Research Paper: Localization Patterns of Temporary Housing After the Earthquake in Rural Settlements with Physical-Spatial Sustainability Approach (Case Study: Villages of Tarom District in the Northwest of Iran)

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ABSTRACT

Purpose: Reducing the vulnerability of earthquake victims and accelerating the temporary housing of villagers in crises.

Methods: This research is a descriptive-analytical study. Surveys were conducted among 381 residents of the villages of Tarom county as a statistical population.

Results: The findings show that according to the statistical population, the indicators of materials, cost, and time are the first three priorities of village residents with scores of 0.335, 0.182, and 0.127, respectively, and the indicators of staff, public participation, climatic comfort, moisture resistance and durability with scores of 0.102, 0830, 0.071 and 0.0631 are placed in the next priority categories. From their point of view, the use of skilled labor and indigenous knowledge, while saving the time and cost of temporary housing, increases the participation of village residents in the temporary housing process.

Conclusion: In general, it can be said that due to the high morale of the villagers in collective participation, this characteristic is intensified in crises, and the desire of villagers to participate in temporary housing increases in all kinds of participation. Using their indigenous knowledge and experiences gained during their lifetime in the village, they can accelerate the temporary housing process with their experimental construction techniques.

1. Introduction

The risk of earthquakes has threatened human settlements ever since. Despite the advancement of science and technology in the current era, humankind has not yet been able to predict and counteract earthquakes accurately. However, it is possible to minimize the devastation through appropriate management (Dadras et al., 2019). Considering the primary need of disaster victims is shelter, People need to be able to settle in areas that are safe and distant

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from major risks before such crises hit (Motaki et al., 2019).

When a crisis hits, in addition to human and financial losses, it causes considerable social damage. Given the vital importance of housing and shelter for human beings, the prediction and implementation of places for temporary housing for people affected by disasters are unavoidable and the top priorities. One of the important tasks of crisis management planners in the planning and execution systems is specific predictions for temporary and emergency housing (Bouzarjamhari et al., 2015).

Statistical analysis of the last decade shows that, on average, there was one earthquake every year with a magnitude of 6, and a 7-magnitude quake has occurred every ten years in the country. In this regard, Iran is considered the world's most earthquake-prone country. This issue and Iran's special climatic conditions have increased the likelihood of natural disasters. Consequently, on average, three million people become homeless yearly, and about 80% of those are those whose homes are destroyed by the earthquake (Disaster Reduction, 2005).

Based on the classification of the seismological society of central America, "interim housing" includes conditions in which the arrangements to provide security, water, energy, heating, and cooling for the homeless take more than a year or more to obtain permanent housing. A comprehensive definition of the Quarantelli "temporary housing" involves the resumption of household responsibilities and routine activities in the new quarters. The evacuees know that the living arrangements exceed a mere emergency or temporary basis. The evacuees may occupy mobile homes, rented apartments, tents, or whatever, but the critical point is that, unlike temporary sheltering, household routines must be established (Quarantelli, 1995).

Temporary housing programs are proposed where a large area is damaged, and the government feels that the reconstruction of ordinary houses in terms of management, facilities, and materials could take several years (Kani et al., 2017). In other words, the existential philosophy of temporary housing is that the planners and reconstruction managers could plan with peace of mind and people stay safe from hazards in the temporary shelter (Asefi & Farokh, 2016). Thus, the temporary housing process after a disaster should lead to a product based on the disaster zone, not just to a so-called housing but to provide facilities to the disaster victims. In this process, an infrastructure should be designed to provide shelter for asylum seekers. These shelters should offer accommodations to disaster victims who have returned to their homeland after the crisis.

Article 41 of the universal declaration of human rights state that: "The right to adequate housing is the right of everyone." After a natural disaster, when the social disorder occurs in a specific period, victims are deprived of the right to adequate housing (Omidvar et al., 2007). As a result of delays in housing construction for victims, this right should be given to victims in temporary housing.

Post-disaster temporary housing is considered an easy and, at the same time, challenging issue that, despite the prevailing assumption, has many complexities. The main challenge of "temporary housing" is related to its precise definition. The word "housing" has led to a mere emphasis on providing housing, and the affected's psychological, social, and economic recovery is less addressed. On the other hand, the word "temporary" makes this step inessential, as unlike emergency and permanent housing, it has not been discussed in the system of housing policy-making in the post-disaster (Mesgari Houshyar, 2019).

