



RESEARCH ARTICLE

IMPLICATION OF EARTHQUAKE ON RURAL LIVELIHOOD & MIGRATION OF AFFECTED  
INHABITANTS OF DISTRICT ZIARAT-BALOCHISTAN, PAKISTAN

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ABSTRACT

Natural disasters are expected to be occurred everywhere throughout the globe such as Land Sliding, Erosion, Drought, Flood and Earthquakes. The CRED data base on disasters indicates that both the frequency and impacts of natural disasters around the globe are on rise. Similarly, earthquake in Ziarat severely affected the rural livelihoods of the local inhabitants. Dealing with certain natural disasters accurately and tactfully, is the real challenge for the relevant custodian of the sector concerned. The prime objective of the study was to analyze the impacts of the Ziarat earthquake on rural livelihood and migration of the affected households. 75 households were selected purposively who migrated after the earthquake from the affected union councils of Ziarat to Quetta district. The results revealed that 50 % of respondents with 45 frequency lost their house infrastructure as the earthquake hit the area, 40 % respondents with 36 frequency were with view that earthquake affected their means of livelihood, 8 % respondent reported that the earthquake effects were on their family as loss of lives with the 7 frequency and 2 % highlighted other effects of earthquake on their families. 41 respondents were with opinion that earthquake affected their livelihood as great loss with 37 frequency. 35.5 % with 32 frequency were reported that earthquake affected their livelihood were less and 23.5 % respondents with 21 frequency declared moderate effect on their means of livelihood. Psychological effects of earthquake on family members of respondents of the area concerned showed that 51 % respondents shared that there was still psychological effects of earthquake on their family members and 49 % respondents were with views that now there were no psychological effects of earthquake on their family members. Results in relation to migration from earthquake affected union councils of district Ziarat as fear of earthquake on family members showed that 57 % of respondents said that yes there was fear of earthquake on their family members and 43 % respondents replied that the fear of earthquake on their family members was normal.

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INTRODUCTION

Today, the world is facing disasters on an unprecedented scale: more than 255 million people were affected by natural disasters globally each year, on average, between 1994 and 2003, with a range of 68 million to 618 million. During the same period, these disasters claimed an average of 58,000 lives annually, with a range of 10,000 to 123,000. In the year 2003, 1 in 25 people worldwide were affected by natural disasters. During the last decade disasters caused damage of an estimated US\$67 billion per year on average, with a maximum of US\$ 230 billion and a minimum of US\$ 28 billion.

The economic cost associated with natural disasters has increased 14-fold since the 1950s (Guha-sapir Hargitt and Hoyois, 2004). At the same time the number of people affected by natural disasters around the world is rising. Over the past two years, 700 natural disasters were registered worldwide affecting more than 450 million people. Damages have risen from an estimated US\$20 billion on average per year in the 1990s to about US\$100 billion per year during 2000–10. This upward trend is expected to continue as a result of the rising concentration of people living in areas more exposed to natural disasters, and climate change (Nicole et al., 2012). Permanent and temporary migration is one of the conventional responses from natural disaster affected people (Smith 2006). Migration is a managing approach undertaken by some households in the

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face of both natural and technological hazards (Moro Jones 1999). Historically drought and desertification have been major drivers of population movement in the Sahel Ethiopia, Argentina, Brazil, Syria and Iran (colletemortreux, John Barnett 2008). Now it is recognized that the underdeveloped communities will be more vulnerable than developed. The natural disaster itself is not generating risk, it is state or human development that forms vulnerability to natural hazards and aggravates their effects and magnitudes (International Organization for Migration-IOM, 2007).

District Ziarat of Balochistan Pakistan was shaken by earthquake October 29, 2008, the magnitude was 6.4, followed by another lower magnitude 6.3 earthquake after 12 hours of the first shock, 250 people died, 1500 were injured and about 120,000 were homeless. A village name Waam was completely destroyed, Tehsil Kareza at of district Pish in was second most affected area (PDMA, Zahid Rafi *et al.*, 2011). Hundreds of households from the district Ziarat migrated from their homes to urban areas especially migrated to provincial capital Quetta. Keeping the importance of the issue, the research study was conducted to explore the impacts of earthquake on people's livelihood and migration from Ziarat district to different part of the province especially to Quetta.

