

Analysis of Sustainable Development Drivers in the World Heritage Area of Yazd City, Iran

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ABSTRACT

Globalization process and rapid urban expansion have affected the historical fabrics causing forgetfulness and physical-functional worn-out fabrics. Therefore, the present study aims to identify drivers affecting the sustainable development of the world heritage area of Yazd City and investigate how these factors affect each other. Hence, this is applied research in terms of objective and an analytical-exploratory study in terms of method. Data were collected through the documentary-survey method. Moreover, the variables identified through brainstorming, literature review, studied upstream documents, field reviews, and interviews with experts were integrated, scrutinized, and then vague options were removed. Finally, 23 factors were introduced as the sustainable development drivers of the world heritage of Yazd in sociocultural, economic, physical-functional, and managerial-organizational scopes. Ultimately, the identified 23 factors were evaluated using the Delphi technique based on the opinions of 15 experts and elites through the MICMAC Software. The results of variables' dispersion in influence and dependence diagrams through MICMAC Software indicated system stability. In the end, 10 key factors were identified with the strongest influence scores and 10 key factors with the strongest dependence. In terms of direct and indirect influence and dependence, seven key factors were identified as future development drivers for the historical fabric of Yazd. Managerial policies, social security, and well-being, rules, and regulations, incentive policies, tourism services' status, investment rate, public and private sector, diverse job opportunities, coordination between organizations, awareness level, urban management specialty, and upstream plans were respectively the most strategic factors for sustainable development of the historical fabric of Yazd.

Keywords: Sustainable Development Drivers, World Heritage, Yazd City, MICMAC Software.

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1. INTRODUCTION

The rapid urban growth over recent years has widely jeopardized the urban environments and made city sustainability more challenging (Gonzalo et al. 2020). Such evolutions have taken an architecture without any identity instead of paying attention to traditional settlements and their values (Tugcu and Arslan. 2019). Among such modern urbanization developments and the subsequent issues, historical centers and fabrics of cities have been more affected by adverse impacts of urban development, so these influences can be seen in the sustainability of historical areas of the world, especially in historical cities of Iran (Ebrahimi Kargar Shirazi and Abedzadeh 2006). As a precious heritage and valued traditional architecture and urban planning of Iran with unique historical and cultural elements (Kalantari Khalilabad and Poorahmad 2005), the historical area of Yazd is influenced by this rapid urban trend. This area has been listed in UNESCO World Heritage Sites, and this has become a unique opportunity for the sustainable development of this area. Moreover, this opportunity may become a threat if the changes in this development path prevent identifying and controlling the key factors, including economic, physical, and environmental drivers influencing the development trend. Therefore, the main question of this study is about the key actors of such changes regarding the importance of key drivers in sustainable development trends and promising future anticipated by urban managers and planners. Hence, the extant study was inspired by the mentioned question to analyze the key drivers of sustainable development in the world heritage area of Yazd City.

2. BACKGROUND

After the word "sustainability" was integrated into the concept of development in the early 1970s, many international conferences and seminars have been held and numerous books and papers have been published, and also many researchers defined, explained, and interpreted this term (Moaiedfar 2020). Moreover, future study is a modern attitude towards the planning process over the recent decade (Geneletti 2012), which can be used to predict the available trends by identifying and controlling the key drivers of upcoming trends of historical textures. Despite the importance of this subject, few studies have been conducted to identify core drivers and factors of world list sites. This part of the study reviews some studies that their relevant subjects, method, or results that can be used in the present paper:

- Ariani and Fouzi (2019) conducted a study under the title of "Analysis of strategic variables for ecotourism development" to evaluate strategic factors affecting tourism development in the Kedung Ombo district in Indonesia by using MICMAC software. The results

indicated that governance and managerial policies played a vital role in this case.

- Asmelash and Kumar (2019) studied the relationship between tourist satisfaction and sustainable heritage tourism development in Tigray, Ethiopia, and concluded that institutional sustainability in tourism management brought tourist satisfaction, and tourists' perception of the economic dynamic of tourism affected their satisfaction. On the other hand, no significant relationship was seen between satisfaction and the environmental status of the studied area in terms of heritage tourism.

- Saghaei et al. (2020) analyzed key factors influencing the expansion of rural migration with emphasis on the issue of informal settlement (Case Study: Shirabad Neighborhood in Zahedan) and concluded that lack of infrastructural facilities in villages, lack of health-medical services, poverty, and deprivation were key factors causing immigration or villagers to informal settlements.

- Izadfar and Rezaei (2020) conducted a study under the title of "Identifying the key factors affecting sustainable urban regeneration with a futures research approach" and introduced international sanctions, social and civil institutions, inflation, parallel institutions in most parts of government, the concentration of government offices and centers in the capital, the performance of monitoring and inspection apparatuses, domestic and foreign investment, new technologies, administrative system crisis, and financial crisis as the key factors affecting the inefficient fabric of Yazd City.

