



EFFECT OF STRATEGIC RISK ASSESSMENT ON DISASTER MANAGEMENT IN KENYA (A CASE OF NATIONAL GOVERNMENT MINISTRIES)

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Abstract

Kenya has experienced an increase in the frequency of disasters over the past two decades. This study sought to analyse the effects of strategic risk assessment on disaster management in Kenya, with a focus on national government ministries. The study adopted a survey research design with the target population being heads of departments. The unit of analysis was the Kenya government ministries. The study population was 128. To obtain data, structured and semi-structured questionnaires were used. The data was analysed by use of Statistical Package for Social Sciences (SPSS) and then presented in tables, graphs, and percentages. The study adopted multiple regression model and Pearson Product-Moment correlation to test causality. The study established a statistically significant effect of strategic risk assessment on disaster management in Kenya, as exemplified by results from the national government ministries. The study concludes that strategic risk assessment as a strategic management practice has significantly enhanced disaster management in Kenya.

Keywords: Disaster Management, Strategic Management, Strategic Risk Assessment

INTRODUCTION

Disaster management essentially deals with management of resources and information towards a disastrous event and is measured by how efficiently, effectively and seamlessly one coordinates these resources (Modh, 2010). Disaster management at the individual and organisational level deals with issues of planning, coordination, communication and risk assessment. At the very outset of the disaster life stages, development of certain strategies and plans are necessary as to stop or limit the impact of such unavoidable event. Organisations concerned with the management of disasters must be able to design pre-disaster goals (Warner & Engel, 2014). However, the real challenge is to recognize any such event in a timely fashion and implement coping strategies to limit their damage.

Strategy making is arguably the most important activity of a practising manager and is regarded as a unifying idea which links purpose and action. Strategy therefore combines the articulation of human goals and the organization of human activity to achieve those goals. Greater awareness of the value of strategic risk analysis and the broader impacts of international affairs on internal operations will be increasingly important to the emergency management community (White, 2004). Recovery would be simple if all that were required was restoring the built environment. It is complex and difficult because it requires establishing or re-establishing important relationships within the system and between the system and its environment. Emergency and crisis management emphasize that effective emergency response and recovery is based on good planning (Dillon, 2014). Disasters occurrence can highlight the efficiency a governmental system. It reveals not only the structural strengths and limitations of the physical environment of a community but also how local, state and national response organizations function effectively and ineffectively (PAHO, 2013-2018).

Strategic risk assessment remains a key component in the success of disaster management efforts due to the need to identify, analyse and evaluate the likely risk before it occurs as emphasized by Abbas (2018). Such analyses facilitate the crucial inclusion of risk management strategies by the concerned entities. Strategic risk assessment would therefore help determine ways of eliminating the hazard, or controlling the risk when the hazard cannot be eliminated. No contingency plans would be put in place in the absence of strategic objectives derived from analysing risk strategically (Banerji 2013)

The Problem

Response to disaster in Kenya has been ad-hoc and uncoordinated, and overly reliant on well-wishers, (Wafula, 2012). The typical response has been to mobilize substantial resources after the occurrence of a disaster rather than to mobilize them before the disaster, to prepare and

empower people in risk reduction measures. According to a report by Walker, Tweed and Whittle (2013), the legislative and institutional framework on Disaster Risk Reduction in Kenya is fragmented, uncoordinated and many of the institutional mandates overlap. Such a weakness point towards the need to have sound strategies in understanding risk and consequently bolstering the effort to better manage it. Given that studies have confirmed that the country's efforts are adhoc and uncoordinated this study sought to provide some empirically based knowledge in strategic risk assessment.

Additionally, Ndegwa and Kinyua (2018) note that apart from the draft National Policy on Disaster Management and the National Disaster Response Plan, there is no single or series of laws or regulations pertaining specifically to disaster management, but rather a series of sectoral Acts, Regulations and Rules that support disaster management. Owuor (2015) noted that the level of impact has become more severe with rising deaths of people and livestock, loss of livelihoods, destruction of infrastructure, and economic and environmental loss. The impact of these hazards has often grown into wide scale disasters due to Kenya's economic, social and political vulnerability.

The existing gap therefore, necessitated the need to undertake this study in a bid to analyse strategic risks to improve disaster management in Kenya. The study sought to analyse the effects of strategic risk assessment on disaster management with specific reference to national government ministries.

Objective

The study sought to analyse the effects of strategic risk assessment on disaster management in Kenya, with reference to national government ministries

Limitations and Delimitations of the Study

During the course of data collection, the main challenge that the researcher encountered was that of some respondents not be ready to share information. The investigator had to assure the participants that the data gathered would be to confidential use and treatment. Also, some respondents did not understand the subject under investigation and the researcher used simple language and interpreted for them where they did not understand.

