Public Perception of Earthquake Risks & Retrofitting of Heritage Buildings

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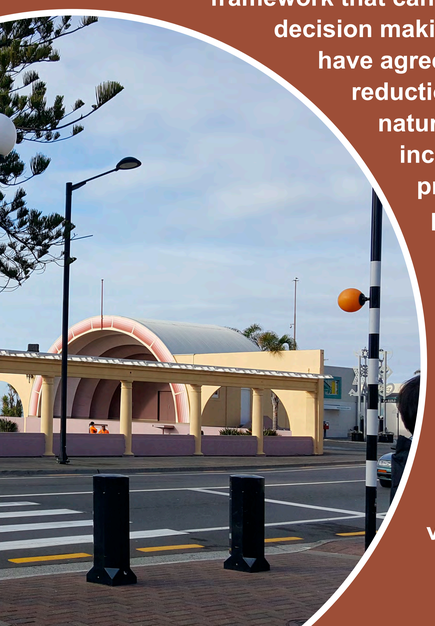
Background

There is a growing global concern about the steady increase in the magnitude and frequency of natural disasters including earthquakes, and their impacts for over the last two decades; The estimated number of deaths as a result of these events stands at 22,773, and more than 98 million other people have been affected leading to an economic damage of over 66 billion USD [1]. New Zealand has had some experiences with earthquakes and its disastrous impacts. One of the ways to reduce these impacts is through the retrofitting of earthquake-prone buildings to resist the effects of earthquakes. A society's identity is mostly defined by its heritage which is eventually transferred from a generation to the next. Heritage buildings are cultural assets to an area, and this makes them worthy to be preserved. In both low-risk and high-risk earthquake areas, the vulnerability of heritage buildings should not be overlooked. Therefore, it is imperative to adopt worthy and consistent conservation practices to better preserve them. The rationale behind the preservation of heritage buildings by the public includes; historical and cultural values, social values, economic values, and Sustainable development [2].

Over the previous years, the rising interest in the application of public risk perception in earthquake safety and the retrofitting of heritage buildings has been accompanied by the search for a nationally consistent framework that can be adopted as a tool in decision making. Most policy regulators have agreed that the key to the reduction of people's vulnerability to natural threats is through the incorporation of disaster preparation, extenuation and preventive actions into policy enhancement [3]. The proper understanding of public perception in earthquake preparedness will play a vital role in aiding policy makers to promptly adopt a potent approach in the event of an earthquake, and thereby reducing the vulnerability to individuals.



Research Objectives

This study aims to examine the public perception of earthquake risks and retrofitting of heritage buildings in New Zealand. In doing so, the study will seek:

a. To examine the perception of the public concerning their earthquake safety in heritage buildings;

b. To determine the level of value that the public attach to heritage buildings;

c. To ascertain public preparedness in accepting a lower level of earthquake safety in order to retain heritage buildings;

d. To examine how the public perception on earthquake occurrences, cultural values, and heritage preservation impact the degree of adoption of a nationally consistent approach that will address the risks posed by earthquakes and retrofitting of heritage buildings;

e. To identify other attributes besides heritage where the public is prepared to accept a greater earthquake risk.

Research Methods

A mixed method comprising qualitative and quantitative approaches will be adopted in this study. Survey and interviews will be conducted in six earthquake-prone regions in New Zealand. The data collected in this study will be analysed using appropriate statistical analysis techniques for the survey such as multi-attribute analysis, multiple linear regressions and structural equation modelling.

Research Expectations

The findings from this study will provide interventions that will guide policy makers, and prepare the public towards achieving a consistent earthquake risk management approach. This approach is aimed at preserving and redeveloping heritage buildings to be more resilient and sustainable. This study is still at the early stages.

Key references

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