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Community Participation: The Lost Link of the Rural Informal Settlements Relocation Projects, Kerman Province, Iran

(Case Studies: Band-Chah-Reza Village, Chah-Dad-Khoda Village, Ghassem-Abad Village and Shahid-Karami-Shadab Village)

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ABSTRACT: Although in most of the rural development plans, relocation of informal settlements is often considered as an efficient solution to increase safety of rural communities against natural and man-made disasters, such as, earthquakes, fire hazards, floods, etc. an evaluation of recent experiences in the relocation projects show that the relocated community is often unsatisfied with the new residential areas. In most cases, the new residential areas are advantageous in compare to the informal settlements in terms of utility infrastructures and architecture design but the public remain reluctant to migrate to the new place. This paper, tries to evaluate the role of Community participation in the process of informal settlements relocation projects in Kerman province, an Iranian south-eastern state, by measuring people's evaluation of their own participation in the process of decision-making during five key relocation phases, namely, choice of new location, methods of relocation, architectural design of the new areas, construction procedures and supervision on the whole project. Questionnaire survey was employed to gather these data and was followed by statistical analysis (by SPSS software) in order to approve meaningful relationships. The results showed that lack of community participation had been responsible for a number of uninhabited settlement projects and some unfinished construction projects during the whole relocation process.

Keywords: *Community Participation, Informal Settlements, Kerman Province .Relocation, Rural Development.*

INTRODUCTION

Natural disasters are among the biggest threats faced by big cities across the globe. Iranian plateau is situated on a high risk part of the globe and is thus inexorably threatened by environmental crises and natural catastrophe (Imani et al., 2013).

A review of the literature shows that there has been plenty of research works in the context of community participation, its definitions, theories and analytical methods. In most of these methods people are usually considered as the main role players particularly those involved in reconstruction projects. Community participation has been especially a hot topic in the relocation of informal settlement areas, as a strategic policy in social, economic and structural development of rural settlements and is an inseparable part of urban and rural development concepts.

The current literature in post disaster reconstruction advocates high levels of community involvement to achieve best value recovery outcomes (Lawther, 2009).

As Fallahi et al. (2006) declared In Iran, a middle-eastern developing country, most of the reconstruction projects being handled by the government have not been successful before the Manjil Earthquake where following public opinion and community participation was not a major policy by the government decision-makers and planners. This was later figured out by the reconstruction authorities themselves that even a series of well-designed reconstructed areas were left uninhabited for several years as a result of general dissatisfaction of the target community. Even today, in spite of having numerous reconstruction experiences in Manjil, Bam, Zarand and Lorestan, many of the relocated rural areas and villages are transformed into modern urban-style small settlements, which do not comply with the cultural, social and economic mechanisms of the original villages. This has mostly led to the separation of the village context and in some cases the villagers had immigrated to other places.

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As it is conferred from the past experiences, a high level of community participation contributes to a successful reconstruction planning (Aysan & Davis, 1993). In contrast, wherever the government authorities were not considering the public interference in the process of informal settlements' relocation, the formation of new villages was not efficient, in terms of wasting large amounts of budget in a series of projects, by which people were dissatisfied.

The World Bank (World Bank, 1994) indicates that considering people insights, needs and values, namely people participation, in site selection and planning can reduce the risk of relocation. It remarks that relocation is more likely to be successful by community participation in housing designs and their implementation. Also according to Barakat (2003) community participation in construction phase can restore a sense of pride and well-being in affected people. So this paper attempts to evaluate the effectiveness of community participation in the relocation of rural settlements by measuring people's evaluation of their own participation in the process of decision-making during five key relocation phases, namely, choice of location, methods of relocation, architectural design of the new areas, construction procedures and supervision on the whole project. A mathematical model to support relocation decisions in an overlapping disaster situation was developed. This model, which is based on penalty costs for un satisfied demand and incorporates future uncertainties, can be solved with the rolling horizon solution approach suggested in this work (Rottkemper et al., 2011).

MATERIALS AND METHODS

This research consists of two stages. The first stage is based on the document and historical data research having a descriptive and comparison approach. It aims at building a conceptual framework for the evaluation of the major contributors to the community participation in order to design semi-structured questionnaires. The second stage is based on statistical analysis on the data taken from a set of semi-structured questionnaires, which was built through the first stage.

RESULTS AND DISCUSSION

Community Participation

Even in less Developed countries, neglecting public opinion and their preferences may bring about economic, social, political and even cultural troubles and conflicts, which would double the adverse circumstances of an informal settlement area. Furthermore, underestimating the intensive potential of participatory urban development could be counted for a great loss of resources to both the decision-makers and the target communities.