LITERATURE REVIEW

According to Zorn (2018), the environment and disasters are inherently linked. Parts of environmental management include risk assessment and contingency planning. Risk assessment entails hazard identification, risk analysis, and risk evaluation. Abbas (2018) cites

that the overall goal of hazard identification is to find and record possible hazards that may be present in an environment, and the risk associated with the hazard is analysed and evaluated. This will help determine ways of eliminating the hazard, or controlling the risk when the hazard cannot be eliminated. Banerji (2013) further cites that contingency planning helps deal with anticipated problems before onset of crisis.

As opined by Al-Khrabsheh (2018), efforts to reduce vulnerability to extreme weather events constitutes a significant challenge for planning systems considering the expected changes in the intensity and frequency of climate related processes. Assessing the vulnerability of the elements at risk is an equally important task. Aljuhman and Emeagwali (2017) argue that it is clear that in order to manage and reduce the risk that is attributed to a threatening natural process there is need to assess it (quantitatively or qualitatively) and to visualize it spatially. Hayes (2015) identifies three steps in the process of risk assessment namely risk identification, risk analysis, and risk evaluation. Risk assessment may also form the basis of cost benefit analysis of risk reduction strategies and optimization of public investment and development planning.

Morogo (2014) asserts that an assessment identifies which potential risks are greatest and which potential risks are substantially lower. If the risk is substantial, such as the potential of a fire in a paper facility, then appropriate resources can be expended to develop appropriate safeguard and the risk of loss can be shifted through insurance. However, where the potential risk is identified as low, then an assessment must be made of the time, resources and manpower necessary to minimize this potential risk. Safety professional will often need to educate management team members and broaden their thinking in order to acquire the necessary resources to properly develop a proactive plan of action to address potential catastrophic risk in the workplace. Hayes (2015) states that risk perception is the key element of individual and collective disaster risk management.

By increasing public understanding of hazard risks, disaster planners and managers seek to stimulate communities and individuals to take appropriate questions before and during crises. The importance of this kind of activity is emphasised in the UN's Hyogo Framework for Action 2005-2015 the international community's strategy for disaster reduction.

METHODOLOGY

This study is anchored in the positivism paradigm because it seeks to objectively establish facts by empirically establishing relationships among variables. A survey research design was adopted with the location being the city of Nairobi. This is mainly because the Government

conducts is business majorly through its ministries which have the main offices in Nairobi the Capital city.

The target population for this study was all the heads of departments where a census survey was carried out on the twenty (20) ministries in Kenya. The research studied a population of 128 respondents and the unit of measure was heads of departments of the ministries of Kenya. To obtain the data, semi-structured questionnaires were used in this research. The researcher mostly formulated fixed and open-ended questionnaires. The questionnaires formulated were related to the research questions underlisted in the statement of the problem and overall problem in study. The researcher was guided by the concepts of this study, theory and other previous studies to develop closed ended questionnaires as well as a few open ended ones. A five point Likert scale was used to elicit responses. Ordinarily a Likert scale exhibits favorable perception on one extreme and unfavorable perception on the other towards an aspect of study. Other items in the questionnaire are open ended and the respondents were expected to explain for clarification and support of the quantitative data. The questionnaire was developed by referencing studies similar to this study as well as other literature on the study concepts and context.

Authorization and a permit from the National Commission for Science, Technology and Innovation (NACOSTI) and a letter of introduction from Kabarak University, Institute of Postgraduate Studies and Research were obtained.

Validity was tested by using a panel of persons who judged how well the measuring instrument met the standards. They evaluated whether the questions effectively captured the topic under investigation. The researcher used Cronbach's alpha to measure reliability of the instrument used. Table 1 presents the reliability coefficients for the reliability analysis.

Table 1 Reliability Coefficients

| Scale | Cronbach's Alpha | Number of Items |
|----------------------|------------------|-----------------|
| Strategic Assessment | 0.884 | 13 |
| Disaster Management | 0.976 | 9 |

The reliability coefficients table show that all the scales were significant, having an alpha above the prescribed threshold of 0.7. Disaster management, with 9 items had the highest reliability ($\alpha=0.976$). Strategic risk assessment ($\alpha = 0.884$) with 13 items was also found to be reliable.

