Effect Of Strategic Environmental Analysis 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 environmental analysis on disaster management in Kenya, a case of national government ministries. The study adopted the survey research design. The target population was heads of departments and the unit of analysis was the Kenya government ministries. The study population was 128. To obtain the data, 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. The study established a statistically significant effect of strategic environmental analysis on disaster management in Kenya, as exemplified by results from the national government ministries. The study concludes that strategic environmental analysis as a strategic management practice has significantly enhanced disaster management in Kenya.

Keywords: Disaster Management, Strategic Management, Strategic Environmental Analysis

Introduction

1.1 Background of the study

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 environmental 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).

1.2 Statement of the problem

Kenyan response to disaster 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 the natural 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. 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.

It is evident that without research, little information will be available in as far as disaster management is concerned. There is, therefore, the need to undertake this study in a bid to analyse strategic management practices on disaster management in Kenya. It is against this backdrop that the study sought to analyse the effects of strategic environmental analysis on disaster management in Kenya, with reference to national government ministries.

1.3 Objective of the study

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

2.0 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 ccontingency 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 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 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.

3.0 Research Methodology

This study is anchored in the positivism paradigm because it seeks to objectively establish facts by empirically establishing relationships among variables. The research design for this study was survey research design. The location of the study was Nairobi City. The Government carries out its roles through its ministries which are all in 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 under listed 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 ranging from 1= strongly disagree to 5= strongly agree was used to address some of the items. 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.

Prior to the main study, the researcher conducted a pilot study at four parastatals to pre-test the data collection instruments. Parastatals are semi-autonomous agencies under the ministries and therefore their governance structures are heavily borrowed from the ministries. The average number of heads of departments in parastatals is five, hence a target of respondents was twenty.

This study performed validity tests. 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 capture the topic under investigation. The researcher used Cronbach 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 Environmental Analysis	0.884	13
Disaster Management	0.976	9

The reliability coefficients table shows 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 (α=0.976). Strategic environmental analysis (α = 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:

$Y = \alpha + \beta X + e$ …….. (i)

Where:

Y = Dependent variable (Disaster management)
a_0 = Constant term
X = Environmental analysis (Independent variable 1)
β = Coefficients of variable X
e = Error term

4.0 Results and findings

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	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 (75.0%).

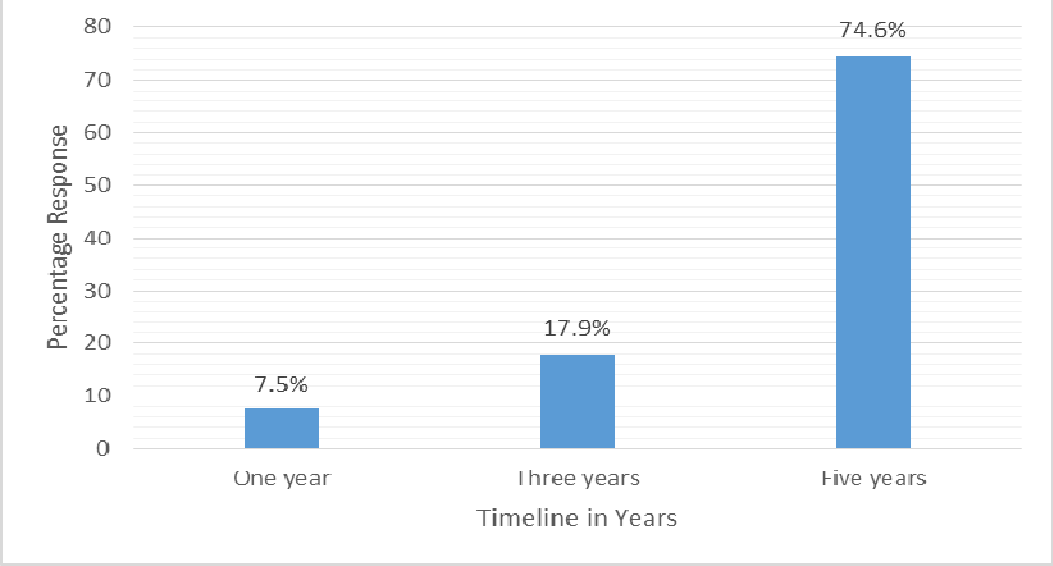

Figure 1 Timeline Covered

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.

