

Determinants of Institutional Objectives and Risk Identification: Relative Relationship – Case of a University

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Abstract

The objective of this study is to investigate the relationship between the determinants of institutional Objectives and institutional-wide risk identification. In this study, guided by both qualitative and quantitative methods, the researcher uses content analysis and Spearman's ranked correlation analysis to investigate relationship between determinants of institutional Objectives and institutional-wide risk identification. The researcher also controls for other determinant using partial correlation analysis. The results were in two folds. Firstly -the University under investigation does not identify and prioritise its risks to a sufficient standard- that the University's' key risks are not linked to its strategic objectives- that the University does not ensure that the awareness of the institution's key risks is cascaded downward, upward or horizontally through out the university employees. Secondly, the findings indicated that - there was strong, positive correlation between F1 (clientele base-institutional objectives) and risk identification activity- in contrast, there was no relationship between F2 (opportunity for learning) and risk identification- meanwhile, there was evidence to suggest good agreement between F3 (sources of risk) and risk identification- finally, there was a strong, negative correlation between F4 (alumina related institutional objective) and risk identification.

Key Words: institutional objectives, risk identification, risk management

1. Introduction

An imperative need that policies be consciously formulated with reference to considered educational and social purposes, presents a major responsibility of continued formulation of institutional objectives. Recent studies (King Report, 2009; Stoney 2007; Standard & Poor, 2005; Higher Education Quality Committee- HEQC, 2004; Nicholas, 2004; Higher Education Funding Council for England-HEFCE, 2001) have subjectively confirmed the above idea by arguing that risks institutions face, are sufficiently managed, if institutional objectives are the focal point of the activities of risks identification. In support of the above, even past studies (Sporn, 1996; Harvey & Green, 1993; Oliver, 1991; North; 1990; Chickering, 1967) have long recognised and asserted that institutional objectives are related with risk identification of an institution. The aforementioned idea, coupled with both past and present studies, suggest the significance of securing risk identification process with institutional objectives.

Consistent with the above, the conclusion drawn from most recent literature (King Report, 2009; Lofstedt, 2009; Hazelkorn, 2008; Schmid, 2006; Husted & Allen, 2006; Spangenberg, 2004) have again subjectively indicated that there is a need to augment risk identification process with institutional objectives, since in their study, not all Universities especially in Africa incorporate institutional objective sufficiently into risk identification activities. Suggesting that lack of institutional objective could necessarily be a recipe for inefficient risk identification, and hence institutional failure.

This paper aims to study the idea that institutional objectives when related to specific risks conditions of an institution, is a necessary indicator of efficient risk identification activity and thus success of a University. The researcher uses objective (correlation) analysis as opposed to the subjective conclusions drawn from the authorities to investigate the relationship between the two variables. Below is the context of the study. This is followed by the research questions emanating from the context. The methodology used in addressing the research questions follows. The results of the study, the discussion of results as well as conclusive remarks and recommendations are respectively followed.

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2. Context of Study

To carry out this study, certain portions of the literature (King Report, 2009; Lofstedt, 2009; Stoney 2007; Standard & Poor, 2005; Sporn, 1996) both of profit and non-profit (higher education) were examined for expressed or implied statements on the formulation of the objectives of a college and a university. These statements were translated in terms of standard dictionary definitions for all significant words. The resulting translations were condensed into four general principles by grouping together identical and similar translations such that they would be consonant with a broad and generally acceptable democratic philosophy of education. These principles, institutional objectives form the content of this article and are termed as the '*determinants of institutional objectives*' for the purpose of this study. Following the argument from the above authorities, one could infer that institutional objectives-if not well matched with the needs of risk identification activities-would likely result in poor management of an institution. This implies that every institution must constantly study and revise its objectives in relation to risks it faces. This should be done purposively to meet the changing social and economic requirements of its clientele. These observations and the multiplicity of documentary evidence supporting them led to the principles (four determinants) of institutional objectives relating it with risk identification. These are briefly itemised below. It is imperative though to caution that it was not the intent of the researcher to cover all principles, but rather to determine the relationship between the most available used principles¹ and risk identification via a correlation analysis.