Both descriptive and inferential statistics were used in the study. Whereas descriptive statistics present respondents' opinion on subject matter under study, inferential statistics entailed both Pearson's Product Moment Correlation and Multiple Regression. The latter was

used to test the hypotheses of the study. The following regression model was used in this regard:

$$Y = \alpha + \beta X + e \dots\dots\dots (i)$$

Where:

- Y = Dependent variable (Disaster management)
- a₀ = Constant term
- X = Strategic risk assessment (Independent variable 1)
- β = Coefficients of variable X
- e = Error term

RESULTS

Out of a population size of 128 respondents, a response rate of 82.8% was achieved with 106 responds. This indicates an excellent response rate as recommended by De Vos et al. (2011). Data analysis was conducted through both in descriptive and inferential statistics. Whereas the descriptive statistics build the case for the main thesis of the study, the inferential statistics present the main thesis by testing the foregoing set hypotheses.

The study first sought to find out whether the respondent ministries had a disaster management plan in place, to which a majority (84.0%) affirmed (Table 2).

Table 2 Existence of a Disaster Management Plan

| Existence of a Disaster Management Plan | | | | |
|---|-----------|---------|---------------|--------------------|
| Management Plan | Frequency | Percent | Valid Percent | Cumulative Percent |
| Yes | 89 | 84.0 | 84.0 | 84.0 |
| No | 17 | 16.0 | 16.0 | 100.0 |
| Total | 106 | 100.0 | 100.0 | |

The study further found out as illustrated in Figure 1 that for a majority of the ministries, the disaster management plan in place covers a period of five years (74.5%), while some affirmed to three years (17.9%) and only a few affirmed to one year (7.5%).

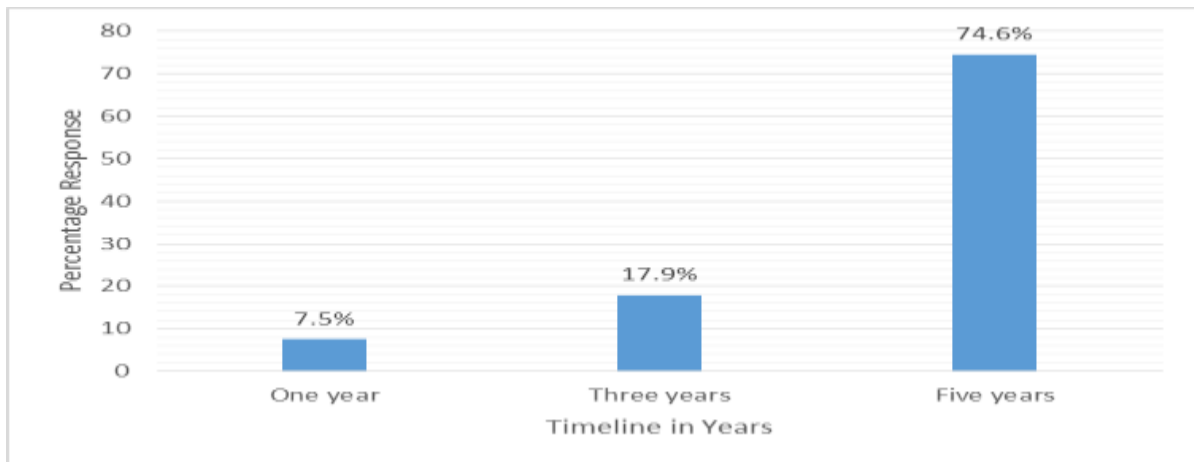


Figure 1 Timeline Covered

The study further sought to find out from respective ministries, the number of disasters experienced in the last 5 years. As illustrated in Figure 2, the study established that over the last five years, a majority (85.8%) of respondent ministries had experienced less than 5 disasters.