- Kargar Asle Zenoozi, Ezzatpanah, and Valizadeh (2020) conducted a study under the title of "Identifying and analysis of drivers affecting the future development of commercial tourism industry with future study approach (Case Study: Jolfa City)." The results of this study showed that among 40 variables, key drivers included improvement of economic and employment status in the district and increasing investment of the private sector, which were affected by the future development of the tourism industry of the area. Moreover, some variables are strategic (with high influence and low dependence) which include the development of political and security stability of the country, the establishment of new factories and industries in the area, and the improvement of the tourism culture of people.

- Mahmoodi Chenari (2020) carried out a study under the title of "Modeling effective components on development agritourism township (Case Study: Masal County, Gilan Province, Iran)" that examined the agritourism model for the first time in Iran. This study concluded that joint agricultural activities can be done in this area in presence of tourists, farmers, rural environments, and stakeholders, while two latter factors were more significant than three other factors.

- Rasoil and Shirmohammadi (2020) conducted a study under the title of "Analysis of the Pattern for

the physical development of desert cities by the prospective approach: A case study of the City of Yazd." The results of the cross-impact matrix based on the experts' opinions introduced 8 factors as key drivers for the physical development of Yazd City: paying attention to the role of stakeholders and groups in urban development, parallel works in policy execution institutions, the prevalence of speculation due to mastery of private ownership, labor division between public and private sectors in the field of urban management, concentrated and decisive decision-making system in the urban field, attachment of different areas to the city, encouraging internal growth, and land price control. Finally, the Wizard scenario software identified three prospect scenarios by integrating effective factors: desired status of physical development, continuing the current trend, and critical condition of physical development. - Moaiedfar (2020) conducted a study under the title of "Forecasting in the historical texture with a sustainable development approach" to identify factors affecting resolving the existing problems in the historical context of Yazd City based on sustainable development in the case study of Shesh Badgir district of Yazd. Hence, results of the cross-impact matrix through MICMAC software indicated that attention to fabric and inattention of officials had the highest influence compared to other factors. Accordingly, the specific and desired attention of officials and municipalities in addition to people's attention and orientation of urban development plans for revival and sustainable development of historical fabrics plus other factors can influence the improvement of historical fabrics.

3. LITERATURE REVIEW

Development is a process that empowers people and government to improve various unified economic, social, and cultural conditions to achieve development. A development process is a sustainable form that goes back to human civilization. According to the most comprehensive concept of development, it meets some present needs without analyzing the capacity of future generations. This is a concept that tends to achieve a stable and durable process (Saki 2017). Therefore, the intergeneration prospect outlook is one of the most important approaches used to achieve considerable sustainable development goals (Nasr 2019). In this case, drivers are events and measures that effectively shape the past and present, so can influence future events (Badmint 2011). Although it can be claimed that globalization is not a phenomenon limited to the 20th and early 21st centuries, globalization of this era differs from the past. Hence, "globalization of historical heritage" is assumed as a solution used to create tangible communications between past and present (Harrison 2015). A memory from the past that the present generation lives with it

and transfers to future generations allowing them to learn and enjoy (Jopela and Pereira 2011). Available studies indicate that the world heritage registry in the UNESCO list can lead to positive changes in communities. However, these conditions may cause negative impacts and tension between maintenance and development streams (Rastegar et al. 2021). Hence, the World UNESCO organization emphasizes the balance between preservation and development to transfer this precious heritage to future generations. Therefore, these values areas must take the step toward a sustainable development path by accurate detection of suitable preservation strategies (UNESCO 2015). In fact, listing work in world heritage draws more attention from officials, experts, and people to this precious work, as well as specific attention of the world organization in different scopes. Therefore, world heritage decisions must be made prospectively requiring the identification of key factors and drivers in the future destiny (particularly, hey sustainable development drivers in this study) of the world registry arena.

The main subject of future studies is to identify key drivers affecting the future (Gordon 2008). Identification of key variables can influence future aspects and is necessary to develop policies and strategies (Saxena and Vrat. 1990), which is done through structural analysis. Structural analysis is an interactive or cross-learning process in which, a set of elements are directly or indirectly interacting within a structured or inclusive mode. Structural analysis is a method used to detect relationships between factors of a problem (Khaksar et al. 2015). Cross-impact analysis (CIA) is one of the structural analysis techniques that is used besides some methods, such as survey or Delphi in future studies (Talebian, Molaie, and Gharari 2016). Although CIA's application goes back to the 1960s (Godet and Durance. 2011), as a famous future researcher, French Godet introduced this method in the future study field and conducted many studies to classify and rank elements affecting the future of various systems (Molaie and Talebian 2016). This is an approach that 1. discovers relationships between challenges, 2. classifies challenges based on their impacts, and 3. creates a hierarchical structure of variables used to find interactions between variables that affect each other and other variables contributing to system understanding and dynamic (Janssen et al. 2019).

As an instrument in future studies, the CIA reveals the role of a variable in a relationship with other variables in a system and identifies those variables that play a vital role in developing the system in the future. Systematic description of all potential interactions between a set of variables and evaluation of these interactions' power are the main steps of analysis (Asan and Asan 2007).