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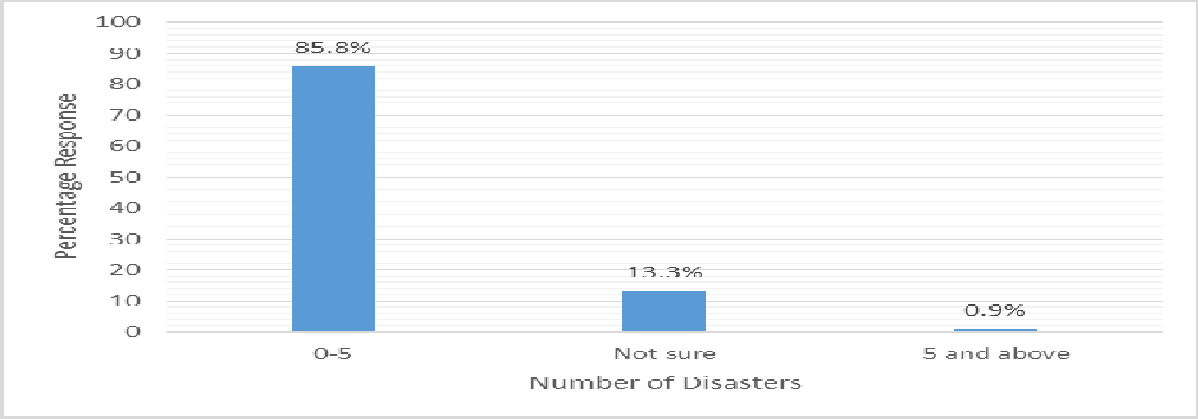

Figure 2 Number of Disasters

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.

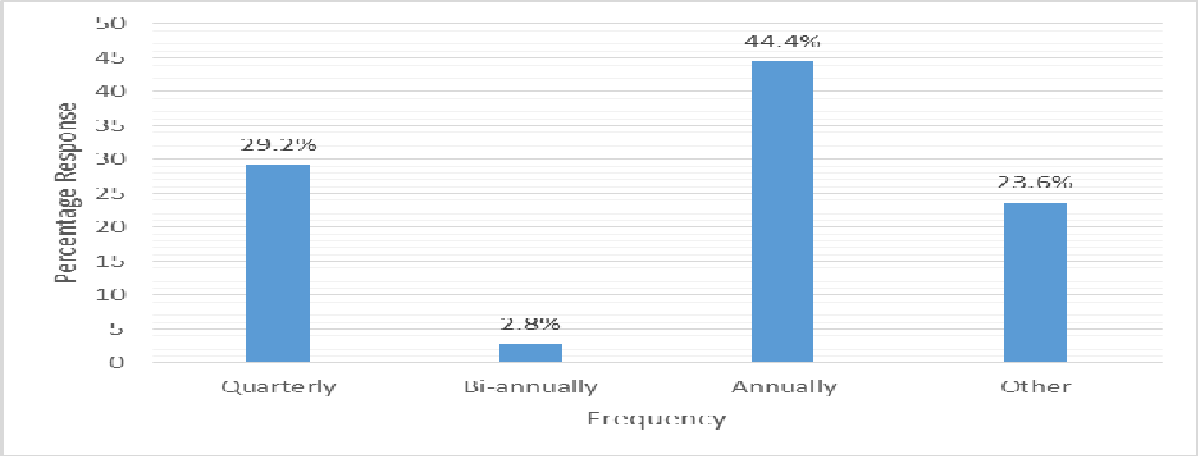

Figure 3 Frequency of Review

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 environmental analysis on disaster management in Kenya. This would give an overview of the extent to which Kenya, through various national government ministries conduct strategic environmental analysis 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 environmental 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 Environmental Analysis

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 our 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.

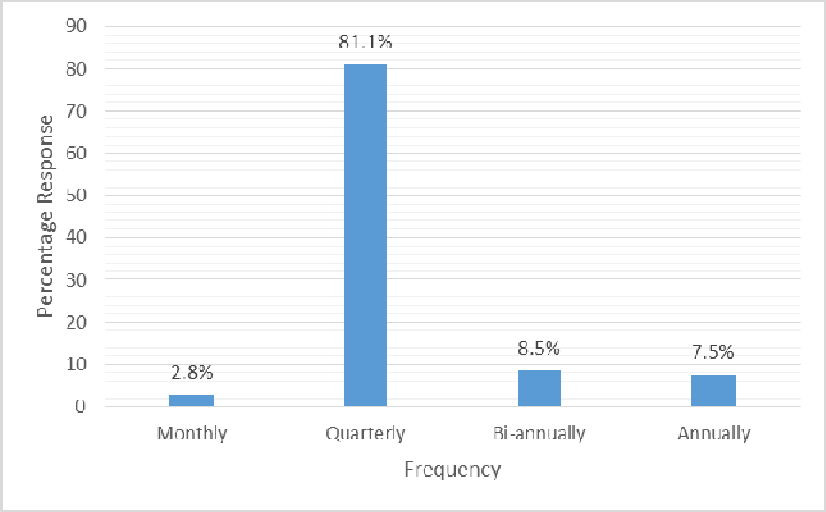

Figure 4: Frequency of Risk Impact Analysis

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 environmental 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 environmental 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).

