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ANALYSIS OF CONSEQUENCES ON AVAILABILITY OF COMMUNICATION SERVICES OF FREQUENT EARTHQUAKES IN AND AROUND PATAN TEHSIL OF SATARA DISTRICT, MAHARASHTRA

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ABSTRACT

Earthquake is a devastating natural disaster. Earthquakes have both short-term as well as long-term effects in earthquake prone regions. Communication services in a region are establishes significant external connections between the company, its suppliers, and its clients. Both efficient business operations and a positive public image are facilitated by communication. People who communicate are more informed, have more knowledge, and have wider perspectives. The economic development of the region depends on transportation and Communication services. The objective of the research is to assess the consequences of the earthquakes on Communication services in the study area. The Seismic region of in and around Patan Tehsil of Satara District of Maharashtra is selected. Majority of primary and secondary data regarding earthquake and its effects on Communication services of the study area is gathered through schedule and questioner. Stratified random sampling technique is used for study. Fisher exact test is also used for checking the dependency between two variables. This detail reveals that all kinds of road facilities are less in the very high risk zone and the availability of all types of roads increases with distance from earthquake epicenters.

***KEYWORDS**: Earthquake, Epicenter, Communication services, long-term effects.*

INTRODUCTION

Earthquakes have both immediate and long-term consequences in earthquake prone regions. The short-term effects of earthquakes can be evident in the aftermath. Thousands of people are dying, and there are several

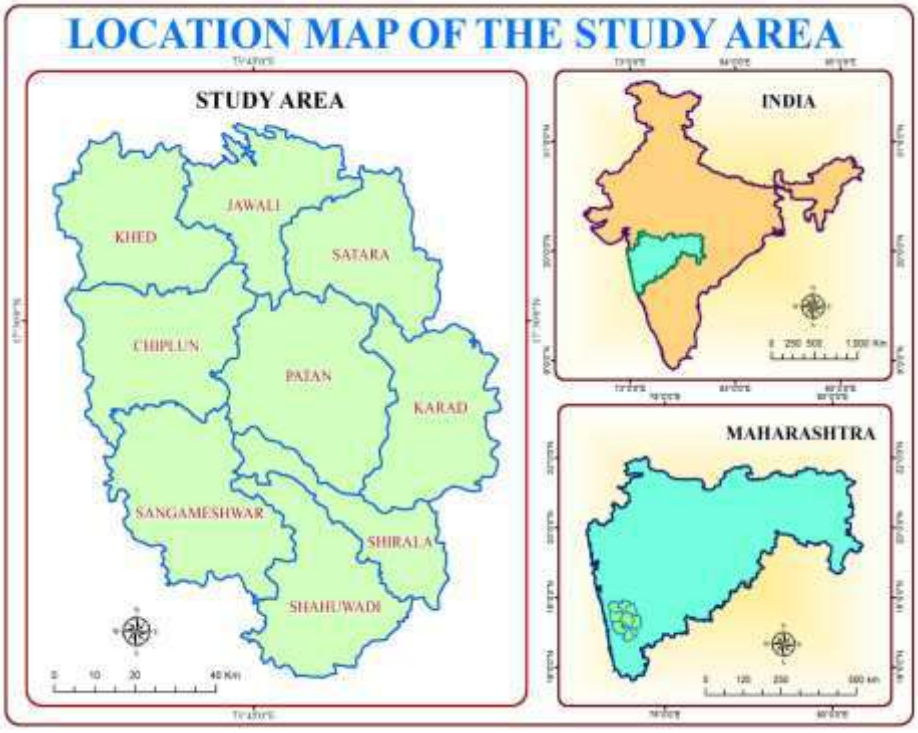
corpses. Buildings, factories, businesses, highways, bridges, and schools can all be destroyed by a major earthquake. Continuous seismicity affects the social and economic development of that region. In addition, earthquakes can impair public services such as transportation and communication. The economic development of the region depends on transportation and communication services. Communication services in a region are establishes significant external connections between the company, its suppliers, and its clients. Both efficient business operations and a positive public image are facilitated by communication. People who communicate are more informed, have more knowledge, and have wider perspectives. The economic development of the region depends on transportation and Communication services. Transport, utility, communication, and other lifeline networks all depend on one another. The percentage of availability of Communication services increases with distance from the epicentral area.

OBJECTIVES

1. To study the geographical setup of the study area.
2. To assess the consequences of the earthquakes on Communication services in the study area.

STUDY AREA

The Seismic region of in and around Patan Tehsil of Satara District of Maharashtra is selected. Study area consist parts of nine Tehsils of four Districts i.e. Satara district (Patan, Jaoli, Satara and Karad Tehsil), Sangli district (Shirala Tehsil), Kolhapur District (Shahuwadi Tehsil), and Ratnagiri District (Ciplun, Khed and Sangmeshwer Tehsil) are considered for the current study areas. The study area is stretched between 16°44' 05 "North Latitude to 17°55' 18" North Latitude and 73°17' 50 "East Longitude to 74°17'58" East Longitude, respectively.