Today the need for dynamic, balanced, and sustainable development, especially in rural areas, has revealed the necessity of public participation in planning and decision-making more than before. In many cases, participation is considered a fundamental tool; thus, it enables micro-actors to enter the macro decision-making arenas. A promising future will be created if people be eager to participate and allocate their resources to the development of society. Therefore, the government must get people involved in all stages of the proposed projects (Agwu, 2005).

In recent years, extra attention has been paid to the type of building materials used in the construction of temporary shelters, with a strong emphasis on using indigenous materials and recycling. Regarding the advantages and disadvantages of the long-term use of these materials and their effect on ecology, there have been different opinions in both developing and developed countries (Motaki et al., 2019). On the other hand, locals' experiential knowledge is confirmed as a new strategy to reduce people's vulnerability to natural hazards. Several foreign and domestic scholars are trying to identify indigenous methods to tackle risks and prevent or reconstruct the affected areas after natural disasters to reduce people's vulnerability to natural hazards through a combination of formal and modern knowledge (Bouzarjamhari et al., 2018). Localization not only refers to the use of indigenous materials but also to the use of indigenous knowledge in construction and implementation

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methods. Based on the mentioned ideas of the research question, the present study sought to answer this question: considering the affected villagers' need for social-spiritual empowerment, can their participation and the use of indigenous knowledge be effective in accelerating temporary housing during crisis periods?

2. Literature Review

Several definitions have been proposed for identifying indigenous knowledge. Warren (1991) and Flavier (1995) believe that indigenous knowledge is the local knowledge that is unique to a given culture or society and continually influenced by internal creativity and experimentation as well as by contact with external systems. Geertz (1983), in a book entitled "Local knowledge," defines indigenous knowledge as practical knowledge rooted in a particular place. Local knowledge is holistic, contextual, adaptive, and transmitted informally (Kelkar, 2007).

Experiences from the implementation of rural development projects indicate that the technologies applied to them did not last very long; technologies were embedded outside the villages and, in some way, injected into rural communities. The inefficiency of imported technologies is noticeable in the village's economic, social, environmental, and cultural conditions. Thus, to highlight the practical aspects of developing technologies the use of indigenous knowledge should be emphasized. Since this knowledge has local-cultural origins, is compatible with the region's ecology, and is also built over time and through experience, it is understandable to natives. It gives them the freedom of choice owing to its practical application. This type of knowledge is very economical compared to external financing methods. Therefore, the importance of indigenous knowledge and achieving a local origin in rural development is undeniable (Vosoughi & Habibi, 2014). Indigenous knowledge is considered a part of the unique culture of an ecosystem or region, acquired through experience to adapt to the specific environmental conditions of ecosystems.

It gradually becomes a part of the society's productive and social culture; it is suggestive of adapting to the environment and creating a rational relationship between humans and their habitat (Jomehpour, 2005). Some even consider indigenous knowledge as a critical element of wealth and the principal social capital with which to gain control over life (Gorjestani, 2000). Therefore, indigenous knowledge is a small set of methods created and developed over time by the people of a specific society through experience with the surrounding environmental phenomena. As the environmental conditions change, indigenous knowledge also varies and becomes dynamic, thus providing stability for society and the environment (Warren, 1996).

The two advantages of indigenous knowledge over technical are as follows:

1- being freely available. 2- the cost-effectiveness, environmental compatibility, and lower risk of agricultural products (United Nations Environment Program (UNEP), 2013).

The significance of indigenous knowledge is that it enables people sustainably to adapt to the ongoing changes of natural disasters while reducing its effect (Vazin & Eftekhari, 2012). Applicability of indigenous knowledge emphasizes that efforts to gain it are not purely academic work, but it has explicitly begun to solve the problems facing humanity. The dependence and compatibility of indigenous knowledge refer to its geographical origin; to solve a country's development issues, it is necessary to scientifically explore and study the indigenous knowledge of that land (Bouzarjamhari, 2003). As the localization sample of the temporary housing is shown in Table 1, it indicates the basic characteristics of indigenous knowledge as follows: 1- it is based on experience. 2- it is practical and has been based on experimentation for centuries. 3- it is adaptive to the environment and indigenous culture. 4- it is dynamic and constantly evolving.