Table 5 Disaster Management

	Mean	Std. Dev
Environmental analysis has a great influence on disaster management	4.2170	.63253
Disaster management has led to reduced loss of life	4.1415	.74882
Disaster management has led to reduced financial loss	4.1321	.71814
Disaster management has led to reduced environmental damage	4.1415	.72294
Composite Mean	4.183	

From table 5, a majority of respondents highly agreed that environmental analysis has a great influence on disaster management.; disaster management has led to reductions in loss of life ($\bar{x}$=4.1415), environmental damage ($\bar{x}$=4.1415); and financial loss ($\bar{x}$=4.1321).

The study performed Pearson correlation analyses to assess both the respective strengths and direction of relationships between pairs of subscales making up the strategic environmental analysis variable which also served as the indicators. The variable subscales were computed with the aid of the Statistical Package for Socials Sciences. Multiple regression analyses were also conducted to determine the effect of the various variable subscales on the dependent variable.

Table 6 presents the Pearson correlations for the relationships between the various sub scales under Strategic Environmental Analysis.

Table 6 Strategic Environmental Analysis Subscale Correlation

		Hazard Identification	Risk Analysis	Risk Evaluation	Contingency Plans
Hazard Identification	Pearson Correlation	1			
	Sig. (2-tailed)				
Risk Analysis	Pearson Correlation	.829**	1		
	Sig. (2-tailed)	.000			
Risk Evaluation	Pearson Correlation	.657**	.803**	1	
	Sig. (2-tailed)	.000	.000		
Contingency Plans	Pearson Correlation	.275**	.180	.082	1
	Sig. (2-tailed)	.004	.064	.401	

**. Correlation is significant at the 0.01 level (2-tailed).

From the findings, a positive correlation is seen between each pair of subscale. The strongest correlation was obtained between hazard identification and risk analysis measures (r = .829; p<.05), followed by risk evaluation and risk analysis measures (r = .803; p<.05) then Risk Evaluation and Hazard Identification measures (r = .657; p<.05). Contingency Plans and Hazard Identification were also positively and significantly correlated (r=.275; p<0.05). The correlation was performed at 95% confidence interval. The foregoing findings confirm the reliability results that strategic environmental analysis as a composite variable, is internally consistent as a majority of the sub-scales are positively and significantly internally correlated.

To establish the the effect of various strategic environmental analysis 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 Environmental Analysis 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 Coefficients	t	Sig.
		B	Std. Error	Beta		
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

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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 environmental analysis, 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 Socials 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 environmental analysis and disaster management, which formed the dependent variable. From the findings, a positive and statistically significant correlation is observed between Strategic Environmental Analysis 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 environmental analysis.

Table 8 Correlation Matrix for Composite Variables

		Disaster Management	Strategic Environmental Analysis
Disaster Management	Pearson Correlation	1	
	Sig. (2-tailed)		
Strategic Environmental Analysis	Pearson Correlation	.222*	1
	Sig. (2-tailed)	.022	

To establish the effect of strategic environmental analysis 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 Environmental 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 Environmental Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.274	4.926		5.334	.000
	Environmental Analysis	.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 environmental analysis 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 environmental analysis has a significant relationship with disaster management, which is significant at a confidence interval of 0.05.

The study sought to examine the influence of strategic environmental analysis on disaster management in Kenya. The regression coefficients table reveals that at 0.05 confidence level, keeping other factors constant, strategic environmental analysis has a significant effect on disaster management (β = .226, t= 2.322, p = .022). The study thus concludes that there is a statistically significant effect of strategic environmental analysis on disaster management in Kenya.

It can be deduced from the foregoing findings that a majority of national government ministries in Kenya ($\bar{x}$=3.873) include strategic environmental analysis 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 findings imply that in order to adequate manage disasters and keep the workplace safe and healthy, it is eminent to include as a strategic management practice, strategic environmental analysis 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.

5.0 Conclusions and Recommendations

5.1 Conclusions

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 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 that as a strategic management practice, strategic environmental analysis 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 environmental analysis 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 environmental analysis on disaster management in Kenya.

5.2 Recommendations

Based on the foregoing findings and the conclusions drawn, the following recommendations are made to practice, policy and theory. The study has established that there is a statistically significant effect of strategic environmental analysis 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 environmental analysis practice with particular regard to a combination of hazard identification, risk analysis, risk evaluation and contingency planning.

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.

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 environmental analysis 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 environmental analysis with particular reference to hazard identification, risk assessment, risk identification 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.

The study was also 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.

The present study has analyzed the effects of strategic environmental analysis on disaster management in the Kenya. The analysis was however limited to one direct factor that is strategic environmental analysis 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

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