MICMAC is a widely used technique, which was developed by Godet et al. (1994) (Panula-Ontto and

Piirainen 2018). MICMAC is an analytical software that was designed to solve complex computations of the cross matrix in the future study of design. This method has at least three phases:

Phase 1: variables: this phase starts by consideration of all variables or factors that reveal the studied system. Ideation and intuitive methods of experts are useful techniques for this phase. As mentioned before, variables were identified through the Delphi questionnaire.

Phase 2: building a structural analysis matrix (describing relationships between variables): structural analysis matrix is a square matrix that allows direct connection between variables. Cells save the impact factor between pairs of variables ranging in 0 (no impact), 1 (weak impact), 2 (moderate), 3 (strong), and P (potential). In this phase, experts fill out the matrix in group form. This prevents error but also organizes and classifies the ideas by creating a joint language. This phase of the study was done in presence of some experts and evaluating each index in the cross-impact matrix.

Phase 3: identification of key drivers: this phase identifies essential variables for system development. This step is done through direct classification in the first step, then through indirect classification, and finally through potential classification. Comparison of variables' hierarchies in different types of classifications (direct, indirect, and potential) is a source of information. This process helps us to verify the importance of specific variables and also discover those variables that play a vital role but are not identifiable through direct classification in the initial process. Direct influence and dependence of a variable are the sums of its row and column. The sum of each row represents the importance of the influence of a variable on the whole system (other variables), while the sum of a column indicates the dependence degree of a variable on other ones. After inserting the matrix data into the MICMAC Software, the expected outputs (including direct influence (DI), indirect influence (II), direct dependence (DD), indirect dependence (ID), potential direct influence (PDI), potential indirect influence (PII), potential direct dependence (PDD), and potential indirect dependence (PID)) are obtained.

Moreover, variables existing in the MICMAC software are classified into four categories:

1. Effective or influential variables
2. Dichotomous variables
3. Dependent variables
4. Independent variables (Barati et al. 2019).

The Delphi technique is one of the methods used to obtain group knowledge. This method relies on the assumption that collective intelligence improves individual judgments and attracts the collective opinion of experts. this process comprises interactions between participants in two or more surveys within a short time (Rao et al. 2010). Rowe and Wright (2001)

introduce the following principles to use experts' opinions in the Delphi technique:

- Use experts with appropriate domain knowledge.
- Use heterogeneous experts.
- Use between 5 and 20 experts.
- In the expression and feedback of experts' opinions within different steps, the mean value of opinions (if available) and rational reasons of each expert must be pretested clearly.
- Continue Delphi polling until the responses show stability. Generally, three structured rounds are enough.
- Obtain the final forecast by weighing all experts' estimates and aggregating them (Grime and Wright. 2014).

4. METHOD

This was applied research in terms of the objective because it can direct this precious heritage towards a sustainable development path while preserving it by identifying and analyzing the development drivers. Moreover, the research method is based on the analytical-exploratory method, which was done using quantitative and qualitative models. Data collection was done through the documentary-survey method. The identified variables were found through brainstorming, literature review, studied upstream documents, field reviews, and interviews with experts that were integrated, scrutinized, and then vague options were removed. Finally, 23 factors were introduced as the sustainable development drivers of the world heritage of Yazd in sociocultural, economic, physical-functional, and managerial-organizational scopes based on Table 1. Various methods exist in future studies to understand change factors better. This study used the Delphi technique due to the nature and main objective of the research. This process tried to make selected experts and elites involved in the discussed problem, and they must be motivated the participation and feel that group consensus information is valuable for themselves. The selected experts must have comprehensive knowledge of different sustainability dimensions and should understand the necessary sustainability of this precious heritage. Accordingly, the panelists of this study are 15 academic professors and elites with considered specifications. It is worth noting that cross impacts of variables identified through the Delphi technique were evaluated within two round-trip stages and a quantitative questionnaire in the frame of cross impacts matrix by weighing variables. Accordingly, the cross impacts matrix with 23*23 dimensions was evaluated through MICMAS Software. Finally, the most strategic factors with the highest influence and dependence were selected as sustainable development drivers in the world heritage area of Yazd City.

Table 1. Sustainable Development Drivers of World Heritage of Yazd City

Dimensions	Driving Forces		
Social/Cultural	Population rate	Immigration rate	Participation rate
	Social Security and Well-being	Awareness and education level of citizens	Social harms and anomalies
Economic	National/local economic status	Investment rate of private and public sectors	Land ownership
	Land price	Residents' income	Competitiveness
	Diverse job opportunities (job creation, employment of native and non-native individuals)		
Physical/Functional	Tourism services	Barren lands and license plates	
	Fabric preservation (physical-functional)	Access to urban services and facilities	
Managerial/Organizational	Upstream plans' approach	Management policies' approach	Rules and regulations
	Coordination between organizations	Awareness and skill level of urban managers	Incentive policies

5. INTRODUCTION TO THE WORLD HERITAGE OF YAZD CITY

The historical fabric of Yazd City was nationally registered in 2005 and was registered in the world heritage list as the first historical urban fabric of Iran through a process and submission in the 41st meeting of the human heritage committee of The United Nations Educational, Scientific and Cultural Organization (UNESCO) in Kraków, Poland. Among

a total of 2270 hectares of the world registry, this site has been registered around 200 hectares with 660 hectares of the world registry area, which meets two criteria of III (to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared) and V (to be an outstanding example of human interaction with the environment which is representative of a culture) (World Heritage Database of Yazd City 2017).