Table 1. Views of temporary housing localization

| Kapar, made of reed with a nylon cover, Kermanshah | Nomadic herders' temporary accommodation, Galesh | Door, window, and necessary furniture made of reed, Kermanshah | Gerdtoop construction, Chabahar |

Source: Kohansal (2019), Yalda (2019), Mehrabi & Sayadi (2019)

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Temporary housing is defined as providing shelter concerning basic needs, livelihood needs, and psychological comfort to preserve human dignity within a social and family system framework in a problematic condition (Abdolalipour, 2017). The purpose of temporary housing is to make families live together, to have an appropriate level of privacy, and to make use of basic facilities of life, such as food preparation and sanitary facilities. Temporary housing not only includes the construction of it but also includes access to services and facilities. In this stage, the top priorities are maintaining the region's social structure and resuming economic and social activities. It is acknowledged that after disasters, people become homeless and do not just lose their housing. Therefore, specific attention should be paid to the shelter as a space for providing the affected person's peace, security, reassurance, and psychological rehabilitation (Saedi Khamene & Hoseini, 2010). The selection of temporary housing is affected by several factors, including the region's type of climate, location, accessibility, the role of indigenous materials, people skills, and environmental technologies. In the present study, only localization factors of materials, staff, and construction strategies of temporary housing will be discussed.

As mentioned, people skills and environmental technologies are critical factors in the temporary housing model. People skills include familiarity with different construction methods, executive details, etc. If the public participation policy is adopted in the construction of temporary housing, it can significantly influence the localization of temporary housing. Public participation in reconstruction is perceived as a social reality that, over time, disengages the government's mandatory scheme from the reconstruction process and involves the people affected by disasters in the reconstruction process. As a result, the settlements become a proper place for those affected (Sherry, 1996). This issue improves not only the environmental sustainability but also the acceleration process of reconstruction of the affected area and leads to enhanced community participation and victims' general satisfaction (Zonghang & Zhigang, 2007).

Another factor is the environmental technologies, including factories and workshops in the region and surrounding areas. These units can lead to an effective temporary housing model by providing indigenous or industrial materials. For a long time, rural communities and their production activities were threatened by destructive forces of nature due to their close relationship with nature and limited capability. As a result, residents have taken steps to reduce the devastating impacts of destructive forces on communities through past experi-

ences as well as local and indigenous knowledge (Vazin, 2007). The role of indigenous knowledge by rural people in managing natural hazards and disaster risk is that they, especially farmers, have various ways to reduce the devastating impacts of natural hazards and have gradually adapted their livelihoods to the loss and damages. Active participation of villagers in the reconstruction of earthquake-stricken regions is an essential approach to their pricing power. It is a kind of initiative by villagers that allows them to involve in the reconstruction based on their needs (Sharifi et al., 2010).

In the reconstruction of villages, both the architectural and social reconstruction should be done by preserving the main elements of the village so that we do not witness villages losing their architectural identity. The negative impacts of improper use of the allocated internal resources deserve special attention since poor budgetary in the region can cause hyperinflation in that region. During the reconstruction process, the additional burden of the reconstruction programs conducted by the government can possibly reduce the government's performance and efficiency, eventually leading to unsatisfactory reconstruction programs. The consequences of improper use of financial resources are internal financial disruption and many other economic issues affecting the region's victims and posing challenges for reconstruction (Baghvand et al., 2007).

Since each region has particular indigenous materials for housing construction, it can be said that the temporary housing system depends on the capacity and type of indigenous materials. Therefore, appropriate models for temporary housing can be provided by investigating the indigenous and new materials acceptable in the region. Based on the research process, the indicators of design pattern for temporary housing can be offered in Table 2.

Although the literature review of constructing the temporary housing settlements after the crisis dated to the previous five decades, these studies aimed mainly to investigate the technical issues and some others to study the cases of temporary housing processes such as planning, allocation management, location selection, temporary housing design, environmental issues, and dismantling of temporary units. One of the first comprehensive research in this field is the study by disaster experts entitled "Emergency shelter provision, prospects, and cases," which was revealed in 1977 America. This research investigated the role of effective factors in temporary housing. In 1977, Haas published a book entitled "Reconstruction following a disaster," which examined the key issues to consider in temporary housing after the

disaster (Haas, 1977). In 1985, Davis claimed that we have little knowledge about post-disaster housing, and the lack of research about temporary housing settlements is identified as a severe knowledge gap (Davis, 1985). In 1998 a book entitled "Disasters by design" explored the issue of post-disaster temporary housing and its role in sustainable community development (Swatkouhiffer et al., 1998).