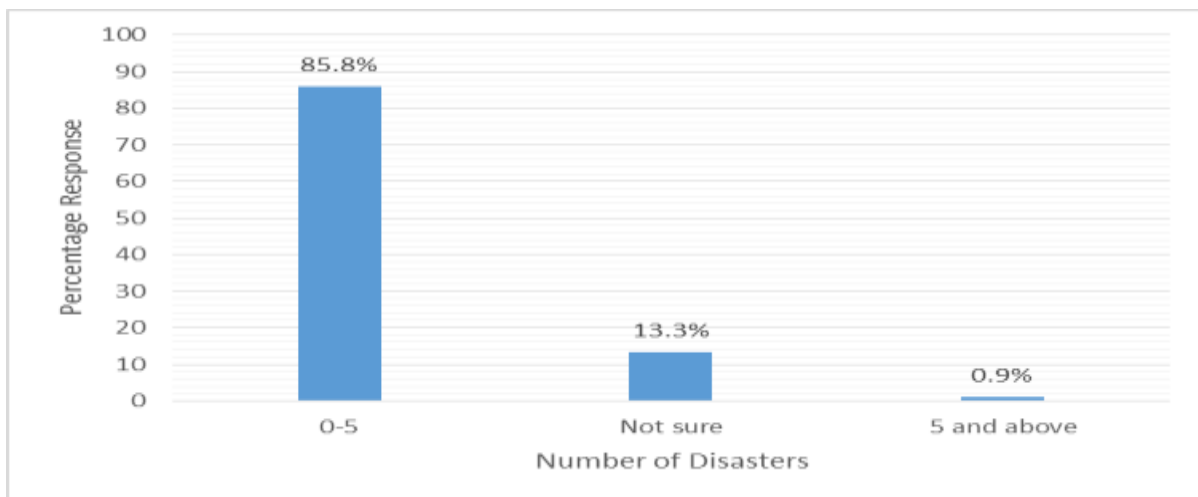


Figure 2 Number of Disasters

As shown in Figure 3, it was also established, upon further probing, that a majority (44.4%) of the ministries reviewed their respective disaster management plans on an annual basis, followed by 29.2% who affirmed to reviewing their plans quarterly.

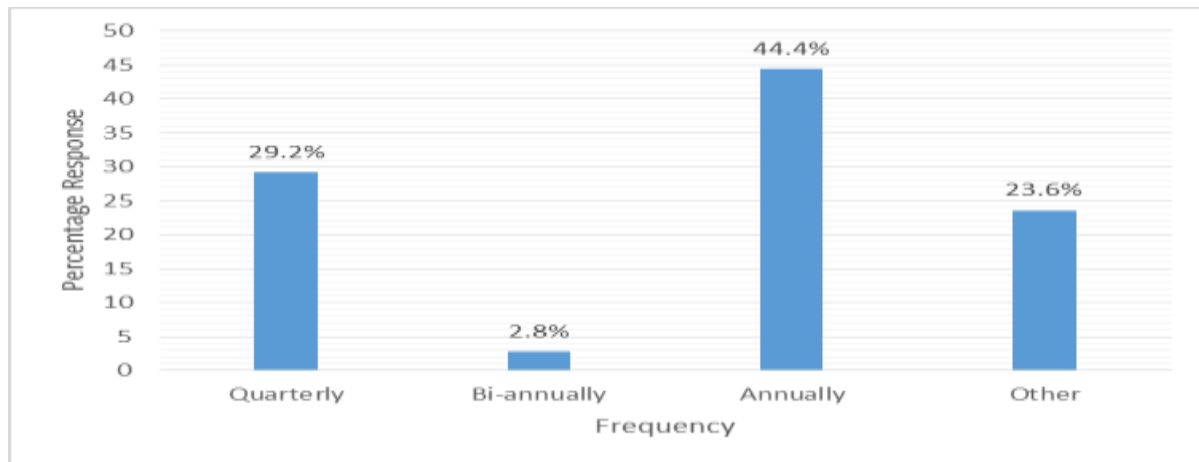


Figure 3 Frequency of Review

It follows from the foregoing findings that indeed a majority of government ministries have disaster management plans in place. This is in line with the draft National Policy for Disaster Management in Kenya (GOK, 2009) that aims at mainstreaming disaster risk reduction in the development process in Kenya across both the public and private sectors with a view to strengthen resilience in coping with potential disasters. The existence of a disaster management plan among a majority of the ministries indicates preparedness on the part of government institutions in disaster risk reduction activities. Accordingly, Taabu (2014) explains that effective disaster management depends on rate and force of natural and/ or man-made disasters. In this context, it is now essential to be able to promptly and effectively prevent and prepare for, respond to and recover from catastrophic events.

The study sought to examine the influence of strategic risk assessment on disaster management in Kenya. This would give an overview of the extent to which Kenya, through various national government ministries conduct strategic risk assessment with particular reference to hazard identification, risk analysis, risk evaluation and contingency plans. To this end, respondents were asked to indicate their levels of agreement with pertinent statements relating to the influence of strategic risk analysis on disaster management as experienced in their respective ministries. Responses were given on both a 'Yes' and 'No' basis and on a five-point Likert scale (where 1= Strongly Disagree; 2 = Disagree; 3 = Not Sure; 4 = Agree; 5 = Strongly Agree). The mean scores of 0 to 2.5 have been taken to represent statements dissented upon by a majority of respondents while mean scores of between 2.6 to 5.0 have been taken to represent statements agreed upon by a majority of respondents. The strengths in disagreement or agreement are represented by the respective strengths of the mean scores. Tables 3 and 4 present the descriptive test statistics for strategic environmental analysis.