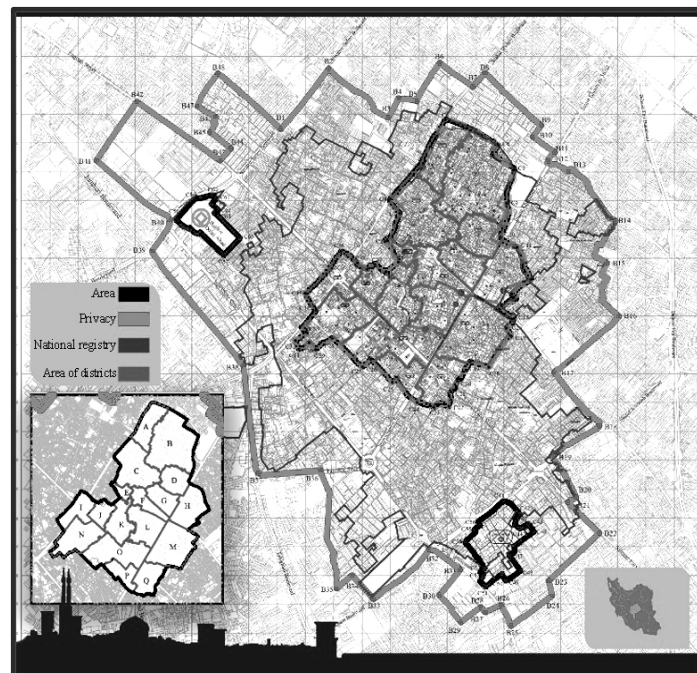


Fig. 1. World Registry Area and Privacy of Historical Fabric of Yazd City
(Cultural Heritage, Crafts and Tourism Organization of Iran 2016)

6. RESULTS

In this study, a 23*23 cross-impact matrix of key variables affecting the sustainable development of the world heritage area was created based on the quantitative questionnaires filled out (within two stages) by 15 experts through MICMAC Software as

shown in Figure 2. This matrix was created to assess the direct and indirect influence and dependence of each factor considering the influence and dependence of driver factors. The scores 0, 1, 2, and 3 represent no influence, weak influence, moderate influence, and strong or potential influence, respectively.

Table 2. Descriptive Data of Statistical Society

Sex	N	Frequency (%)	Education	N	Frequency (%)
Man	12	80	BA	4	26.67
Woman	3	20	MA	8	53.33
-	-	-	Ph.D.	3	20

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23
C1	0	2	1	2	2	0	0	0	2	0	0	1	0	0	1	0	3	2	1	0	0	0	0
C2	3	0	2	2	3	3	3	2	3	0	2	1	3	2	2	0	3	0	3	0	0	2	0
C3	3	3	0	3	3	1	2	1	2	3	1	0	3	3	3	2	3	2	2	3	2	2	0
C4	1	3	1	0	2	1	3	2	1	1	2	2	2	2	1	1	2	0	0	2	0	1	0
C5	2	2	1	0	0	2	1	3	2	0	0	0	0	0	0	0	2	0	3	0	0	2	0
C6	2	3	2	0	2	0	0	1	0	2	0	0	0	0	0	0	3	0	3	0	0	0	0
C7	0	1	0	3	2	0	0	0	0	0	0	0	0	2	2	0	0	0	1	0	0	1	0
C8	0	0	1	0	2	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	2	0
C9	3	3	1	2	2	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0
C10	0	2	1	2	2	1	1	0	0	0	0	1	2	1	0	1	0	2	0	0	0	0	0
C11	3	2	1	1	0	0	0	0	3	0	0	0	0	1	1	0	3	0	0	0	0	0	0
C12	3	2	1	1	1	0	1	0	0	2	1	0	2	2	2	0	2	2	1	2	0	0	0
C13	2	3	1	2	3	3	3	1	2	0	0	0	0	0	0	0	2	0	2	0	0	1	0
C14	2	2	1	3	2	1	3	0	2	2	0	0	0	0	0	3	2	2	2	0	0	2	0
C15	2	3	1	1	0	2	3	2	2	0	0	0	3	0	0	3	2	0	2	0	0	3	0
C16	0	2	3	2	2	0	0	0	1	2	0	0	1	2	1	0	1	0	0	2	0	0	0
C17	0	1	0	2	1	0	3	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0
C18	2	2	3	1	1	0	3	1	2	1	0	1	1	2	2	0	2	0	0	3	1	2	2
C19	0	2	0	2	0	2	2	0	0	0	0	0	2	3	3	1	1	0	0	0	0	1	0
C20	3	0	0	2	3	2	2	2	2	0	0	0	3	3	3	2	0	3	2	0	0	0	0
C21	1	1	3	2	2	0	1	0	0	3	0	0	1	2	2	1	2	3	1	2	0	0	0
C22	0	2	1	0	2	0	0	0	1	1	0	0	2	3	2	3	0	1	1	0	0	0	0
C23	2	0	3	1	1	0	0	0	2	1	0	0	2	2	2	2	2	3	1	0	0	2	0

Fig. 2. Final Cross-Impact Analysis Matrix

According to the initial analysis of the cross-impact matrix shown in Table 3, the fill index equals 78.82% indicating continuity and high influence-dependence of considered factors. In addition, Table 4 reports the results of the influence and dependence of key indicators that management policies' approach,

social security and well-being, rules regulations, and incentive policies had the highest influence with scores 40, 39, 32, and 32, respectively. Moreover, social security and well-being, immigration rate, and tourism obtained 41, 39, and 34 scores, respectively that had the highest dependence.

