



REVIEW OF RESEARCH

ISSN: 2249-894X

IMPACT FACTOR : 5.7631 (UIF)

UGC APPROVED JOURNAL NO. 48514

VOLUME - 8 | ISSUE - 9 | JUNE - 2019



ROLE OF ICT IN DISASTER MANAGEMENT

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ABSTRACT:

The present study aims to know the role of ICT in disaster management. Natural disasters include those unplanned events that occur as a result of natural processes such as earthquakes, tornadoes, tsunami, freezes, blizzards, extreme heat or cold, drought, or insect infestation. Since times immemorial disasters have been occurring in various forms and places and posing threat to people, structure or economic assets. The objective of the study used to examine the respondent's level of knowledge about the role of ICT in disaster management based on gender and occupation. To collect the necessary data, random sampling technique will be adopted. 100 samples were selected based on stratified random sampling method. The statistical tool such as t-test and F-test were used. Result shows that respondents differ in their level of awareness about disaster management based on age. Hence, the middle age groups have high level of knowledge about disaster management. Also the college levels have high level of knowledge about disaster management. Further the female groups have high level of knowledge regarding role of ICT in disaster management. Therefore it is concluded that the professional group have high level knowledge about ICT disaster management then compare to government employee.



KEYWORDS: ICT, Knowledge, Disaster management.

INTRODUCTION:

Natural disasters can neither be predicted nor prevented. The problem before us is how to cope with them, minimizing their impact. Tamil Nadu has witnessed havoc caused by cyclones and storm surge in the coastal regions, earthquakes, monsoon floods, landslides, and recently the Tsunami. Increase in urban population

coupled with the construction of man-made structures often poorly built and maintained subject cities to greater levels of risk to life and property in the event of earthquakes and other natural hazards.

The frequency of Sudden Impact Disasters (SIDs) such as tsunamis, floods, earth-quakes, hurricanes, landslides, volcanoes are on the increase today (Asian Disaster Reduction Centre ADRC, 2004).

The increase in the number of such disasters is due to many factors some of which include environmental degradation, rapid urbanization and social marginalization, leading to loss of life and property in the affected areas particularly in developing countries (McIntyre, 1999). Unfortunately, the poorer communities are the most vulnerable to such disasters due to a variety of socio-political,

cultural and economic factors which force them to live in disaster prone areas (Benson et al., 2001). Natural disasters attack the poor by interrupting income, reducing personal assets, and destroying essential public infrastructure.

This means that the use of ICT in disasters in the study area is faced with a lot of difficulties as well. In humanitarian logistics the use of ICT to move information to prepare for and during disasters is a vital weapon (IFRC, 2009). The appropriate use of ICT enhances the effectiveness of the disaster response system, thereby safeguarding the infrastructure of the community and the population (Harrison and Harrison, 2008). "ICT is the electricity that lets humanitarian staff conduct assessments, communicate requirements and speed relief in the form of shelter, healthcare and food to those affected by natural disasters" (Brindley, 2009).

ROLE OF ICT IN DISASTER MANAGEMENT

Disaster is an event which threatens society with unwanted consequences. It is associated with disruption of normal pattern of life, negative effects on human life and social structure. An emergency becomes a disaster when it exceeds the capability of the local resources to manage it. Disasters often result in great damage, loss, or destruction. Natural disasters include those unplanned events that occur as a result of natural processes such as earthquakes, tornadoes, tsunamis, freezes, blizzards, extreme heat or cold, drought, or insect infestation. Since times immemorial disasters have been occurring in various forms and places and posing threat to people, structure or economic assets. They have been mankind's constant though inconvenient companions and continue to occur and are increase in their magnitude, complexity, frequency and economic impact. The impact of natural disasters in terms of human and economic losses has risen in recent years, and society in general has become more vulnerable to natural disasters. In many parts of the world, disasters caused by natural hazards such as earthquakes, floods, land slides, drought, wildfires, tropical cyclones and associated storm surges, tsunami and volcanic eruptions have taken a heavy toll in terms of the loss of human lives and the destruction of economic and social infrastructure, not to mention the negative impact on already fragile ecosystems. Man-made disasters include chemical disasters, biological disasters and nuclear disasters. In simple terms we can define disaster as a hazard causing heavy loss to life, property and livelihood. Usually most affected by natural and other disasters are the poor and socially disadvantaged groups in developing countries as they are least equipped to cope with the events. It is the communities and human settlements which need to be prepared as it is the communities who need to react first and it is the habitats, which need to be strengthened to withstand the forces of hazards. Looking at disaster events of the last few years it is evident that by no means natural or man-made disasters can be fully prevented.