Vazin (2007), in a study entitled "Role of indigenous knowledge in reducing the environmental damages to rural areas," state that indigenous knowledge reduces the impacts of natural disasters in rural communities and enhances the disaster prevention process as well as their damage restoration.

Hosseini et al. (2008), in a book entitled "Crisis management," mentioned the impacts of crisis management, especially the impacts of indigenous knowledge in planning and reducing vulnerability.

Bouzarjamhari and Javanshiri (2015) researched "Identifying indigenous knowledge and its application in rural crisis management by emphasizing drought, flood, and earthquake in Zozan district in Khaf province." They found that local people are aware of the amount of precipitation and have built indigenous structures such as

alignments, crescents, soil mounds, long embankments, dispersing floods, platforms, etc., to reduce the damages caused by floods and feeding the groundwater sources.

Azmi et al. (2015), in an article entitled "Situation of domestic knowledge in natural hazards management in villages (Case study: Shizr district, Harsin county)," identified a significant difference between the effectiveness of indigenous and modern knowledge in reducing the vulnerability of disasters. They concluded that the efficiency of indigenous knowledge in managing natural hazards in rural areas was more than that of modern knowledge.

The literature review and experiences show that one of the first choices to provide temporary housing is investigating the vernacular architecture or local patterns of shelters used by local people. It can be a guideline on temporary housing design in terms of architecture design and available materials, in addition to promoting public participation. Yet, regarding the structural and sustainability problems of indigenous housing, it is suggested to make the indigenous alternatives more sustainable and resilient. However, it can be argued that one of the best strategies for designing temporary housing is optimizing local solutions.

Table 2. Indicators of temporary housing design

Description	Indicator
Construction techniques should have earthquake resistance, and the secondary effects of disaster should be physical in terms of resilience.	Construction technology
the use of available materials for the physical design of temporary housing should be the top priority. The second priority should be the available materials of the neighboring provinces. Production capacity also is essential in choosing suitable materials.	Materials
The method of transporting and transferring the shelter to the housing location during the design is of utmost importance.	Transportation
Paying attention to the physical requirement of any climate will determine each region's heating and cooling demands.	Climatic comfort
Moisture enters buildings through rain or ground. Moisture protection and shelter insulation against both sources of wetness to provide comfort are of utmost importance.	Moisture resistance
Attention should be given to the aesthetic features of the shelter's shape and color to promote survivors' mental health and improve environmental conditions.	Aesthetics
Employing local staff before a disaster to enhance livelihood and during a disaster to increase survivors' satisfaction and cut costs and accelerate the implementation process of temporary housing is essential.	Staff
Public participation in the design and implementation of temporary housing, along with the involvement in financing, production, and transportation, leads to an increase in public satisfaction and reduces tensions between the affected population and authorities.	Public participation
Cost and sources of temporary housing funding should be considered in all stages of production, storage, transfer, erection, and dismantling.	Cost
The time factor in the process of production, transfer, erection, and dismantling of the housing to create a favorable condition, ensure public satisfaction, and accelerate the transfer of emergency housing to temporary housing, are of utmost importance.	Time

Source: Research findings, 2022

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3. Methodology

This study, in terms of purpose, is practical, and in terms of methodology, it is descriptive-survey research using structural equation modeling. Data was collected using field and library research. In the library research, dissertations and research articles were reviewed, and a questionnaire was used in the field study. The validity of the questionnaire was confirmed by the CVR index and the confirmatory factor analysis, and the reliability was also confirmed using Cronbach's alpha of 0.89. the study area was the villages of Tarom province were used for their mountainous location and earthquake history. According to the latest population and housing census in 2016, the statistical population was 2435 households, and 381 people were selected as the sample size based on the Cochran formula. Data were analyzed using descriptive and inferential statistics such as one-sample t-test, Kolmogorov-Smirnov test, analytic hierarchy process (AHP), confirmatory factor analysis, LISREL, SPSS, and Expert Choice software.