DATASETS AND SOURCES

Majority of primary data regarding earthquake and its effects on transportation facilities of the study area will be collected through Field visits, Surveying and Interviews. Secondary Data was collected from the official documents of seismicity department of Koyna dam, Statistics department, Satara.

METHODS OF ANALYSIS OF DATA

Analysis of quantitative data gathered through schedule and questioner. Stratified random sampling technique is used for study area. Graphical representation is used for analyzing and representing data for obtaining the correct result. Such as: impact of earthquakes on the, Communication services are evaluated. The collected primary and secondary data are analyzed with following statistical technique:

Fisher Exact test:

Fisher exact test is also used for checking the dependency between two variables. This test is more accurate in case of small sample size. In this test we check the same hypothesis and interpret results using p-value.

$$p=\frac{(a+b)!(c+d)!(c+d)!(a+c)!(b+d)!}{a!b!c!d!n}$$

p = P-value

a, b, c, d = values in a contingency table

n = total frequency

DISCUSSION AND RESULTS

Telecommunication services are the most significant service of today's era. There are very few facilities. The total number of post offices is 120 (6.8 percent), 651 (36.9 percent) sub post offices, 965 (54.67 percent) villages have landline or broadband telephone services, and 1553 (88 percent) villages have mobile phone coverage available in the study area. Phone coverage is good in all earthquake risk zones.

Availability of Communication Services in Study Area

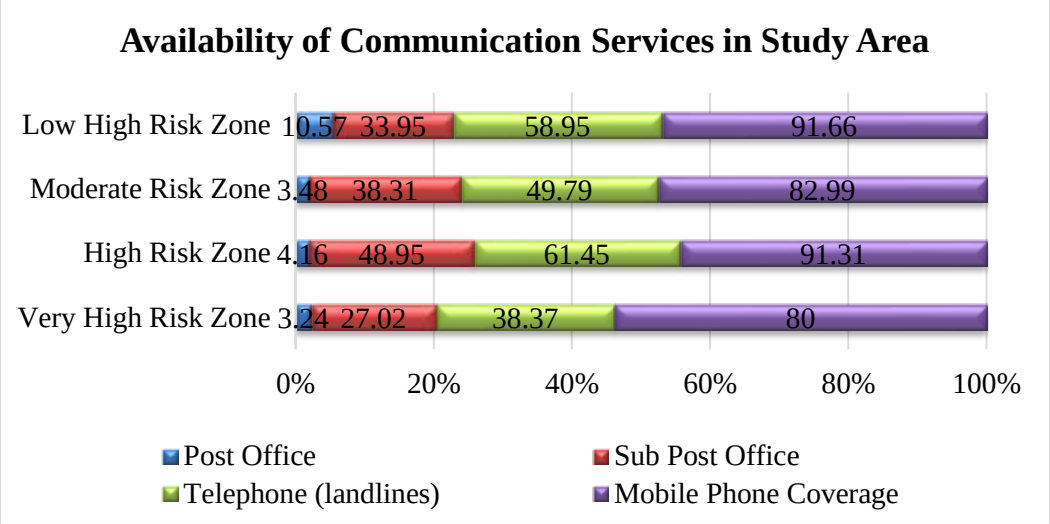
TABLE NO 1.1

Earthquake Risk Zone	Post Office	Sub Post Office	Telephone (landlines)	Mobile Phone Coverage
Very High Risk Zone	3.24	27.02	38.37	80
High Risk Zone	4.16	48.95	61.45	91.31
Moderate Risk Zone	3.48	38.31	49.79	82.99
Low High Risk Zone	10.57	33.95	58.95	91.66
Study Area	6.8	36.9	54.67	88

Source: Calculated by Researcher

Of all the telecommunication services, the very high-risk zone has fewer services. There are only 6 (3.24 percent) villages that have post offices, 50 (27 percent) villages have sub post offices, 71 (38.37 percent) villages have landline telephone service and 148 (80 percent) villages have mobile phone range of the total villages in a very high risk zone.

FIGURE. 1.1



There are 4.16 percent of villages with post offices, 48.95 percent of villages with sub post offices, 61.45 percent of villages with landline telephone service and 91.31 percent of villages with mobile phone coverage, of total villages in the high risk zone. There are 3.48 percent of villages with post offices, 38.31 percent of villages with sub post offices, 49.79 percent of villages with landline telephone service and 91.66 percent of villages with mobile phone coverage of total villages in the Moderate risk zone and 91.66 percent of villages in the 10.57 percent of villages with post offices, 33.95 percent of villages with sub post offices, 58.95 percent of villages with landline telephone service and 91.66 percent of villages with mobile phone coverage of total villages are in the low-risk zone.

CONCLUSION

The economic repercussions of earthquakes in the study area are analyzed. Relatively frequently, earthquakes have both short-and long-term consequences in the research area. The short-term effects of earthquakes can be evident in the aftermath. Of all the telecommunication services, the very high-risk zone has fewer services as compare to outer risk zone. As the distance increases from earthquake epicenters the communication services improves.

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