As described in (Gamper & Turcanu, 2007; Gamper& Turcanu, 2009) misallocating budgets, not in line with the public preferences, and the consequent inefficiencies of the reconstruction projects, could lead to a failure in economy of the reconstruction. Parallel to the economy, not following the public desires and needs may result in social conflicts and affect the public acceptance of even well-designed and perfectly implemented reconstruction projects (De Marchi& Ravetz, 2001; Messner et al., 2006).

Political issues, especially in crisis-prone communities, should be taken into account carefully along with the public perceptions about the services they expect to receive (Buchanan, 1987; Frey & Kirchgässner, 1993).

Although a review of the literature shows plenty of researches being dedicated to investigation of the nature of participatory management, only a few recent works have focused on characterizing its' contributors.

In this paper, it is tried to tackle these issues through quantitative analysis based on the data taken from a questionnaires being filled by a number of 150 family representatives in Kerman rural informal settlement areas.

Statistical Population

There are 16 residential areas and villages consisting of 538 reconstructed dwellings in southern Kerman. According to the Cochran formula (Cochran, 1977), a number of 150 dwelling owners were randomly (simple random selection) chosen to participate in the questionnaire survey. All the 150 cases were selected from the 4 informal settlement areas (Band-Chah-Reza, Chah-Dad-Khoda, Ghassem-Abad, Shahid-Karami-Shadab). The segmentation of the randomly selected samples is illustrated in Table 1.

The level evaluation of the participants in each question was ranked employing the Likert Scale (Likert, 1932). According to Likert, the participants had to choose between five different evaluation levels form very low to very high. Each choice is marked as following: 1-Very high (5 Marks) 2-High (4 Marks) 3-Moderate (3 Marks) 4-Low (2 Marks) 5-Very Low (1 Mark). The 5 Level Likert Evaluation Scale was used in all analytical

Table 1: The segmentation of the randomly selected samples from the four settlements

Village name	Shahid-Karami-Shadab	Ghassem-Abad	Chah-Dadkhoda	Band-Chah-Reza	SUM
No. of Samples	19	52	42	37	150
Percentile	12	35	28	25	100

procedures.

In order to evaluate the reliability and consistency of the evaluation factors of the questionnaire survey, The Cronbach Alpha was calculated as 0.84 which is confidently in between the acceptable criteria (Cronbach &Shavelson, 2004).

In this paper, all the data taken from the questionnaire survey were then analyzed by the SPSS software (ver. 16). As for the statistical analysis, the result data were analyzed by T-test and the correlation of the variables were evaluated by the Pearson Correlation Coefficient. The Friedman Test is also used (by SPSS) to rank the variables by detecting the differences in treatments across multiple test attempts. The procedure involves ranking each row of variables together, then considering the values of ranks by columns (Friedman, 1940).

The Iranian Reconstruction Policies for Upgrading the Informal Settlements

Assessment of the social questions, collective behavior, needs and requirements of the affected people in the planning stage. Use the power of social networks and relations among local people, at the stage of implementation. Thus, concentration on the place and local community will make the experience of reconstruction unique, in each place. Above conclusion that is resulted from grounded theory shows the important role of social issues in the post disaster situation. Therefore, the prerequisites of any planning in post disaster reconstruction is assessment and getting acquainted with the peculiarities of the local community .The next step is trying to choose suitable solutions, according to social and cultural conditions in damaged area (Navidi &Andalib, 2013).

As shown in Fig. 1, the reconstruction programs in informal settlements in Iran follows four major policies by the reconstruction authorities, namely, in-site reconstruction, elimination, continuous development and relocation.

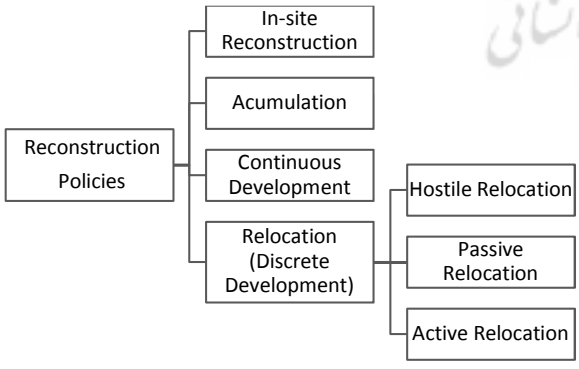

Fig. 1: Reconstruction policies in Iran for upgrading the informal settlements

Generally, the relocation of formal and informal settlements is possible through two different approaches: physical relocation and economic relocation. Physical relocation is defined as the actual relocation of the population by leaving the original resettlement, which usually leads to a poor or lack of access of the community to their productive properties and capitals. In contrast, the economic relocation simply prevents the community from accessing to their productive properties and capitals without an actual physical relocation. The World Bank recognizes the relocation action by the following definition:

"The relocation is defined as a set of required actions to resettle a community in a new place and to unify with the existing societies in a way that an opportunity is given to the community to be able to restore its' physical strength and to achieve economic independence and sustainability within the shortest possible time period." (World Bank, 1994).