## MATERIALS AND METHODS

The research study on implication of earthquake on rural livelihood and migration of affected inhabitants of Ziarat, Balochistan-Pakistan was conducted in three earthquake affected union councils of District Ziarat. Both primary and secondary sources of data was utilized in this research study. The research was exploratory in nature to explore the impacts of the earthquake on people's livelihood and migration. A large number of books, newspaper articles, magazines and web pages, government documents were reviewed to understand macro dimension of the issues and ripple effects of those historical events that have shaped situation as of today. This material was analyzed to draw international, national, and regional context of the issue. Learning from literature review was also helped to understand the issue, developing questionnaire for primary data collection and designing focus group discussions. The Primary data was collected through survey conducted from 75 migrated households 25 households from each effected union councils, these 25 households were identified where they are living now.

The primary data includes questionnaire survey and focused group discussion. After getting the result of analyzed data three focus group discussions were conducted to share the results Participants of focus group discussions belong to various walk of life including farmers, government officials, experts and they have respected names in their respective professions. The views of participants of focus group discussions were also considered in research finding to enrich the results and discussion. Data analysis was performed using SPSS software version 13. Descriptive statistics such as means for continuous and proportion for categorical variables were calculated to check for missing information and the distribution of key indicators.

## Sample Size

75 households were selected using purposive sampling technique from 3 affected union councils of Ziarat who migrated to district Quetta. Data was collected during the household visits in different settlements of Quetta City where these migrated households were living at the moment, the house hold numbers from each union council were 25 households and these households were randomly selected for the research study, the selected household head was interviewed through developed questionnaire.

## RESULTS AND DISCUSSION

The effects of earthquake on rural livelihood of the local inhabitants of district Ziarat are presented in the tabulated form, It is evident from the results as shown in Table-1 that migration in relation to the effects of earthquake on family members 50 % of respondents with 45 frequency loosed their house infrastructure as effect of earthquake in their area, 40 % respondents with 36 frequency were with opinion that earthquake effected their means of livelihood, 8 % respondent with 7 frequency reported that earthquake effects were on their family and 2 % with 2 frequency highlighted other effects of earthquake on their families. These results are in conformity with Aslan Zorlu, 2012 & Gleditsch, *et al.*, 2007. The possible reason for certain effects of earthquake on rural livelihood of district Ziarat could be the vanishing of flora & fauna due to earthquake. As the main stay of the rural livelihood is on flora & fauna of the area & the same sectors were most affected because of earthquake concerned. Therefore as a result, the rural livelihood was the most venerable effected sector in district Ziarat.

**Table 1. Effects of Earthquake on Families**

Impacts	Percentage	Frequency
Loss of infrastructure	50 %	45
Loss of livelihood	40 %	36
Loss of lives	8 %	7
Other	2 %	2
Total	100 %	90

Sources: Primary data 2015

It is evident from the results that the impact of migration due to earthquake on rural livelihood was very significant as shown in Table-2. 41 % respondents having 37 frequency were with the opinion that earthquake effected their livelihood as great loss. 35.5 % with the frequency of 32 were reported that earthquake effects on their livelihood were less and 23.5 % respondents with the frequency of 21 declared moderate effect on their means of livelihood. These lines are in agreement with *Anthony, O, S. 2006*. The plausible reason for this change of effects on rural lives could be the displacement of local inhabitants along with their flora & fauna which is the main stay of their livelihood. While as they local inhabitants were engaged and busy in their routine interventions within the orbit but due to migration form the native areas suffered & effect everything at once and the routine interventions were disturbed very badly. Therefore, their main source of economy was disturbed due to certain migration which resulted a great loss to their lives.

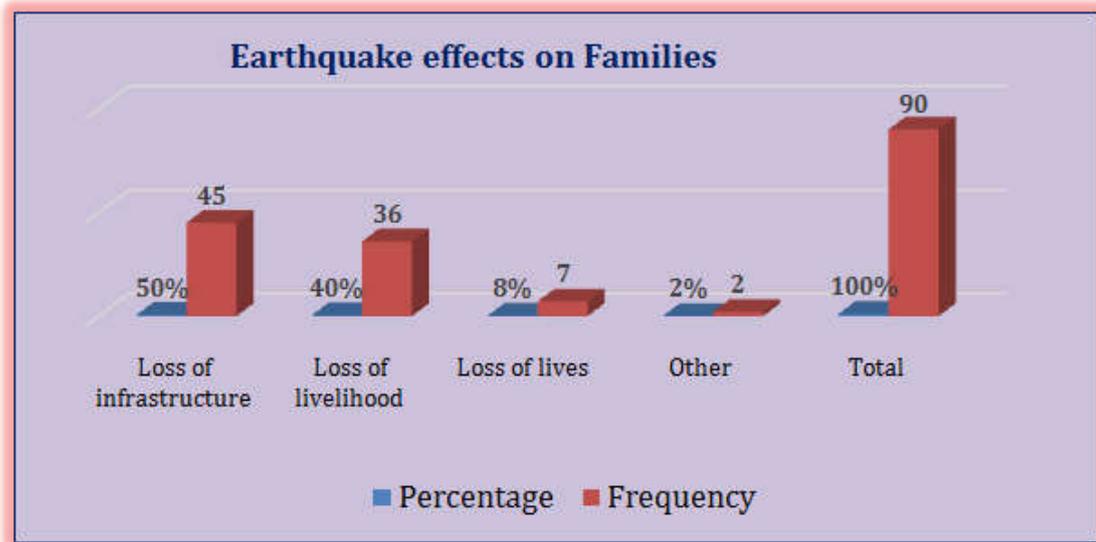


Figure 1.