Table 3. Initial Analysis of the Cross-Impact Matrix's Data

Row	Index	Value
1	Matrix's dimensions	23
2	Repetitions	2
3	Number of 0	112
4	1	226
5	2	36
6	3	155
7	Sum	417
8	Fill index	78.82 %

Table 4. Influence and Dependence Rate of Key Indicators

Row	Index	Influence	Dependence
1	Participation rate	17	34
2	Social Security and Well-being	39	41
3	Management policies' approach	47	28
4	Tourism services	30	34
5	Immigration rate	20	39
6	Land ownership	18	18
7	Land price	12	33
8	Population rate	10	15
9	Social harms and anomalies	14	29
10	Access to urban services and facilities	16	18
11	Awareness and deduction level of residents	15	6
12	Upstream plans' approach	25	5
13	Residents' income	25	27
14	Investment rate of private and public sectors	29	23
15	Diverse job opportunities	29	32
16	National/local economic stability	19	20
17	Fabric preservation and maintenance	14	37
18	Rules and regulations	32	18
19	Barren lands and license plates	19	27
20	Incentive policies	32	14
21	Coordination between organizations	27	3
22	Competitiveness	19	21
23	Awareness and skill level of urban managers	26	2
Sum		534	534

The indicators' influence graph in Figure 3 depicts the direct and indirect influences and dependencies between variables in which the coordinate of variables indicates their influence and dependence rates. The distribution and dispersion condition of factors in the map indicates system stability or instability. Two types of dispersion exist in the CIA through MICMAC software. In stable systems, the

distribution of variables is L-shaped, which indicates that some variables have high influence while others have high dependence. In contrast, the situation is more complicated in unstable systems. In this system, variables are distributed around the diagonal axis of the map and variables have an intermediate mode of influence and dependence (Izadfar and Rezae 2020).

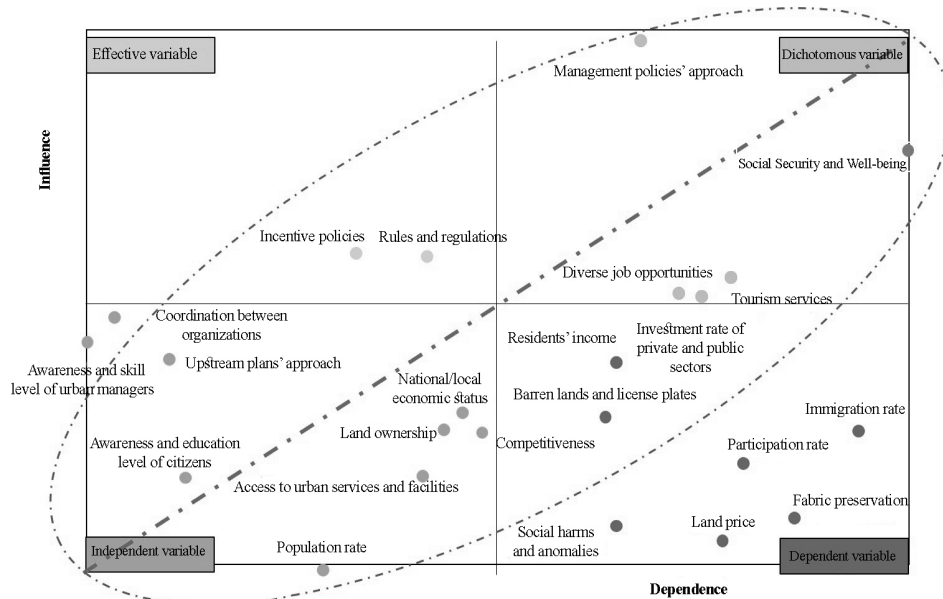


Fig. 3. Graph of Indicators' Influence

In this research, most variables are distributed around the diagonal axis of the chart, which indicates the unstable status of the system, and the system has high influence or dependence.

According to the analysis of the influence and dependence plan of indicators, it can be explained that dichotomous variables represent strategic variables because they can be controlled by the management system and also can affect the influence system. The indicators of management policies' approach, social security and well-being, diverse job opportunities, investment rate of private and public sectors, and tourism services are placed in this area. "Effective variables" exist in the second area, and planners rarely can change them. In this study, rules and regulations,

and incentive policies meet such conditions. The third area includes dependent variables: coordination between organizations, awareness and skill level of urban managers, national/local economic status, land ownership, awareness and education level of citizens, access to urban services and facilities, competitiveness, and population rate. These variables have very low influence and dependence. Finally, the factors placed in the fourth area include residents' income, immigration rate, participation rate, barren lands and license plates, fabric preservation, land price, and social harms and anomalies that highly depend on other variables, and are mainly the outcomes of other variables.