In Table 2, a history of relocation and reconstruction of informal settlements is shown according to the statistical data in the IRBM[1]. Since 1979, a number of 546 rural residential arias have been relocated and 20930 residential dwellings had been constructed.

Table 2: History of informal settle

by Relocation Reason		by Number of Residential Areas	
Man-made Disasters	Natural Disasters	Relocation in Progress	Relocated
106	448	146	554

ments relocation since 1979 in Iran

As it is illustrated in the above table, almost 80% of the relocation and/or reconstruction projects were done in the wake of or to prevent from natural disasters. In the case of natural disasters, relocation is often perceived to be a good choice to reduce the risk of exposure to disasters such as earthquake, floods, landslides (Jha et al., 2010).

In order to draw a conceptual framework to evaluate the level of community participation in reconstruction projects, five main initial assumptions were considered as following:

There is a meaningful relationship between community participation in the decision-making process of relocation and their decision to choose to move in to the reconstructed areas (the new place).

There is a meaningful relationship between community participation in the process of locating a new place for resettlement and their decision to choose to move in to the reconstructed areas (the new place).

There is a meaningful relationship between community participation in the architectural design process of the target place for reconstruction and their decision to choose to move in to the reconstructed areas (the new place).

There is a meaningful relationship between community

participation in the executive tasks and their decision to choose to move in to the reconstructed areas (the new place).
There is a meaningful relationship between community participation in the evaluation and supervision on the reconstruction process of the target place and their decision to choose to move in to the reconstructed areas (the new place).

The Informal Settlements of Kerman Province

As shown in Table 3, four provincial areas were selected as study areas according to the number of vacant constructed dwellings.
Table 3, includes various information about the four relocated settlements in Kerman province. The distance between the new place and the original settlement, number of constructed dwellings, number of occupied dwellings, number of vacant dwellings, vacancy rate, the habitats job title, the availability of the infrastructural & utility services and images of the original and the relocated settlements are illustrated in this table.
The relocation purpose for all four settlements was to upgrade the living situation of the community to increase the resiliency of the region against disasters. It is obvious that every informal settlement is typically known by its poor building materials, poor access roads and architecture and several other characteristics, which is added to the community's vulnerability. The vacancy rate is significant in most of the relocated settlements, in spite of their appropriate level of infrastructural utility services such as electricity and potable water supply and much better construction materials and architecture design. The images are also very illustrative about the adverse situation of the informal settlements (slum houses) and their comparison to the new residential area.
As shown in Table 4, the typical residential units in the study area were slums made of reeds and whickers which were transformed into the shape of 43 sq. Meter steel and concrete frame dwellings.

Table 3: Relocated villages in the Kerman province[2]

Village Name	Band-Chah-Reza	Chah-Dad-Khoda	Ghassem-Abad	Shahid-Karami-Shadab
Province Name	Ghaleh-Ganj	Ghaleh-Ganj	Roudbar	Kahnouj
Reconstruction Start Date	1996	2003	2000	1999
Relocation Purpose	Upgrading the informal settlements	Upgrading the informal settlements	Upgrading the informal settlements	Upgrading the informal settlements
Distance of the new place to the original Village	700 Meters	1 Kilometer	3 Kilometers	4 Kilometers
Number of Constructed Dwellings	109	124	158	57
Number of Occupied Dwellings	70	0	58	0
Number of Vacant Dwellings	39	124	100	57
Vacancy rate	36%	100%	63%	100%
The habitats Job title	Farmer	Worker	Farmer	Farmer
The availability of Infrastructural utilities in the relocated Village	Electricity and Water	Electricity and Water	Electricity and Water	Electricity and Water
Image of the Original settlement				
Image of the Relocated Village				

Table 4: Before and after, relocation housing situation

Before Relocation	After Relocation	
		
Slum House made Reeds and Wickers	Steel Frame with Screw/Nut Joints	Concrete Structure with Load-Bearing walls

