

Date of Submission (month day, year) : July 7, 2025

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Abstract (Doctor)

Title of Thesis	Integrated Approach for Risk Reduction in the Landslide-Prone Settlement of Rural Small Village in Developing Country
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Approx. 800 words

Set against the backdrop of increasing disaster risks driven by growing population, this thesis situates its investigation within the critical need for nuanced understandings of disaster risk reduction. In recent years, the increasing global population has intensified the demand for residential land, pushing development into a hilly and mountainous area prone to landslides. This phenomenon creates a greater challenge in developing countries, where settlement expansions often occur in poorly planned and unregulated areas. Aggravated by social and economic limitations, landslide risk increases, as small but frequent landslides often go unnoticed in landslide management efforts despite their direct impact on the community. Taking this into account, this thesis emphasizes the importance of landslide risk reduction that considers various aspects of an area, underpinning community resilience.

This thesis advances Tri-Dimensional Integrated Landslide-Risk Reduction Framework, a unified framework that collaborate social drivers of settlement occupancy, physical vulnerability, and household-level economic capacity into a single, finance ready decision pathway. It responses to two critical gaps in the literature — the tendency to analyze social, physical, and economic dimensions in isolation rather than as interdependent factors, and the limited attention to the resilience of residential structures in settlements affected by small but frequent landslides — the framework is tailored to address a widespread yet underexplored risk scenario common in many developing countries. The study began with investigating the settlement occupancy in landslide-prone areas and the social determinants behind its development. The study reveals how familial ties, community networks, and social practices significantly influence the exposure to landslides. These social dynamics affect the physical layout and occupancy of spaces within the village and the decision to stay in landslide-prone area, highlighting the critical role of social aspects in shaping disaster vulnerability.

Concurrently, the study assesses the physical vulnerability of residential structures by identifying the key factors, both internal and external, that contribute to the risk. Based on the assessment results, the study proposed house modifications as an effective landslide adaptation strategy to enhance the resilience of the built environment. A discussion about the general feasibility of the

proposed adaptation strategy is also presented to explore the required complementary strategies in the implementation considering the community's context, including their social, economic, and institutional aspects. The required complementary strategies include the need for robust funding arrangements that can incorporate both internal and external funding.

The study then delves into economic dimensions by examining willingness-to-pay (WTP) as a potential source of community self-funding in implementing landslide adaptation strategies through house modifications or improvements. The findings reveal a strong desire to pursue these adaptation strategies despite limited financial capacity. The study also underscore that nuanced economic behavior, shaped by risk perception and socio-economic characteristics, plays a key role in guiding the community's investment in landslide adaptation strategies.

Additionally, the study examines and proposes funding strategies for implementing house modifications or improvements as part of landslide adaptation efforts. The study incorporates the social and economic factors of the community, as well as the physical vulnerability of the settlements, in formulating these strategies. Using a simulation approach, the proposed funding strategies demonstrate a progressive impact in meeting the financial needs required for implementing house improvements at both the household and community level. The findings underpin the importance of place-based approaches and collaborative participation, in bridging the adaptation strategies and their implementation.

By emphasizing an integrated approach to disaster risk reduction, this research provide detailed insights into the specific needs and capacities of Giripurno Village. It advocates targeted and sustainable risk reduction practices by integrating social, physical, and economic considerations. This approach not only address the immediate needs of Giripurno Village but also serve as an inspiration for other settlements facing similar disaster risks.