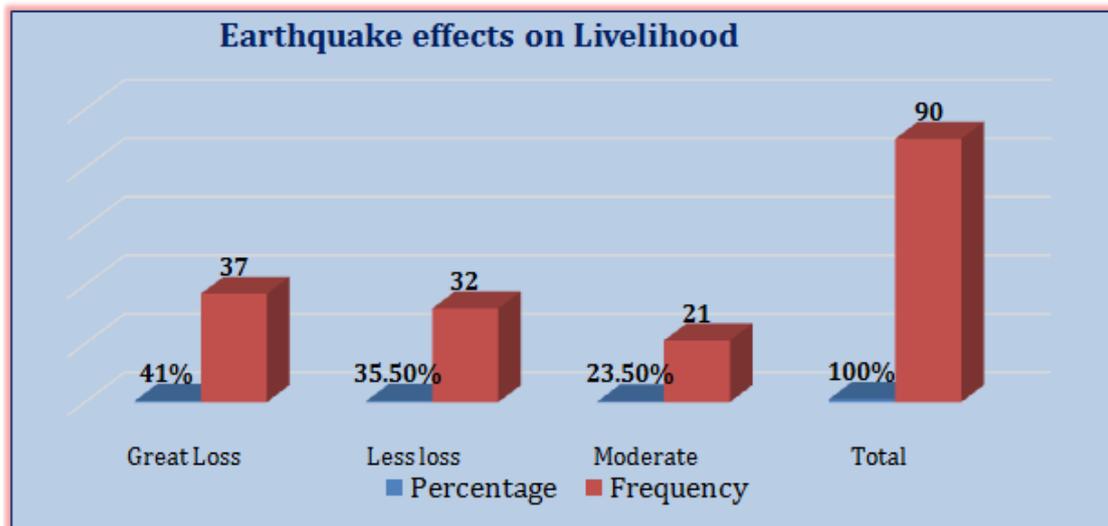


Figure 2.

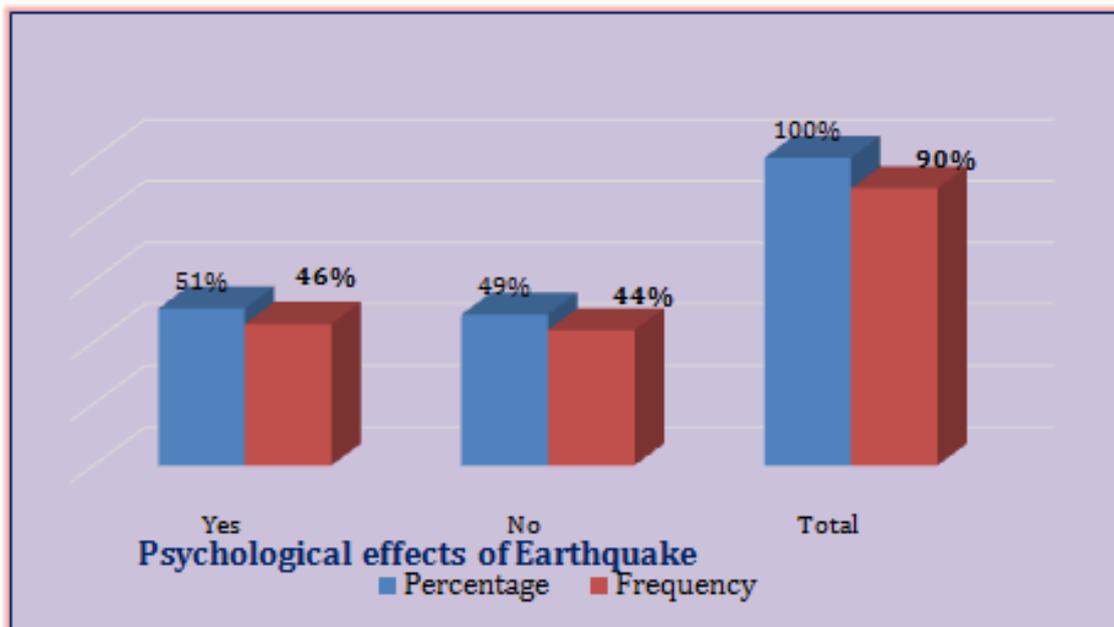


Figure 3.