Tables 3 Strategic Risk Assessment

| Hazard identification | Mean | Std. Dev |
|--|--------------|-----------------|
| The Ministry keeps and updates a risk register on workplace hazards | 3.5377 | .95792 |
| Hazards are classified according to their severity and communicated to all staff in the Ministry | 3.5755 | .92529 |
| Incident investigations are carried out as and when they occur | 3.8019 | .85546 |
| Corrective actions are well documented and communicated to all staff in the Ministry | 3.5566 | .93687 |
| Risk Analysis | | |
| Existing and potential threats that that Ministry could face are identified | 3.7547 | .77842 |
| The probability of the risk occurring is considered as a major event and all the necessary structures put in place to avert its occurrence | 3.5566 | .85167 |
| The ministry has formulated ways of managing risks | 3.7453 | .81721 |
| Risk Evaluation | | |
| Risk impact analysis is carried out by the Ministry | 3.4811 | .93840 |
| The Ministry has put in place mechanisms to control risks | 3.6509 | .89488 |
| The Ministry always implements recommendations of risk impact analysis | 3.5377 | .90685 |
| Contingency Plans | | |
| The Ministry has put in place mechanisms for receiving warnings on impending disasters | 3.7170 | .93355 |
| Warnings are received in good time for necessary action to be undertaken | 3.6571 | .90754 |
| The ministry has developed a well programmed risk management plan | 3.6698 | .88071 |
| Composite Mean | 3.634 | |

It was established that a majority of respondents ($\bar{x}=3.634$) affirm to their respective ministries conducting strategic environmental analyses. With regard to hazard identification, a majority of respondents highly agreed that incident investigations are carried out as and when they occur ($\bar{x}=3.8019$); corrective actions are well documented and communicated to all staff in the Ministry ($\bar{x}=3.5566$); and that hazards are classified according to their severity and communicated to all staff in the Ministry ($\bar{x}=3.5755$). On risk analysis, a majority highly agreed that the ministry has formulated ways of managing risks ($\bar{x}=3.7453$); existing and potential threats that that Ministry could face are identified ($\bar{x}=3.7547$); and that the probability of the risk occurring is considered as a major event and all the necessary structures put in place to avert its occurrence ($\bar{x}=3.5566$).

A majority of respondents further highly agreed that with regard to risk evaluation, their respective ministries have put in place mechanisms to control risks ($\bar{x}=3.6509$); and that their respective ministries always implements recommendations of risk impact analysis ($\bar{x}=3.5377$). A

majority of respondent ministries were further found to have contingency plans in place within their respective disaster management plans with mechanisms in place for receiving warnings on impending disasters ($\bar{x}=3.7170$); and a well programmed risk management plan ($\bar{x}=3.6698$).

Table 4 Impact Risk Analysis and Internal Mechanisms for Detecting Disasters

| Impact Risk Analysis | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Yes | 82 | 77.4 | 78.5 | 78.5 |
| No | 24 | 22.6 | 21.5 | 100.0 |
| Total | 106 | 100.0 | 100 | |
| Internal Mechanisms | Frequency | Percent | Valid Percent | Cumulative Percent |
| Yes | 82 | 77.4 | 77.4 | 77.4 |
| No | 24 | 22.6 | 22.6 | 100 |
| Total | 106 | 100.0 | 100.0 | |

The study probed to find out whether or not respective ministries carried out risk impact analysis to which a majority (77.4%) affirmed while only 22.6% declined. A majority of respondents (77.4%) further affirmed that their respective ministries had an internal mechanism in place for detecting disasters while only 22.6% dissented. The study also sought to establish the frequency with which the same was conducted as presented in Figure 4.