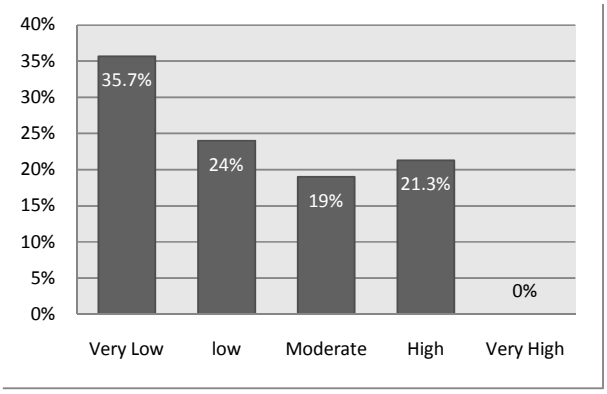

Fig. 3: Community participation in decision making process

DISCUSSION

According to the questionnaire survey, the following tables and graphs illustrate the statistical distribution of the answers of the participants to the five questions. Participants, including a number of 150 randomly selected residents (each representing one family) of the informal settlement area were asked to evaluate their level of participation in the five different project stages.

As shown in Fig. 2, over 60 percent of the participants evaluated their participation in the process of locating a new place for resettlement as very low and low. Almost the same level of poor participation is evaluated for participation in the construction process, decision making process and project progress surveillance. As shown in Fig. 4, participants were remarkably dissatisfied with their participation in the process of choosing an architecture design for their future housing unit. This was not surprising as the budget constraints did not allow for fancy architecture designs. On the other hand, the highest evaluation for participation, in compare to other processes, is observed in the process of locating a new place for settlement (Fig. 2-6).

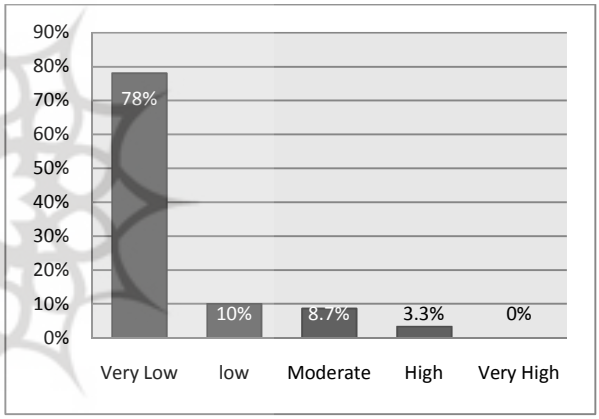

Fig. 4: Community participation in the process of architectural design of the new place

