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www.elsevier.com/locate/ijdr

PII: S2212-4209(18)30011-6
DOI: <https://doi.org/10.1016/j.ijdr.2018.03.012>
Reference: IJDRR834

To appear in: *International Journal of Disaster Risk Reduction*

Received date: 8 January 2018
Revised date: 6 March 2018
Accepted date: 6 March 2018

Cite this article as: Isaac Edem Djimesah, Agnes Naa Dedei Okine and Kingsford Kissi Mireku, Influential Factors in Creating Warning Systems towards Flood Disaster Management in Ghana: An Analysis of 2007 Northern flood, *International Journal of Disaster Risk Reduction*, <https://doi.org/10.1016/j.ijdr.2018.03.012>

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Influential Factors in Creating Warning Systems towards Flood Disaster Management in Ghana: An Analysis of 2007 Northern flood

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Abstract:

This paper is to examine and establish the purposes and impact of flood disaster management factors on creating warning systems outcome in Ghana's flooding state. The study collected empirical data from respondents by using a purposive sampling technique to select departmental heads, sectional heads, and staffs from the National Disaster Management Organization of Ghana through a self-administered questionnaire. Some residents from the flood-prone areas especially northern Ghana also contributed to the data collected. The study adopted the partial least square structural equation modeling (PLS-SEM) to categorize interactions and discover which of the factors had the convincing explanatory power. To help prioritize managerial activities on flood disaster management in Ghana, the study extended the PLS-SEM analysis by applying the Importance-Performance Map Analysis (IPMA). The outcome of the data analyzed demonstrated the suggested research model's effectiveness in creating warning systems outcome. This study delivers an influential knowledge of building warning systems and its' impact on flood disaster management for the National Disaster Management Organization of Ghana.

Keywords: Disaster management; Flood; Flood disaster; Warning system; Ghana.

1. Introduction and Background:

In recent times, many people in both developed and developing nations have been affected by the severe impacts of natural disasters, but awkwardly, most developed countries have adopted some measures to meet this natural disaster while as, more developing countries have no structures adaptation for development to stand the natural disasters. The world population is increasing abreast of human vulnerability to inherent risks thereby many disaster-prone areas serving as habitation.

The United Nations' International Decade for Natural Disaster Reduction [1] and recent high-profile disasters reported that disaster risk decline had climbed high on the international political agenda to prevent disaster from the areas that can be controlled. There has been a paradigm change from reacting to catastrophe towards preparing for and mitigating effects of disasters. The contingency of disasters will increase depending on global climate change, but the impact of natural disasters nowadays are already unacceptable and genuinely affecting human progress [2]. During the year 2005, there was a conference on disaster risk reduction in Kobe, Japan, at that meeting there was an agreement on how disaster and other risk associated with it can be prevented or reduced.

Economic, physical and social destructions that occur as a result of disasters are very severe for developing countries since the effect on their development is affected for a long time [3]. Including Ghana (a West African nation), the socio-economic and the negative developmental impacts of natural disasters. In 2007, floods in the Northern sector of Ghana resulted in eight (8) lives and displaced 121,000 people. Hectares of farmland of about 30,000 was washed away due to these flood disasters [4].

1.1 Disaster Trend Analysis

The United Nations International Strategy for Disaster Reduction (UNISDR) defines disaster as a "serious disruption of the operation of a community or society causing general human, material, economic or environmental damages which exceed the capability of the affected municipal or society to cope using its own resources"[5].

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