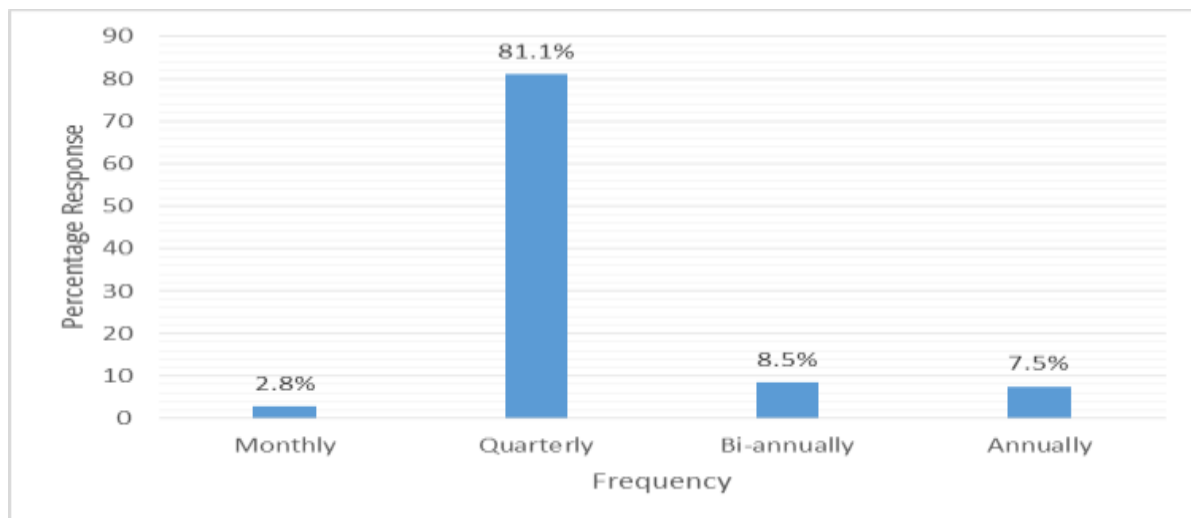


Figure 4 Frequency of Risk Impact Analysis

A majority of respondents (81.1%) indicated that they conducted their risk impact analysis on a quarterly basis distantly followed by 8.5% conducting their risk impact analysis bi-annually then 7.5% affirming to annual basis; while only 2.8% affirming to a monthly basis.

The study sought to analyze the effects of strategic risk analysis on disaster management in Kenya. Respondents were asked to indicate their levels of agreement with pertinent statements relating to disaster management and the influence thereof of strategic risk analysis on disaster management. Responses were given on a five-point Likert scale (where 1= Strongly Disagree; 2 = Disagree; 3 = Not Sure; 4 = Agree; 5 = Strongly Agree).

To establish the the effect of various strategic risk assessment subscales on disaster management, a regression analysis was conducted, with the assumption that: variables are normally distributed to avoid distortion of associations and significance tests, which was achieved as outliers were not identified; a linear relationship between the independent and dependent variables for accuracy of estimation, which was achieved as the standardized coefficients were used in interpretation.

Table 7: Strategic Risk Assessment Subscale Regression

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .357 ^a | .127 | .093 | 5.21545 |

a. Predictors: (Constant), Hazard identification, Risk Evaluation, Risk Analysis, Contingency Plans

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1 | Regression | 400.794 | 4 | 100.199 | 3.684 | .008 ^b |
| | Residual | 2747.291 | 101 | 27.201 | | |
| | Total | 3148.085 | 105 | | | |

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Hazard identification, Risk Evaluation, Risk Analysis, Contingency Plans

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|-----------------------|-----------------------------|------------|--------------|--------|------|
| | | B | Std. Error | Coefficients | | |
| 1 | (Constant) | 24.989 | 4.983 | | 5.015 | .000 |
| | Hazard identification | .722 | .524 | .235 | 1.376 | .172 |
| | Risk Evaluation | -.800 | .722 | -.233 | -1.107 | .271 |
| | Risk Analysis | .209 | .565 | .058 | .370 | .712 |
| | Contingency Plans | .761 | .244 | .304 | 3.114 | .002 |

a. Dependent Variable: Disaster Management

As presented in Table 7, regression analysis produced the model summary, ANOVA and regression coefficients. According to Katz (2006) regression analysis generates an equation to describe the statistical relationship between one or more predictor variables and the response variable. The results showed a correlation value (R) of 0.357 which depicts that there is a linear dependence between the independent and dependent variables. According to Tashakkori and Teddlie (2008), a value of 1.0 indicates a perfect fit, and it is thus a very reliable model for future forecasts, indicating that the model explains all of the variations observed. A value of 0, on the other hand, would indicate that the model fails to accurately model the data at all. According to Chaplin (2007) R-squared is a statistical measure of how close the data are to the fitted regression line.

With an adjusted R-squared of 0.093, the model shows that hazard identification, risk evaluation, risk analysis, contingency plans explain 9.3 percent of the variations in disaster management while 90.7 percent is explained by other factors not included in the model.

Analysis of variance was done to show whether there is a significant mean difference between dependent and independent variables. The ANOVA was conducted at 95% confidence level. The P-value of 0.008 implies that individual subscales making up strategic risk assessment, have a significant joint relationship with disaster management, at a confidence interval of 0.01 level to 0.05 level. This also depicted the significance of the regression analysis done at 95% confidence level and can thus be used to assess the association between the dependent and independent variables.