Principle One: Institutional statement of aims (institutional objectives) must express the risk identification activity needs of University's clientele. In fact, risk experts (Rothstein, Huber & Gaskell, 2006; Bartell, 2003; Jaafari, 2001) are disputing the relationship between clientele-based of the institutional statement of aims and risk identification activity. In other words, the institutional objectives are not as simple as would be the case. Their point of argument is straightforward, but crucial, similar view shared by some authors (King Report 2009; Stoney, 2007, Standard & Poor, 2005; HEFCE, 2001) put it that very few institutions identify and prioritise. For the above reason the study would investigate the relationship between clientele based-institutional objectives and risk identification needs of University.

Principle Two: The formulation of institutional objectives must take into account the experimental nature of learning and provide opportunities for exploration of risk identification in every activity of the campus. For instance, if a curriculum is to be given this direction, it should be evident that the statement of aims must possess reasonable clarity to include risk identification. Thus the interrelation of aims and risks identified must be explicit. In this regard, the study intends to investigate the relationship between opportunity for learning and risk identification.

Principle Three: The formulation of institutional objectives must be extensive and detailed enough to give direction to risks identification in terms of risk sources such as personnel management, guidance and counseling, public relations, library organisation, research, and other activities of the institution. These are activities other than the planning and reorganisation of courses of study, which depend upon the statement of objectives for direction. It is not necessary to catalogue all of these activities, but to name a few suffices for risks sources as mentioned. In this view, the study intends to investigate the relationship between institutional sources of risk and risk identification process.

Principle Four: Every board and member of University should deliberate in the formulation of the educational objectives of the institution. Furthermore, all the members of the instructional and administrative staffs should participate in the formulation of institutional objectives. Before policies are determined, data must be gathered and interpreted. Majority of writers (King Report, 2009; Lofstedt, 2009; Mikes, 2009; Stoney 2007) in University field, argue that not only should executives of an institution be in effect the professional advisers of the legislative bodies, but there should include other members. Among the functions of education is preparation of the student for participation in the life of a community, whether community is interpreted in strictly local or in national. The intellectual character and the sincerity of the opportunity for student participation in making the rules and regulations which govern the institution would determine in part the effectiveness of the social life of the students after they leave college. Some writers (Stoney, 2007, HEFCE, 2001) derive the theory of alumina-based participation in the determination of institutional aims

¹ This research paper can not exhaust all the determinants and a complete synopsis used by various institutions. For further details, I refer readers to see reports and papers such as King Report 2009 (I & II); Stoney, 2007, Standard & Poor, 2005; Rothstein et al., 2006; Bartell, 2003; HEFCE, 2001. Jaafari, 2001.

from the fundamentals of democratic government. The right of the governed to a voice in framing of laws under which s/he is governed. Others (King Report, 2009; Stoney, 2007) relate it to the benefits to be gained by self-discipline and personal freedom. Still others (Lofstedt, 2009; Stoney, 2007) find the most important value of student participation in the formulation of objectives in the increased effectiveness of the resulting goals because of the insight students gain into their own educational problems. It is obvious that any group can contribute to the success of a venture only to the extent that its members understand the motives and purposes of the venture. The argument is specifically applied to former students in an attempt to provide for their participation in the actual formulation of the educational goals of the institution. But, again there is no empirical studies and clear relationship between formulation of alumina and institutional objective in the direction of risk identification activities. This is matter of concern to this study, in which case it investigates the relationship between alumina related institutional objectives and risk identification as the last of the four principles.

The philosophic content of these set of four major principles of the study is evidenced in Stoney's (2007) argument that education tries to bring about an identity between the needs, interests of the individual and society. Thus, it interprets equality of opportunity as diversity rather than as identity, it is a continuing process; and it is involved in developing a wide variety of opportunities for shared interests and in the corporate character of life though risk identification. Thus these principles are somewhat purported to motivate risk identification. These are not all mutually exclusive and it may be impossible to separate the effects. These principles (determinants) as argued are a prerequisite to determining the risk identification effects on shareholders who are potentially affected in this study.

However, in addition to the above, prior empirical results (Besterfield-Sacre, Shuman & Wolfe, 2000) are contradictory. These authorities argue that risk identification should be non-influential. In another words, it should be free from predetermined factors such as institutional objectives. In which case, this non-influential opinion argues that risk identification should be purely circumstantial. Additionally, a methodological issue as a significant source of conflicting results is akin to a study by Kroner & Mills (2001) study. While, there is merit in Kroner & Mills (2001) and other authorities' perspectives, this paper asserts that the argument is also skewed and problematic. Focusing mainly on the accuracy of five risk appraisal instruments as researched by Kroner & Mills (2001) in predicting institutional risk in terms of misconduct creates an exclusion of the debate surrounding, for instance, the relative influence of institutional determinants on institutional-wide risk Identification.