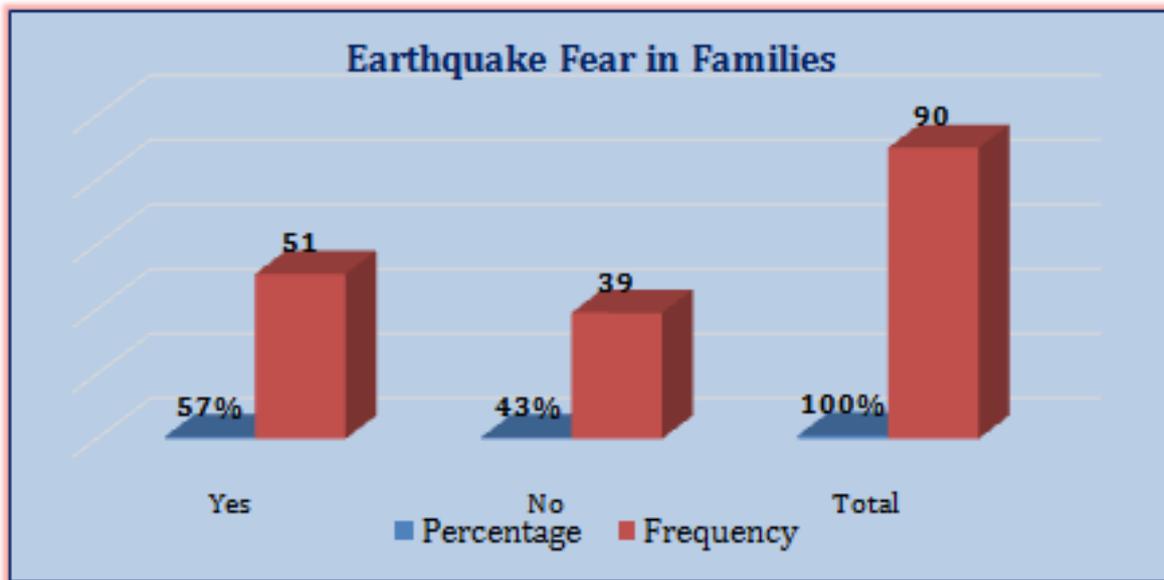


Figure 4.

Table 2. Impacts of Earthquake on livelihood

Impact	Percentage	Frequency
Great Loss	41 %	37
Less loss	35.5 %	32
Moderate	23.5 %	21
Total	100 %	90

Source: Primary data 2015

The physiological impacts of migration on rural livelihood of the local inhabitants of district Ziarat are reflected in Ttable 3. The results revealed that migration in relation to earthquake significantly affected physiologically family members of respondents. Statistical analyses of the data showed that 51 % respondents with 46 frequency shared that there was still psychological effects of earthquake on their family members and 49 % respondents with 44 frequency were on view that now there were no psychological effects of earthquake on their family members. These results are in agreement with Zahid Rafi, 2009 & Rafael Reuveny, 2009. More possibly it could be the reason that physiologically the family members were shocked during the earthquake when and where occurred could cause several casualties of the relatives and other family members within the respective areas. Certain casualties may effect physiologically some inhabitants of the areas concerned.

Table 3. Psychological impacts of the Earthquake

Impact	Percentage	Frequency
Yes	51 %	46 %
No	49 %	44 %
Total	100 %	90 %

Source: Primary data, 2015

Table 4. Fear of Earthquake

Impact	Percentage	Frequency
Yes	57 %	51
No	43 %	39
Total	100 %	90

Source: Primary data, 2015

Results concerning prevailing of fear among the local inhabitants (family members) of the respective areas as depicted in Table 4. The results showed significant signs among the family members regarding existence of Fear as a result of earthquake effected union councils of district Ziarat, data evaluated that 57 % of respondents with the 51 frequency said that yes there was fear of earthquake on their family members and 43 % respondents with 39 frequency replied that there were no fear of earthquake on their family members. These lines are in conformity with NDMA, 2012 and Himayatullah Khan and Abuturab Khan, 2008. The possible reason for prevailing and existence of certain fear among the family members of respective union councils may be due to two reasons like more casualties of closest family members and feeling of fear that certain natural hazard may occur again and again. Thus such natural hazard fixed this fear in their mind that earthquake may hit our area and could be resulted the same destruction.

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