The regression coefficients table further reveals that individually, only contingency plans have a significant effect on disaster management, keeping all other factors constant ($\beta = 0.761$, $t = 3.114$, $p = .002$). A unit change in contingency plans would thus lead to a 0.761 change in disaster management. This can be attributed to contingency plans incorporating early warning mechanisms which combines elements of hazard detection, identification, evaluation, analysis and monitoring warranting timely preventive actions as opposed to reactive actions in disaster management.

The study performed Pearson correlation analyses to assess both the respective strengths and direction of relationships among the independent variables and between the independent variables and dependent variables. The composite variables were computed with the aid of the Statistical Package for Social Sciences. Multiple regression analysis was also conducted to determine the effect of the various independent variables on the dependent variable and therefore test the hypotheses of the study.

Table 8 presents the Pearson correlations for the relationships between the independent variable, strategic risk assessment and disaster management, which formed the dependent

variable. From the findings, a positive and statistically significant correlation is observed between Strategic risk assessment and disaster management at a correlation coefficient of .222 ($p < 0.05$).

The findings indicate a statistically significant linear dependence of disaster management on all the four independent variables. This implies that increase in any one of the four independent variables lead to an increase in disaster management, the degree of which is as per the strength or respective correlation coefficient. As such, to improve on disaster management among national government ministries, pertinent and adequate resources ought to be allocated to strategic risk assessment.

Table 8 Correlation Matrix for Composite Variables

| | | Disaster Management | Strategic Risk Assessment |
|---------------------------|---------------------|---------------------|---------------------------|
| Disaster Management | Pearson Correlation | 1 | |
| | Sig. (2-tailed) | | |
| Strategic risk assessment | Pearson Correlation | .222 [*] | 1 |
| | Sig. (2-tailed) | .022 | |

To establish the effect of strategic risk assessment on disaster management, a regression analysis was conducted. As presented in Table 9, regression analysis produced the model summary, ANOVA and regression coefficients. The results were also used to test the hypotheses of the study.

Table 9 Regression Analysis for Composite Variables

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .222 ^a | .049 | .040 | 5.36448 |

a. Predictors: (Constant), Strategic risk Analysis

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1 | Regression | 155.210 | 1 | 155.210 | 5.393 | .022 ^b |
| | Residual | 2992.875 | 104 | 28.778 | | |
| | Total | 3148.085 | 105 | | | |

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Strategic risk assessment

Coefficients^a

| Model | | Unstandardized | | Standardized | t | Sig. |
|-------|---------------------------|----------------|------------|--------------|-------|------|
| | | Coefficients | | Coefficients | | |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 26.274 | 4.926 | | 5.334 | .000 |
| | Strategic risk Assessment | .226 | .097 | .222 | 2.322 | .022 |

a. Dependent Variable: Disaster Management

The results showed a correlation value (R) of 0.222 which depicts a good linear dependence between the independent and dependent variables. With an adjusted R-squared of .040, the model shows that strategic risk assessment explains 4.0 percent of the variations in disaster management while 96.0 percent is explained by other factors not included in the model. Analysis of variance was done to show whether there is a significant mean difference between dependent and independent variables. The P-value of 0.022 implies that strategic risk assessment has a significant relationship with disaster management, which is significant at a confidence interval of 0.05.

The regression coefficients table reveals that at 0.05 confidence level, keeping other factors constant, strategic risk assessment has a significant effect on disaster management ($\beta = .226$, $t = 2.322$, $p = .022$). The study thus concludes that there is a statistically significant effect of strategic risk assessment on disaster management in Kenya.

It can be deduced from the foregoing findings that a majority of the national government ministries in Kenya ($\bar{x}=3.873$) include strategic risk assessment as a strategic management practice with a view to management disasters. A majority of the ministries particularly practice hazard identification, risk analysis, risk evaluation and put in place contingency plans which a majority of respondents highly affirm, have managed to ward off disasters. The findings imply that in order to adequately manage disasters and keep the workplace safe and healthy, it is eminent to include as a strategic management practice, strategic risk assessment to identify and classify hazards and document proper corrective actions; periodically analyse existing and potential risks and formulate corrective actions; evaluate risks and analyse their potential impacts; and put in place contingency plans for detecting impending risks through early warning mechanisms and formulate well programmed risk management plans for taking necessary actions.

