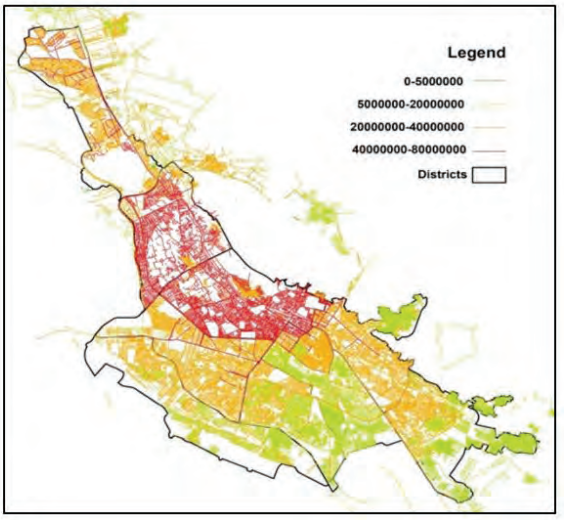
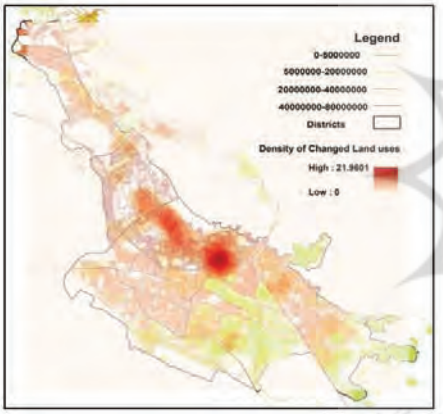


Fig 9. Changed land uses during the years 1993-2013(Fig 10. Land prices in Shiraz



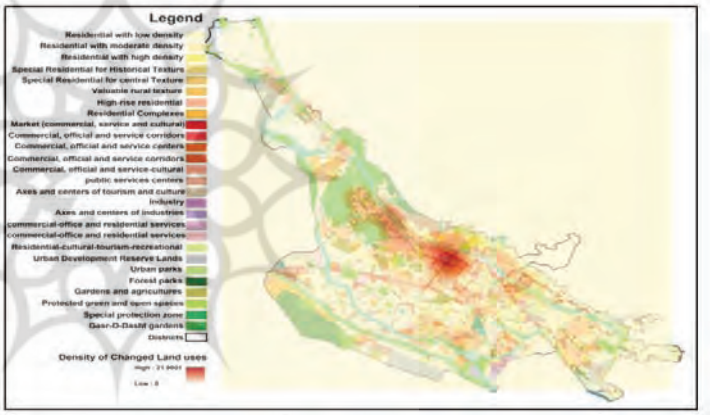


Fig 11. Position of the changed land uses relative to the zoning price

Fig 12 . Position of the changed land uses relative to the functional areas

CONCLUSION

Nearly four decades have passed since the beginning of urban development projects in Iran. Based on studies and research on the success rate of these projects, it has been noted that these plans have not succeeded in achieving their goals. As a result, urban problems have increased and the failure to realize the goals of the plans has caused severe blows and damages on the structure of the urban communities of Iran. Overall, it can be seen that the plans have not been able to actually move towards their goals. In brief, the following issues are the factors affecting this incomplete performance:

1) The procedures for the preparation, approval and implementation of comprehensive-detailed plans in Iran are generally focused and lack a coherent hierarchy in decision making and implementation. In this model, the contribution of regional, local and other social and community organizations to the participation and management of urban development is weak and very low.

2) In the current procedure, the role of the private sector and how it participates in urban development plans and how they interfere in the development of urban construction is not properly defined. Therefore, in most cases, their actions are in conflict with the public sector measures.

3) Municipalities are inactive for the implementation of projects because the content of these projects is nothing but a set of rules and regulations that the private and public builders are required to observe. The role of municipalities is limited to

control and monitor these rules and regulations.

4) In these plans, all urban lands are determined definitively taking into account the details of plans and find a legal aspect after approval by the authorities, the municipalities are not free to change these rules and regulations.

5) Another major problem with the implementation of urban development projects is the issue of private property and the laws and regulations that will abandon the implementation of these projects. The issue of ownership and the legal status of land and property in the route of the projects are considered to be a very important factor underlying all urban development plans, which must be taken very seriously and deeply in the early studies of urban development policymakers. They are implemented after presenting any plans.

Also, the reasons for failure and incompleteness of the existing system of urban management, in general, and urban development plans, in particular, can be considered in three main fields:

1. The inconsistency of the plans with the dynamic nature of the city (the plan's inflexibility)
2. The inconsistency of the plans with community conditions (notr ealistic)
3. Failure in urban management system, especially urban land management

Following the above-mentioned issues, the extent and direction of the factors affecting the feasibility of service land uses in the city of Shiraz are explained using the structural equation model (SEM). In detail, using the SEM for analyzing the relationship between variables and achieving optimal land planning model were used to find causal relationships and latent and observed variables on the level of complex equations. In this regard, the concepts related to land use change were studied using document-library sources and then, the severity of the effect of the four (physical, activity, economic, access) factors on land use change and their desirability was investigated. For this purpose, the second-order confirmatory factor analysis technique was used as one of the structural equation modeling techniques to determine the severity of the effect of the four (physical, activity, economic, access) factors on land use change, through which a contributing framework for the effects of the four factors on land use change was obtained. Finally, the extent and direction of the factors affecting the feasibility of service usage in the city of Shiraz were explained using the structural equation model (SEM). In order to achieve these goals, 50 variables affecting 600 plots (that had land use change from 1994 to 2017 at the commission of article five) in Shiraz city were extracted through field method. The variables were investigated and analyzed using GIS maps, Amos and SPSS software, and a series of bi-variable correlations in a table called correlation matrix or covariance, the most notable of which were confirmatory factor analysis and structural equation modeling (SEM).

The results of the research show that, in total, the selected four factors have a significant effect on the land use change. It is such that the standardized weights of regression for "the effect of the access factor on land use change", "the effect of the economic factor on land use change", "the effect of the activity factor on land use change", and "the effect of the physical factor on land use change" are .91, .78, .65, and .56, respectively.

The results indicate that in an exploratory factor analysis process, the structural equation model (SEM) was used for the first time in order to clarify the relationship between criteria and indicators of the effectiveness of urban development plans. Also, the effect of new indicators was also explored in the research process which indicated that the model is a suitable tool for developing the hidden and obvious variables of the research subject as well as providing new indicators for feasibility studies in Iranian examples in international studies.

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