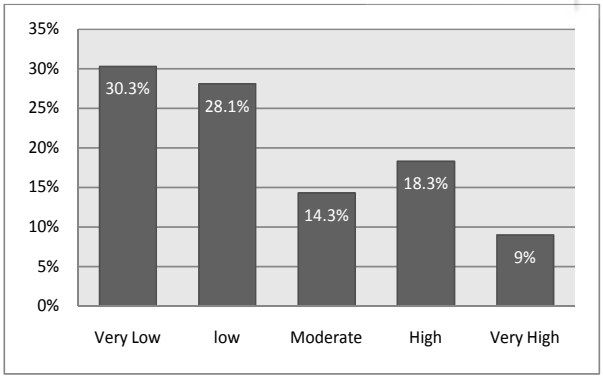

Fig. 2: Community participation in the process of site selection

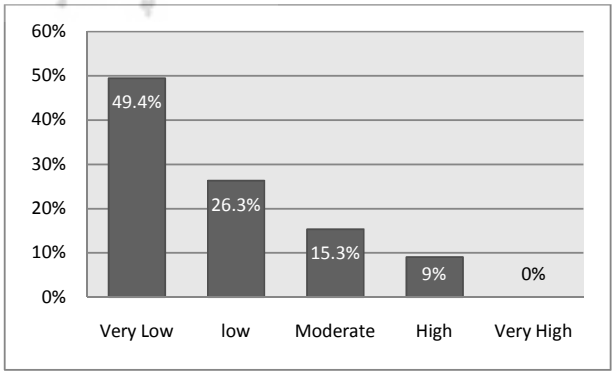

Fig. 5: Community participation in the reconstruction process

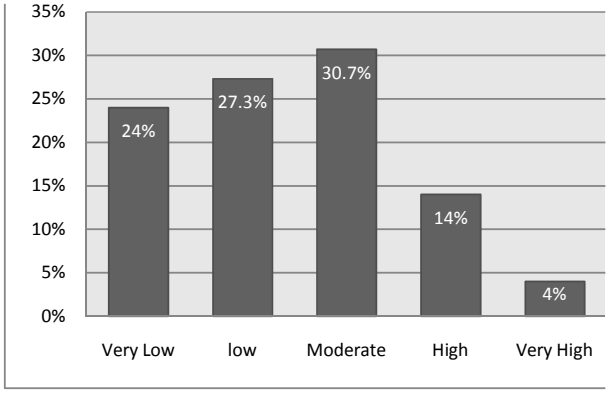

Fig. 6: Community participation in the project progress surveillance

Table 5 shows a sample of the questionnaire survey results which were later transformed into the illustrative graphs.
After the primary evaluation of the questionnaire survey results, our previous assumptions were evaluated by t-Test. Before that, Kolmograph - Smirnov Test was employed to check the data's Normality. According to the statistical analysis results shown in Table 6, the initial assumptions are approved and it is conceivable that poor community participation in decision making, construction and surveillance processes could be counted for numerous vacant constructed dwellings.
There was also a meaningful relationship between the distance of the original settlement location to the new project location and the level of utility services, such as water supply, electricity, road access, etc provided for the constructed settlement with the number of vacant dwellings. This relationship is described by the Pierson Correlation Coefficient as following:
There is a direct relationship between the distances of the original settlement location to the new project with the number of vacant dwellings is approved by the Pierson Correlation Coefficient which is calculated as 0.61. There is an inverse relationship between the level of utility services, such as water supply, electricity, road access, etc provided for the constructed settlement with the number of vacant dwellings is approved by the Pierson Correlation Coefficient which is calculated as -0.55.
Table 7 shows the ranking of the variables considering their influence on the relocation of the residents using the Friedman Test. According to Table 7, participation in the decision making process of relocation has the most influence on the community's decision to choose to live in the newly provided housing.

Table 5: A sample of the questionnaire survey results

Site Selection	Very Low	Low	Moderate	High	Very High	SUM
Group	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
Band-Chah-Reza	11 (30)	10 (26)	5 (14)	8 (22)	3 (8)	37 (100)
ChahKhodada	8 (19)	20 (47)	9 (22)	5 (12)	0 (0)	42 (100)
Shahid-Karami-Shadab	6 (12)	13 (25)	11 (21)	14 (27)	8 (15)	52 (100)
Ghassem-Abad	5 (26)	3 (16)	2 (11)	4 (21)	5 (26)	19 (100)

Table 6: Statistical data analysis

Variable	T-Test	Level for Sensibility	Correlation Coefficient	Test Result
Decision Making	30.498	00.00	0.85	Approved
Site Selection	29.435	00.00	0.83	Approved
Architectural Design	29.659	00.01	0.66	Approved
Construction	30.940	00.01	0.84	Approved
Supervision	28.593	00.001	0.78	Approved

Table 7: Friedman Test Ranking results

Variable	No. Observations	Ave. Ranking	Rank
Decision Making	150	3.94	1
Site Selection	150	3.54	2
Architectural Design	150	3.34	3
Construction	150	2.17	4
Supervision	150	2.01	5

CONCLUSION

The satisfaction of the informal settlement residents with the newly constructed residential areas and their sense of possession to new place is generated by several contributors such as the compatibility of the location and physical characteristics of the new place with the people's needs and trends.

In recent approaches, community participation is considered as an inseparable part of reconstruction and relocation projects in the informal settlement areas particularly in disaster-struck regions. It was conceived from this research that community participation and participatory reconstruction management in the process of the Informal settlements' relocation needs the population to voluntarily take part in the process of reconstruction and interfere directly in the decision making, planning, executive tasks, evaluation and surveillance phases.

This research defines the term "Community Participation" as a process based on public wisdom and domestic knowledge which is a voluntarily and willful action that is defined by the community taking part in decision making, planning, executive tasks, evaluation and surveillance phases in order to improve effectiveness of the development process.

This research, aiming at understanding the relationship between the community participation with the community's level of satisfaction with the new place, expects meaningful relationships between the residents of the informal settlement area satisfaction and their level of participation in decision making, locating, design construction and supervision on the resettlement program according to the new place.

It was also conceived that the distance between the old and the new place had a direct relationship with the number of empty dwellings in the new place and this number had an inverse relationship with the level of utility services (Electricity power, potable water, etc.) provided in the new place.

ENDNOTES

1. Intermediate Range Ballistic Missile
2. An Iranian South-eastern state

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