The findings are in agreement with Hayes (2015) who identifies three steps in the process of risk assessment namely risk identification, risk analysis, and risk evaluation. The

findings are also in accordance with Taabu (2014) who asserts that an assessment identifies which potential risks are greatest and which potential risks are substantially lower. If the risk is substantial, such as the potential of a fire in a paper facility, then appropriate resources can be expended to develop appropriate safeguard and the risk of loss can be shifted through insurance. However, where the potential risk is identified as low, then an assessment must be made of the time, resources and manpower necessary to minimize this potential risk. Aghaei, Sayedin and Sanaei (2018) also agree that in order to manage and reduce the risk that is attributed to a threatening natural process there is need to assess it (quantitatively or qualitatively) and to visualize it spatially.

RECOMMENDATIONS

Based on the foregoing findings and the conclusions drawn, the following recommendations are made to practice, policy and theory.

Practise

The study has established that there is a statistically significant effect of strategic risk assessment on disaster management in Kenya. As such, it is recommended that in order to effectively carry out disaster management, there is need to enhance strategic risk assessment practices with particular regard to a combination of hazard identification, risk analysis, risk evaluation and contingency planning.

Policy

The study found out that a few national government ministries did not have a disaster management plan in place which exposes them to impending disasters. To address this, it is recommended that policies be instituted to make it mandatory for every national government ministry to have a disaster management plan in place and a specialized disaster management unit, section or department depending on the risk propensity of the services being discharged by respective ministries.

Theory

The present study was anchored on the Social Capital Theory which stresses the the ability of people to work together for common purposes in groups and organizations and the incorporation of disaster preparedness and resilience or creation of new networks and activities focused on disaster and sustainable livelihood. Hayes (2015) states that risk perception is the key element of individual and collection disaster risk management. By increasing public

understanding of hazard risks, disaster planners and managers seek to stimulate communities and individuals to take appropriate questions before and during crises. The present study findings support the Social Capital Theory in that the ability to carry out strategic risk assessment by teams has been found to have a significant effect on disaster management. They are able to assess their vulnerability to both human induced and natural hazards and develop strategies and resources necessary to prevent and/or mitigate the impact of identified hazards as well as respond, rehabilitate, and reconstruct following its onset.

The study was also underpinned by the Protection Motivation Theory which is organized as two mediating sub processes that consumers use in evaluating threats (threat-appraisal process) and in selecting among coping alternatives (coping appraisal). Assessments of threats (severity, vulnerability, and benefits) and coping factors (self-efficacy, response efficacy, and costs) combine to form a motivation in stakeholders to protect themselves from the risk. Protection motivation arouses, sustains, and directs activities starting with the identification of hazards. This is supported by the present study findings in that strategic risk assessment with particular reference to hazard identification, hazard identification, risk analysis and contingency plans will enable the government to ward off impending disasters. Some form of risk information can provide the impetus for the government to determine the degree of risk severity, their vulnerability, and their ability to reduce that risk.

Further, the study was grounded on the Contingency theory which suggests that management principles and practices are dependent on situational appropriateness. Different situations are unique and require a managerial response that is based on specific considerations and variables. Crisis management is extremely complex and full of uncertainty due to chaotic nature of disaster. In order to perform well in the crisis management, the government needs to consider both the environmental situations as well as internal conditions. This is supported by the present study findings that contingency plans particularly with regard to early warning systems have the potential to contribute significantly towards disaster risk reduction if adequate resource allocation towards the best technologies is observed.

Further studies

The present study has analyzed the effects of strategic risk assessment on disaster management in Kenya. The analysis was however limited to one direct factor that is strategic risk assessment which accounts for only 4.0 percent of the variance in disaster management while 96.0 percent is explained by other factors not included in the model. This implies that there exists a host of other underlying factors that possibly influence disaster management in

Kenya. As such the study suggests that future studies be conducted with reference to a set of other direct and indirect variables in relation to disaster management in Kenya

CONCLUSION

From the foregoing findings, it can be concluded that a majority of ministries particularly practice hazard identification, risk analysis, risk evaluation and put in place contingency plans which a majority of respondents highly affirm, have managed to ameliorate the effects of disasters. The findings imply that in order to adequately manage disasters and keep the workplace safe and healthy, it is eminent to include that as a strategic management practice, strategic risk assessment is important to identify and classify hazards and document proper corrective actions; periodically analyse existing and potential risks and formulate corrective actions; evaluate risks and analyse their potential impacts; and put in place contingency plans for detecting impending risks through early warning mechanisms and formulate well programmed risk management plans for taking necessary actions.

It can also be concluded that Kenya, through its national government ministries, include strategic risk assessment as a strategic management practice with a view to management disasters. A majority of ministries particularly practice hazard identification, risk analysis, risk evaluation and put in place contingency plans which a majority of respondents highly affirm, have managed to ward off disasters. The study concludes from the findings that there is a statistically significant effect of strategic risk assessment on disaster management in Kenya.

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