Tarom county is located in Zanjan province, the capital of which is the city of Abbar. The last administrative division of Tarom county includes the Central and Chavarzaqh districts. Central districts include Abbar, Gilvan, and Darram rural districts, and the Chavarzaqh districts have Chavarzaqh and Dastjerdeh rural districts; their locations are shown in Figure 1. This map was prepared in 2011 by the vice president for strategic planning of the statistical center of Iran.

According to the results of the 2016 census, Tarom county had a population of 46641. 21% of this population lived in cities, and the other 79% lived in rural areas of the county. The location of the villages of Tarom county based on the latest population and housing census in 2016 is shown in Table 3.

4. Findings

In the field method, the questionnaire, completed by the local community, was used as a research tool. Table 4 shows the descriptive findings and individual characteristics of respondents. According to this Table, among the 381 statistical samples, male gender, marital status, and undergraduate degree had the highest frequency. The average age of respondents is between 41-60 years old.
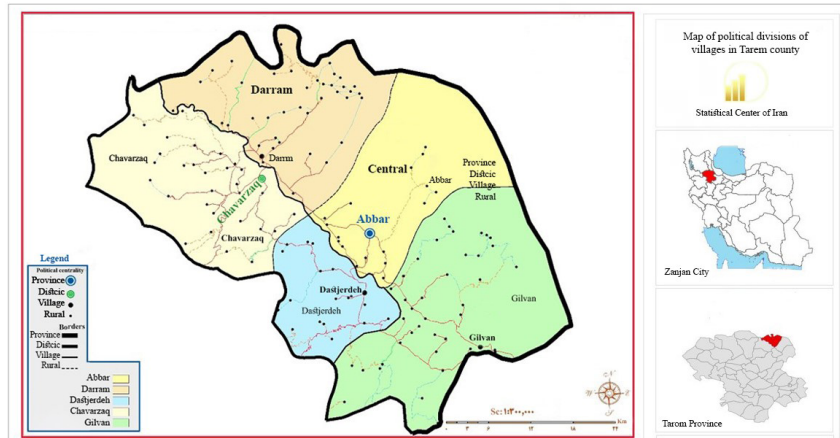

Figure 1. The location of the studied area (Villages of Tarom county)

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Table 3. The natural location of the villages of Tarom county

Mountainous location	Plain location	Total No. of villages		County	District
		Percentage	Number		
27	3	20/1	30	Chavarzaqh	Chavarzaqh
13	6	12/8	19	Dastjerdeh	
9	8	11/4	17	Abbar	Central
36	5	27/5	41	Darram	
32	10	28/2	42	Gilvan	
117	32	100	149	Total	

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Table 4. Individual characteristics of respondents

Percentage	Frequency	Marital status	Percentage	Frequency	Gender
71	271	Married	83/2	317	Male
29	110	Single	16/8	64	Female
Percentage	Frequency	Age range	Percentage	Frequency	Degrees
208	80	Less than 20	55/4	211	Undergraduate
17/	64	21-40	20/2	77	Diploma
47	179	41-60	16/3	62	Associate
15/2	58	Above 60	8/1	31	Bachelor's and higher
Total No. of samples: 381					

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As seen in Table 3, effective indicators for temporary housing design are those gathered in the overviews of the proposed indicators of the previous studies. They can change based on the region's situation, culture, and economic and social indicators. The studied area of the present research is no exception. Therefore, the authors of the present study, after matching the indicators with the current situation of the region and conducting the region's residents survey, crossed out the factors of "technology construction," "transportation," and "aesthetics" because the subject did not cover the studied area. Then other factors were prioritized and surveyed based on the opinion of the village residents using structural equation modeling. Structural equation modeling is a set of statistical techniques used to measure and analyze the relationships between observed and latent variables. This approach allows researchers to test the validity of empirical models using correlation research. The fuzzy analytical hierarchy process method was used to prioritize key indicators of temporary housing. The four basic steps in conducting an AHP analysis for prioritizing the mentioned indicators are as follows:

1- Modeling: In this step, the issue and decision goal are designed in an interrelated hierarchy of decision elements. Decision elements include major and decision-making indicators drawn in the diagram below.