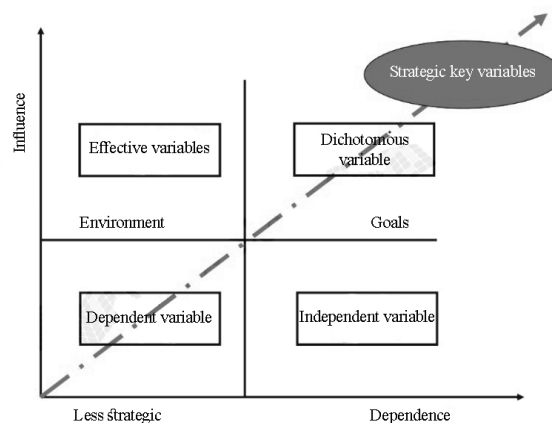


Fig. 4. Graph of Indicators' Influence

Figure 5 depicts the graph of the direct relationship between variables of the system, and experts determine the dependence rate of variables in Delphi sessions.

All of the sustainable development indicators of the world heritage area of Yazd City are at the strongest influence rate in direct relationships.

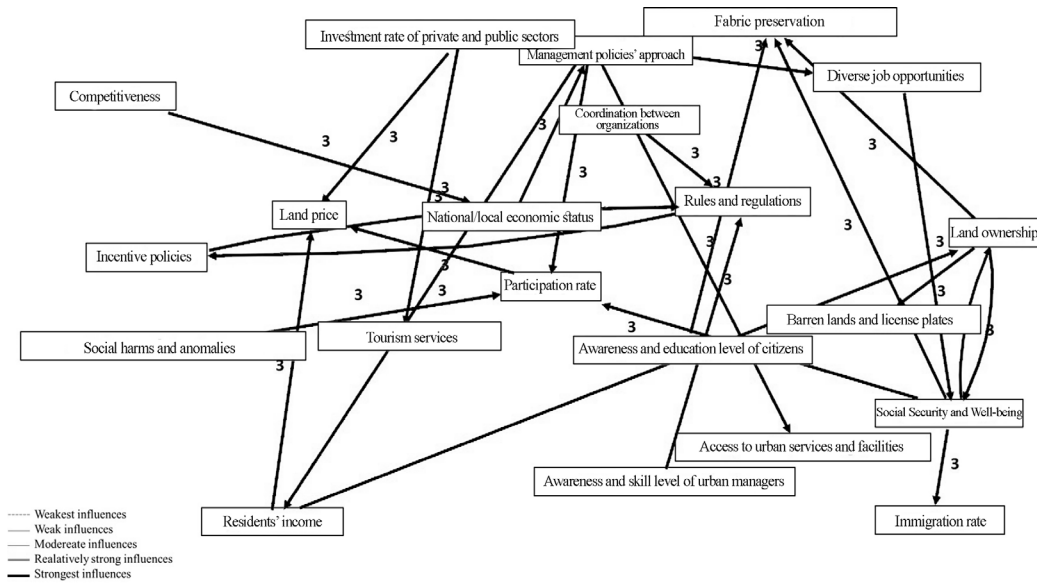


Fig. 5. Graph of Direct Influence Cycle

Figure 6 indicates the matrix of potential direct influence (MPDI), which shows present and potential influences and dependencies between variables. This matrix completes the matrix of direct influences (MDI) regarding the future predictable relationships.

Hence, MPDI seems more prospective than MDI, so is more suitable for prediction. Moreover, the relationships in this matrix are at the strongest level of influence like MDI.