DISASTER MANAGEMENT POLICES

Disaster management is a multidisciplinary activity involving a number of Departments/agencies spanning across all sectors of development. Where a number of Departments/agencies are involved, it is essential to have a policy in place, as it serves as a framework for action by all the relevant departments/agencies.

The policy notes that State Governments are primarily responsible for disaster management including prevention and mitigation, while the Government of India provides assistance where necessary as per the norms laid down from time to time and proposes that this overall framework may continue. However, since response to a disaster requires coordination of resources available across all the Departments of the Government, the policy mandates that the Central Government will, in conjunction with the State Governments, seek to ensure that such a coordination mechanism is laid down through an appropriate chain of command so that mobilization of resources is facilitated.

REVIEW LITERATURE

Bayiah Joseph Ngang (2014) conducted a study on use of ICT in disaster management. The frequency of natural disasters and its negative consequences in terms of the number of people

killed, property destroyed and negative environmental impacts caused in the affected communities constitute one of the basic foundations and motivations for the development and use of ICT and other means of preventing as well as responding to disasters in the world today. This is simply because disaster management constitutes an important part of any developmental framework. Unfortunately a majority of these natural disasters occur in developing countries where information flow is greatly hampered because the national actors in disasters lack the skills to use ICT to prepare for and to response to disasters in their communities. A total sample of 150 organisations was selected from a population of 285 organisations within Cameroon, that are directly or indirectly involved with disaster management or developmental issues of any nature. In total 150 questionnaires were administered to these selected national actors by mail, internet, telephone and self-administration and 85 of the organisations responded to the questionnaire. After collecting and analysing the data, the authors came to the conclusions that; disasters occur in Cameroon on frequent bases causing lots of damages thus the need for ICT use in humanitarian logistics to move information and material. Results showed that national actors use the radio and local TV (CRTV) for disaster preparedness and the mobile phone for disaster response, while the internet and computer technology, foreign TV, Fixed phone and fax had a very low usage rate or sometimes not used at all. The reason for low usage or no usage was due to problems encountered by national actors in an attempt of trying to use them. Against this background, the authors suggested a number of recommendations that could improve the degree of ICT usage. This will solve the problem of poor ICT infrastructure, poor radio and TV signals, limited internet connectivity accessibility and availability in Cameroon.

Vogt (2016) describe a study on ICT framework for life cycle of the Disaster Management involving heterogeneous organizations having different organizational structure. Their preliminary findings show that there are still ICT Management issues, particularly ICT alignment and governance which are yet unsolved. The domain of Disaster Management demands different approaches because each emergency or Disaster is unique. Most countermeasures and the teams will differ from case to case. Therefore, information channels and the information requirements change according to the scenario. Thus, emergency managers demand solutions that are flexible. However an issue of reliability has to be addressed The challenge of this research will be to analyzing the existing frameworks and emphasizing the need to develop new models and methods, which are able to cope with the unpredictable nature of Disasters and address their unique needs such as increased flexibility and inter-organizational cooperation. Therefore, in this work the first challenge identified is to perform immediate and accurate assessment with precise information about the Disaster.

RESEARCH METHODOLOGY

The methodology followed in conducting the research will be described. Details regarding the research design, data collection and sampling plan yet to decide. Finally the limitations of the study will be briefed.

OBJECTIVES OF THE STUDY

- To find out the level of awareness about disaster management based on age and educational qualification.
- To examine the respondent's level of knowledge about the role of ICT in disaster management based on gender and occupation.

HYPOTHESIS

- ✓ Respondents significantly differ in their level of awareness about disaster management based on age and educational qualification.
- ✓ Respondents significantly differ in their level of knowledge about the role of ICT in disaster management based on gender and occupation.

Sampling technique

To collect the necessary data, random sampling technique will be adopted.

Sample size

100 samples were selected based on stratified random sampling method.

Data Collection

Primary method of collecting data will be adopted and personal enquiry method will be used. The employees will be interviewed by using the questionnaire, the data collection will be completed.

Statistical tools used

Statistical tool such as t-test and F-test were used.

RESULT AND DISCUSSION

Table: 1
Showing Mean, S.D. and F-value for respondents level of awareness about disaster management based on age

Age	Mean	S.D	F-value	P-value
Below 30 years	5.39	1.24	3.16	0.01 Significant
31 to 40	8.75	2.19		
Above 40	4.63	1.05		

The above table exhibits the details of Mean, S.D. and F-value for respondent’s level of awareness about disaster management based on age. It is inferred from the obtained F-value there is a significant difference in respondent’s level of awareness about disaster management based on age. Since the calculated F-value (3.16) which is significant at 0.01 level. Therefore the stated null hypothesis is rejected and alternate hypothesis is accepted. Therefore it is concluded that respondents differ in their level of awareness about disaster management based on age. So, the middle age group have high level of awareness about disaster management.