2- Impersonal judgments: comparing decision-making indicators based on the major indicators moreover judging the importance of major indicators by pair comparison. In this part, the AHP method was used. Table 5 shows the paired comparison of the localization indicators of temporary housing.

3- Calculating relative weights: determining decision elements' weights through a series of numeral calculations. The expert choice was used for the paired comparison and weights determination of decision elements.

4- Integration of relative weights in order to rank the decision alternatives. The results of the scores and indicators ranking order of the temporary housing localization are summarized in Table 6.

As seen in the above Table, the indicators of materials, cost, and time with scores of 0.335, 0.182, and 0.127, respectively, prioritize the localization of temporary housing. The indicators of staff, public participation, climatic comfort, moisture resistance, and durability, with scores of 0.102, 0.830, 0.071, and 0.0631, respectively, are the next priorities.

What is the status of localization indicators of temporary housing in villages of Tarom county? To answer this question one-sample t-test was used. The Kolmogorov-Smirnov test was first used to confirm whether the statistical population is normally distributed.

Figure 2. Analytic Hierarchy Process flow diagram

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Table 5. Paired comparison matrix of the localization indicators of temporary housing

Time	Cost	Public partici-pation	Staff	Moisture resistance and durability	Climatic comfort	Materials	Indicators
6/6	5/3	4/2	3/1	2/4	1/5	1	Materials (M)
3/2	2/9	2/1	1/8	1/3	1	0/67	Cost (c)
2/16	1/83	1/59	1/27	1	0/77	0/42	Time (T)
1/72	1/37	1/15	1	0/79	0/56	0/32	Staff (S)
1/25	1/14	1	0/87	0/63	0/48	0/23	Public participation (PP)
1/11	1	0/88	0/73	0/55	0/34	0/19	Climatic comfort (CC)
1	0/90	0/80	0/58	0/46	0/31	0/15	Moisture resistance and durability (MDR)

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Table 6. Score and rank order of the localization indicators of temporary housing

Index ranking graph	Rank	Score	Indicators
M .335 — C .182 — T .127 — S .102 — PP .083 — CC .071 — MDR .063 — Inconsistency= 0.00209 With 0 missing judgments,	1	0/335	Materials (M)
	2	0/182	Cost (c)
	3	0/127	Time (T)
	4	0/102	Staff (S)
	5	0/083	Public participation (PP)
	6	0/071	Climatic comfort (CC)
	7	0/063	Moisture resistance and durability (MDR)

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Table 7 shows the one-sample t-test localization indicators of temporary housing. According to this Table and considering the normal distribution of data, factor analysis can be used to categorize indicators. Thus, Bartlett's test was used, and the measure of sampling adequacy KMO was 0.763. since the KMO value is higher than 0.7 and the significance level for Bartlett's test is below 0.05 (sig<0.05), the data is well suited to perform factor analysis.

Structural equation modeling was used in Lisrel software for the localization model of temporary housing. The results of the relevant Structural equation modeling can be seen in Figure 3. The diagram indicates that factor loading range from -1 to 1 and describes the relationships between different variables. The acceptable factor loading is defined as 0.3. In the above diagram, All the questions have factor loadings (coefficient) of more than 0.3 which are considered good values. Moreover, the t-value is greater than 1.96, indicating that all the path coefficients are significant at 0.05.

Table 7. One-sample t-test of localization indicators of temporary housing

Test Value=3						Indicators
Upper	Lower	Mean difference	Significance level	df	t	
0/994	0/840	0/917	0/000	381	23/3	Materials (M)
1/11	0/986	1/04	0/000	381	33/6	Cost (c)
1/12	0/956	1/03	0/000	381	25/1	Time (T)
0/949	0/789	0/869	0/000	381	21/4	Staff (S)
1/04	0/819	0/965	0/000	381	25/3	Public participation (PP)
1/08	0/914	0/998	0/000	381	23/3	Climatic comfort (CC)
0/289	0/845	0/914	0/000	381	26/2	Moisture resistance and durability (MDR)