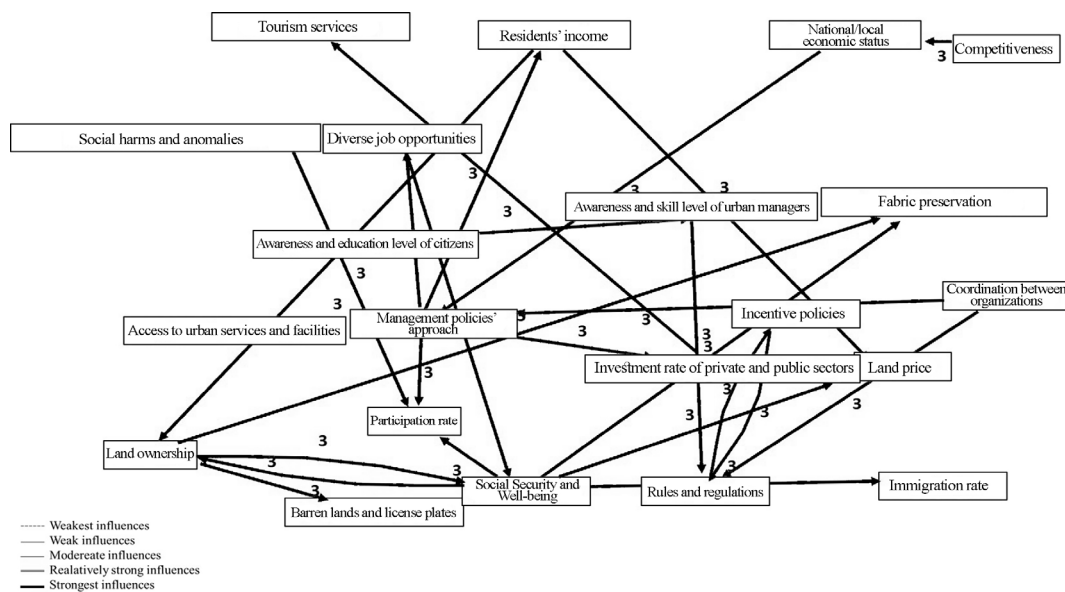


Fig. 6. Graph of Potential Direct Influence Cycle

The Matrix of indirect influence (MII) and matrix of potential indirect influence (MPII) are corresponding

matrixes of MDI and MPDI, respectively, which have been strengthened through successive repetitions.

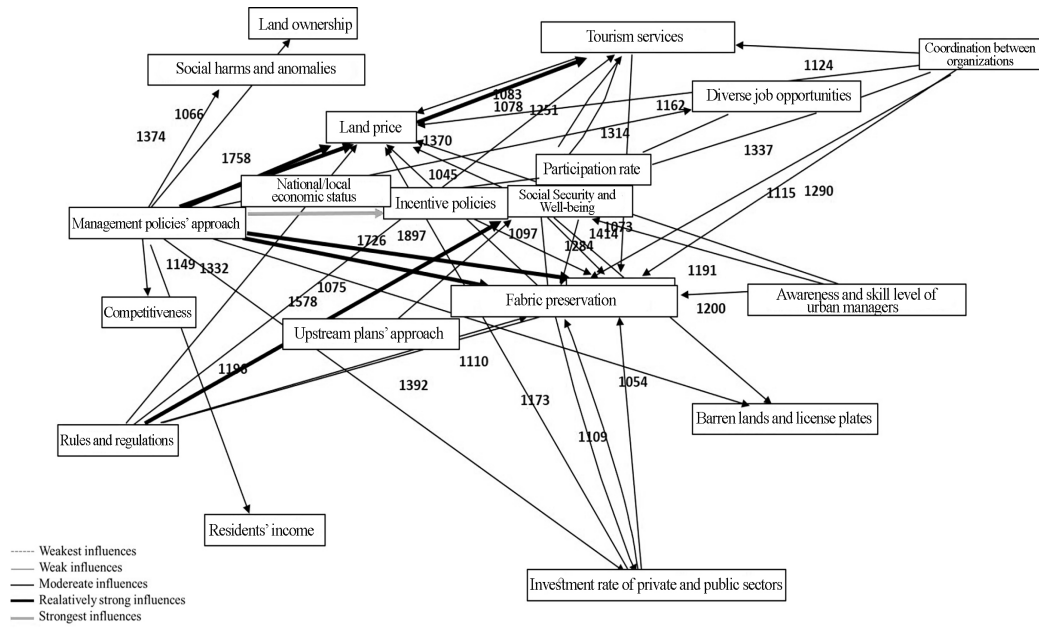


Fig. 7. Graph of Indirect Influence Cycle

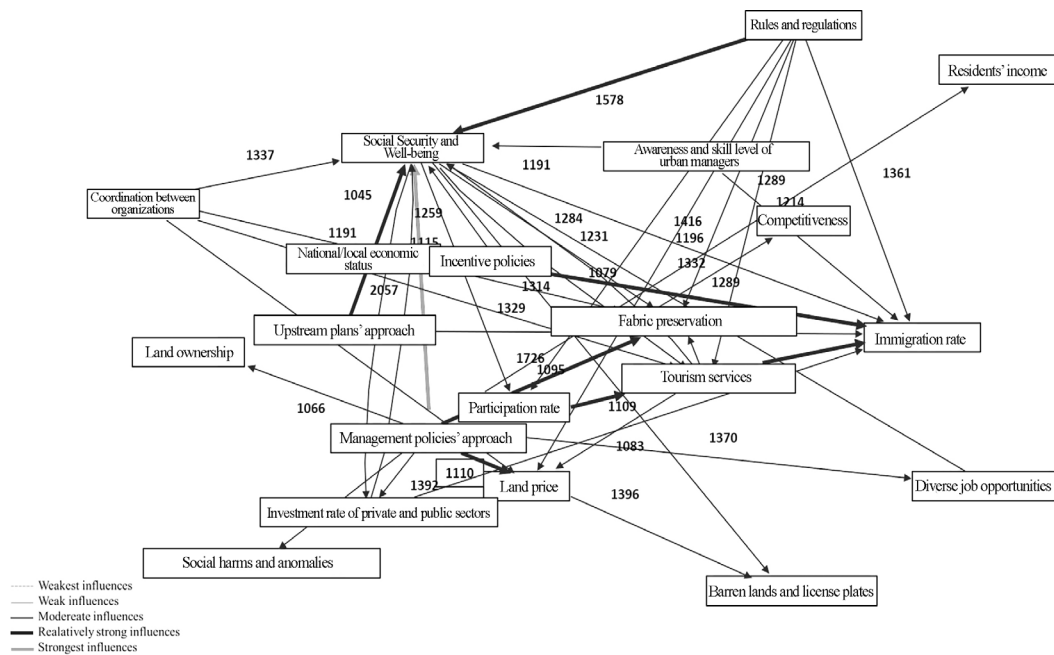


Fig. 8. Graph of Potential Indirect influence Cycle

According to the analysis of mentioned factors, 10 influential and 10 dependent factors were identified and reported in Table 5. Among them, 7 factors are