Table: 2
Showing Mean, S.D. and F-value for respondents level of awareness about disaster management based on educational qualification

Educational qualification	Mean	S.D	F-value	P-value
Illiterate	2.48	0.43	4.39	0.01 Significant
School level	4.17	1.21		
College Level	10.8	2.36		

The above table exhibits the details of Mean, S.D. and F-value for respondent’s level of awareness about disaster management based on educational qualification. It is inferred from the obtained F-value there is a significant difference in respondent’s level of awareness about disaster management based on Educational qualification. Since the calculated F-value (4.39) which is significant at 0.01 level. Therefore the stated null hypothesis is rejected and alternate hypothesis is accepted. Therefore it is concluded that respondents differ in their level of awareness about disaster management based on educational qualification. So, the college levels have high level of awareness about disaster management.

Table: 3
Showing Mean, S.D. and t-value for respondents level of knowledge about the role of ICT in disaster management based on gender

Gender	Mean	S.D	t-value	P-value
Male	9.61	2.12	5.47	0.01 Significant
Female	3.89	1.07		

The table 3 reveals the details of Mean, S.D. and t-value for respondent’s level of knowledge about the role of ICT in disaster management based on gender. It is observed from the obtained t-value there is a significant difference in respondent’s level of knowledge about the role of ICT in disaster management based on gender. Since the calculated t-value (5.47) which is significant at 0.01 level. Therefore the stated null hypothesis is rejected and alternate hypothesis is accepted. Therefore it is concluded that respondents differ in their level of knowledge about the role of ICT in disaster management based on gender. So, the female group have high level of knowledge about the role of ICT disaster management.

Table: 4
Showing Mean, S.D. and F-value for respondents level of knowledge about the role of ICT in disaster management based on occupation

Occupation	Mean	S.D	F-value	P-value
Labourar	4.87	1.02	6.39	0.01 Significant
Semiskilled	5.22	1.54		
Business	8.60	2.12		
Professional	16.9	3.67		
Government employee	15.6	3.89		
Others	3.07	0.86		

The above table shows that the details of Mean, S.D. and F-value for respondent’s level of knowledge about the role of ICT in disaster management based on occupation. It is inferred from the obtained F-value there is a significant difference in respondent’s level of knowledge about the role of ICT in disaster management based on occupation. Since the calculated F-value (6.39) which is significant at 0.01 level. Therefore the stated null hypothesis is rejected and alternate hypothesis is accepted. Therefore it is concluded that respondents differ in their level of knowledge about the role of ICT in disaster management based on occupation. So, the professional group have high level of knowledge about ICT disaster management then compare to government employee.

FINDINGS

- Result shows that respondents differ in their level of awareness about disaster management based on age. Hence, the middle age group have high level awareness about disaster management.
- Survey exhibits that respondents differ in their level of awareness about disaster management based on educational qualification. So, the college level have high level of awareness about disaster management.
- The statistical result shows that respondents differ in their level of knowledge about the role of ICT in disaster management based on gender. So, the female group have high level of knowledge about the role of ICT in disaster management.
- Analysis proved that respondents differ in their level of knowledge about the role of ICT in disaster management based on occupation. So, the professional group have high level of knowledge about ICT disaster management then compare to government employee.

CONCLUSION

The present study aims to know the role of ICT in disaster management. Disasters include those unplanned events that occur as a result of natural processes such as earthquakes, tornadoes, tsunami, freezes, blizzards, extreme heat or cold, drought, or insect infestation. Since times immemorial disasters have been occurring in various forms and places and posing threat to people, structure or economic assets. The objective of the study used to examine the respondent's level of knowledge about the role of ICT in disaster management based on gender and occupation. To collect the necessary data, random sampling technique will be adopted. 100 samples were selected based on stratified random sampling method. The statistical tool such as t-test and F-test were used. Result shows that respondents differ in their level of awareness about disaster management based on age. Hence, the middle age groups have high level of knowledge about disaster management. Also the college levels have high level of knowledge about disaster management. Further the female groups have high level of knowledge about the role of ICT in disaster management. Therefore it is concluded that the professional group have high level of knowledge about ICT disaster management then compare to government employee.

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