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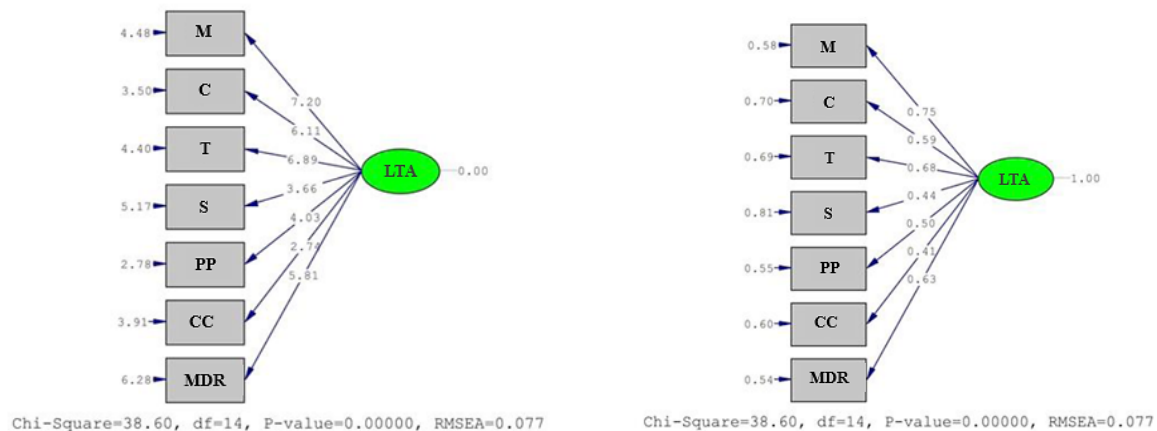
Figure 3. Standardized coefficients of a structural equation model

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Two fit indexes (RMSEA) (CMIN/DFx2/df) model is shown in Table 8. The CMIN/DFx/df value is 2.76. The CMIN/DFx2/df value less than 3, the better the model fits the data. The Root Mean Square Error of Approximation (RMSEA) index is 0.770. this index is based on error models. RMSEA values less than 0.08 are acceptable, and values lower than 0.05 are good, showing a relatively good fit.

5. Discussion

Since one of the best strategies to accelerate temporary housing is identifying and optimizing indigenous solutions, employing forces, and using indigenous materials, the present study attempts to identify and prioritize the key indicators in the localization of temporary housing in times of an earthquake in the villages of Tarom county. Seven out of ten indicators extracted from theoretical foundations and previous studies were selected as the research indicators in this research. The indicators, including materials, cost, time, staff, public participation, climatic comfort, and moisture resistance and durability, were prioritized based on the opinion of village residents using structural equation modeling.

The findings of this study indicate that from the point of view of the statistical population, the indicators of ma-

terials, cost, and time are the first top three priorities of village residents in the localization process of temporary housing. From their point of view, the use of skilled labor and indigenous knowledge, while saving the time and cost of temporary housing, increases the participation of village residents in the temporary housing process. Due to the high morale of villagers in collective participation, this characteristic is intensified in crisis situations, and villagers' desire to participate in temporary housing increases in all kinds of participation. Using their indigenous knowledge and experiences gained during their lifetime in the village, they can speed up the temporary housing process with their experimental construction techniques. The findings of the study are in line with the results of Hosseini et al. (2007), Azmi et al. (2015), and Bouzarjamhari and Javanshiri (2015), all of which have emphasized the effectiveness of indigenous and modern knowledge in reducing the vulnerability of disasters and confirmed the acceptance of villagers on collective participation for temporary housing. Moreover, in the present study, attention has been paid to the local conditions of the region, the use of indigenous materials and the construction method, and employing the region's expert staff to select adequate housing for the affected.

Table 8. The results of evaluating the goodness of fit in the structural model of the localization indicators of temporary housing

IFI	NNFI	NFI	AGFI	GFI	RMSEA	SRMR	CMIN/DF	The goodness of Fit Index (GFI)
0/9>	0/9>	0/9>	0/9>	0/9>	0/08<	0/05 <	3<	Acceptable values
0/94	0/92	0/96	0/93	0/91	0/077	0/000	2/76	Measured values

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The research findings suggest that to succeed in accelerating temporary housing in crises, the authorities, planners, and crisis managers should identify, preserve, and remain the priority of the region's capabilities. Furthermore, the researchers interested in this field can investigate the cases of earthquake-prone zones and the conditions and methods for the localization of temporary housing to provide feedback for authorities to make necessary arrangements.

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Conflict of Interest

The authors declared no conflicts of interest.

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