

## **ABSTRACT**

The main objective of this research is to identify factors influencing the effectiveness of the Tsunami warning system in Sri Lanka. The specific objectives are to identify reasons for operational problems, providing solutions including information from the other Tsunami warning systems and to identify the problems in evacuation process and suggesting solutions for it.

During literature review, it was identified that a complete early warning system needs to be comprised with four elements. Based on literature and mapping those factors with perspective of existing Tsunami Warning System in Sri Lanka, several indicators were found in measuring the level of effectiveness. In this research it was intended to find all possible factors which actively influence for effectiveness. These key factors were considered in terms of variables to measure the magnitude of those in measuring effectiveness of the system.

A conceptual framework was developed using the independent and dependent variables. A population of 6,639 family members subjected to be affected by Tsunami in three Gramasewa divisions in the coastal areas of Galle district was selected for Simple random sampling. 60 numbers randomly selected members were considered as the sample size. Each member in the selected sample was asked to fill the given questionnaire as a means of collecting the primary data.

Then the independent and dependent variables were validated from secondary data as per the literature. Research Hypothesis were formulated to check and analyze whether the effectiveness of Technological, Communication, Administration and Human Resource controls implemented for Tsunami warning system has a sound relationship with the overall effectiveness of the system.

During Regression Analysis and Hypothesis Testing, all the factors were accepted since the relationship between the independent and dependent variables were statistically significant. Based on above analysis/testing, the effectiveness of Technological, Communication, Administration and Human Resource factors were identified as the most critical factors affecting for the overall effectiveness of Tsunami Warning System in Sri Lanka apparently used in this research to evaluate the magnitude of it related to research questions.

With the use of SPSS theoretical framework was tested and validated for examining how well the hypothesized framework fits in to the sample data. The analyzed results were then used to answer the questions. Correlations were used when it was required to know about the relationship between two variables.

While analyzing the Sri Lankan context compared with Japan and the findings obtained through questionnaire, certain gaps were identified in the available system in Sri Lanka. In general with the view to improve the effectiveness of Tsunami Warning System it is recommended to have strong links among the identified critical factors at all operational levels of existing system. Hence this research develops a framework for evaluating the initiatives to be taken in organizational level to establish an effective Tsunami Warning System in the long run in Sri Lanka.