repetitive that are introduced as key drivers reported in Table 6.

Table 5. Influence and Dependence Rate of Key Indicators

Row	Key Indicators with the Highest Influence	Key Indicators with the Highest Dependence
1	Management policies' approach	Management policies' approach
2	Social Security and Well-being	Social Security and Well-being
3	Rules and regulations	Rules and regulations
4	Incentive policies	Coordination between organizations
5	Tourism services	Incentive policies
6	Investment rate of private and public sectors	Awareness and skill level of urban managers
7	Diverse job opportunities	Tourism services
8	Coordination between organizations	Investment rate of private and public sectors
9	Awareness and skill level of urban managers	Diverse job opportunities
10	Upstream plans' approach	Upstream plans' approach

Table 6. Key Sustainable Development Drivers of the World Heritage Area of Yazd City

Row	Key Drivers
1	Management Policies' Approach
2	Social Security and Well-Being
3	Rules and Regulations
4	Diverse Job Opportunities
5	Investment Rate of Private and Public Sectors
6	Incentive Policies
7	Tourism Services

7. CONCLUSION

Historical fabrics are precious heritages that have been affected by the globalization trend and rapid urban expansion. The most step to future development is the identification of key variables and their relationships. Hence, the present study aims to identify the variables affecting the future development of the historical fabric of Yazd City. the variables identified through brainstorming, literature review, studied upstream documents, field reviews, and interviews with experts were integrated, scrutinized, and then vague options were removed. Finally, 23 factors were introduced as the sustainable development drivers of the world heritage of Yazd in sociocultural, economic, physical-functional, and managerial-organizational scopes. The results obtained from variables' dispersion in the influence-dependence graph of variables through MICMAC Software indicated system stability. Finally, 10 key factors with the highest influence and 10 factors with the highest dependence were identified. According to direct and indirect influence and dependence, seven key factors were identified as future development drivers for the historical

fabric of Yazd City. Management policies' approach, social security and well-being, rules and regulations, incentive policies, tourism services, investment rate of private and public sectors, diverse job opportunities, coordination between organizations, awareness and skill level of urban managers, and upstream plans' approach are the most strategic factors in the development of the historical fabric of Yazd City. Therefore, it seems that the role of approaches and policies taken by managers is substantial for the sustainable development process of the world heritage area. Because managers are important actors in this process and have a relatively strong execution power, their viewpoint about development affects other factors in the future. Those managers that are aware of the importance of this precious context would take the responsibility to preserve this area for both present and future generations. The executive power of the managers can meet the needs of present residents and future generations. Managerial organizations must formulate their policies in line with a single objective. The policies must be adopted based on the knowledge, skill, and viewpoint of people. Knowledgeable and expert managers can create incentive policies and pave the way for investment in historical fabric. This is capital that can be spent to protect the physical and functional aspects of this precious base and create various job opportunities based on active and dynamic development. Incentive policies can also preserve available financial and spiritual capital, such as native residents. Accordingly, rules and regulations are highly important for systematizing the factors and measures affecting the reliability of heritage. The rules and regulations can control and direct effective measures in different dimensions keeping them in line with sustainability objectives and preventing them from deviation. The content of these rules and regulations can be effective in pursuing the goals. In addition to rules and regulations, the upstream

plans' approach can be a framework for achieving goals, and its strategies, policies, objectives, and rules can effectively direct this approach. Diverse job opportunities, social security and well-being, and other welfare factors are major goals of sustainable development. On the other hand, they are key variables used in protecting native residents of the fabric encouraging them to remain in the texture. Those residents whose presence is the main factor for historical fabric sustainability have played an effective role in protecting this valuable heritage and transferring it to the future generation. Therefore, improved quality of life of residents and consideration of well-being and tourism services in the fabric allows a wide range of residents and tourists to live there introducing this precious heritage to the public. Finally, it can be explained that key drivers must keep this unique or at least exceptional testimony to a culture and ancient tradition (criterion III), which is a cultural reportative of human-environment interaction (criterion V), and transfer it to future generations. The mentioned measures help sustainability to find its way in recent decades and centuries and pass it accurately.

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Mehrabi, M. et al.

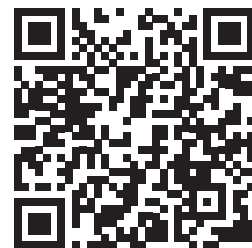
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