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# Conceptual Framework for Motivating Actions towards Disaster Preparedness Through Risk Communication

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## Abstract

The potential of risk communication as tool for reducing the devastating impacts posited by disaster hazards on human lives and property has been discussed extensively in literature. Most risk communication studies and strategies focus on awareness creation and education on disaster hazards. However, awareness creation and education on disaster hazards do not necessary translate into preparatory attitude and behaviour towards disaster hazards. Frantic efforts are required to persuade and motivate people at risk to convert hazard awareness and education into preparation towards disaster hazards. Against this backdrop, this paper develops a conceptual model through literature review to facilitate and enhance disaster preparedness through risk communication.

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*Keywords:* Risk Communication; Disaster Hazards; Disaster Preparedness; Persuade; Motivate

## 1. Introduction

The destructive impacts of natural hazards on sustainable development have been discussed widely in literature [2, 7, 11, 34]. Aversion of the negative consequences posited by natural hazards has fuelled efforts to prepare communities and people using structural and non-structural measures [20, 54]. Structural measures have progressed significantly over the last two decades yet natural hazard impacts on human lives and property have profoundly increased [58]. A shift from overdependence on structural approaches to non-structural approaches of tackling disaster hazards and its associated consequences has been suggested in literature and envisaged in recent practice [23, 15, 56]. Communication of hazard risk as one of the non-structural tools is increasingly gaining attention and currency due to its potential of mitigating disaster consequences and building disaster resilience.

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Risk communication is a two-way exchange of timely, accurate and up-to-date information regarding an impending risk through the active participations of all stakeholders to change the perception and behaviour of receivers [43]. It has been proven generally as one of the most effective tools of reducing the devastating impacts of disaster hazards on property and human lives [27, 36, 37, 38]. According to Rowan [45], the use of risk communication as a tool helps to establish trust amongst stakeholders, raise awareness, build concession and motivate preparedness actions towards a particular hazard. In recent practices, risk communication has been used to achieve the purpose of creating awareness and education on disaster hazards. Nevertheless, efforts to accomplish the purpose of motivating preparedness attitude and behaviour in people through risk communication has seen little improvement due to mistrust and low level of confidence in authorities, risk perception, breakdown of communication channels, ambiguous and unclear risk message content and loose/poor relationship between authorities and people [13, 19, 41].

Most risk communication strategies are based on information deficit model [37] with the underlying assumption that the public lacks scientific knowledge on risk and giving more information to people will facilitate preparation towards disaster hazards. Nevertheless, because the information deficit assumption model does not hold entirely, risk communication strategies should integrate motivation components. On the basis of this, the paper aims to develop a conceptual model to motivate and persuade recipients of risk messages to take preparatory steps towards disaster hazards.

## **2. Methodology**

This paper is anchored on extensive literature review of articles, chapters, archives and books written by well renowned scholars on disaster hazard preparedness, risk perception and risk communication. In general, a total of 321 articles, books and chapters were downloaded and collated from high standard databases in social sciences and arts and humanities such as Scopus, Science direct, Environment complete, Taylor and Francis and Wiley Online Library. Selection of articles for the study was based on three major criteria, which included; 1) the article relevance to the study 2) the article is applied to risk perception, risk communication and disaster preparedness. 3) Downloaded document has citations and references of authoritative scholars in risk perception, risk communication and disaster preparedness.

## **3. Risk Communication: Historical and Theoretical Perspectives**

Historically, the concept of risk communication is an offshoot of an in-depth study on risk management [48]. The areas of environmental management and public health predominantly made use of risk communication tool [46], thus a borrowed concept in disaster management. Before its emergence, experts and scholars attributed the growing devastating impacts of disaster on the assumption that recognition was not given to risks [47]. The provision of timely and up-to-date information from reliable sources was envisaged as the most reliable and effective solution to the problem [42]. Nonetheless, the implementation of perceived solution to avoid the increasing disaster impacts was critique [26], which eventually brought forth the mental and social constructivism models [18, 32]. While the mental model investigates into harmonization of perceptions of experts and non-professionals to ensure effective response to risk messages, the social constructivist model looks to understand the cultural and social context in which risk communicated.

The mental model or social constructivist model and sometimes both form the basis of all risk communication strategies. Conveying complex scientific knowledge about risk to tune public minds in accordance with scientific knowledge has been the cornerstone of the mental model. Though it has been justified on several grounds that risk communication, which takes into account the mental model of different group of people achieve its intended goals [32] yet it is inadequate to motivate actions toward disaster risk preparation [52]. Similarly, Douglas [10] and Beck [5] indicate that the mental model explicitly ignores the social and cultural context in which the risk is perceived, making it insufficient to achieve the overall goal of risk communication. In addition, failure of most risk communicated messages rooted on the mental model principles stems from the heterogeneous nature of communities and how people understand and respond to information [53, 55].

## **4. Motivational Factors of Disaster Preparedness**

Risk experience and hazard awareness through public education are the two main avenues to inform people about

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