The above discussion of the (a) four determinants of institutional objectives, which in principle are established subjectively by literature and (b) methodological difficulty reveals inconsistency of application of institutional objectives in relation to risk identification. It is the intent of this paper to test the potential relationship between determinants of institutional objectives and risk identification using a correlation analysis. Thus, the emphasis is on finding out which determinant of institutional objectives influences risk identification activity. Consequent to the above contestation, the following research questions have emerged:

Research questions

- Q1. To what degree has the institution identified its risks?
- Q2. What is the extent to which the institution has prioritised its risks?
- Q3. To what degree are the institutions' key risks linked to its strategic objectives?
- Q4. Is the awareness of the institution's key risks cascaded downward, upward or horizontally through out the university?

3. Method

- *Combined-methods design*

Following the above research questions formulated, the study adopted a combined-methods design; thus results from a merger of quantitative and qualitative approaches (Creswell, 2007). Within this paradigm, aspects of both the quantitative and qualitative techniques are applied on a phased basis. Creswell (2007)

developed a dominant-less-dominant framework for carrying out research using the mixed paradigm; this framework guided this study. The quantitative phase (by using modal responses, frequency distribution and correlation analysis) dominated, while the qualitative phase was less-dominant. This was in two folds. The first being because, the investigation was built around testing the extent of various activities of risk identification (cf. research questions 1, 2 & 4). Secondly, testing the relationship between determinants of institutional objectives and risk identification, emanating from the third research question (cf. research question 3). A small qualitative investigation (six interviewees) was conducted as a follow-up to solicit clarification on the research questions and results of the design adopted in the quantitative phase. A semi-structured interview was used in the qualitative phase since it was a follow-up investigation of the research questions formulated.

- *Research participants*

Risk analyst (respondents) in the risk/quality unit of the University comprised the sample for this research. The research participants were individuals working in the University who are tasked to undertake risk management activities for the institution. The researcher used the University's General Prospectus (2009: 34-43) to identify the target population. In the data collection process these population included three different types of committees operating in the University. These were; (1) committees of senate (2) joint council and senate committees and (3) management committees. These three categories either had members who belonged to the executive committee of senate or non-executive committee of senate (cf. University General Prospectus, 2009:34-43). The reasons for this selection² were in three folds. Firstly, the purpose of the research, notes that the functionality of risk awareness lies in a risk analyst's ability to predict and model quantifiable risk, based on appropriate policies and procedures. This, in this case is the responsibility of the various committees mentioned above. Secondly, the various committees assume a position of risk management in the institution and lastly to limit the study to respondents in management as well as decision making positions.

The participants were selected using stratified random sample from the committees to answer the questionnaires. Meanwhile a purposive non-random sampling was employed to answer the interview schedule. Data from the questionnaire was analysed using various tests (modal responses, frequency distributions, Spearman's ranked and partial correlation analysis). Correlation analysis suited this study because, the intent was to test the relationship between variables. Noting that because, the variables were ranked in terms of their responses³ (cf. section 4.2) using a five point likert scale, it necessitated the use of spearman's ranked correlation analysis based on the third research question. Thus, the main method of data analysis used for the qualitative data was thematic content analysis. This entailed identifying, coding and categorising patterns in the data (Creswell, 2007). The results of these analyses are presented in the section below.

In the interim, and for statistical clarification, a reliability analysis was conducted. For the identification and prioritisation of risks variables, an alpha value of 0.82 was obtained including other⁴ variables. Moreover, the instrument as a whole had a Cronbach's alpha of 0.72, while with standardised items, the value indicated 0.82. Thus high reliability was achieved for all variables. This fact together with a high Cronbach's alpha as seen in table 3.1 below suggest that statistically, a risk analyst can distinctly reason that there is a high level of confidence associated with the various variables and the instrument as a whole.

Table 3.1: Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items
0.716	0.821

² See Bayaga (2009b) for details of "Criteria for Selection of the Institution".

³ See example on section 4.2 Disaggregate level of risk identification and prioritisation in the University

⁴ See Bayaga (2009) for details of reliability analysis of other variables. This is due to the fact that this paper emanates from a much large research.

4. Results of Study

The data in the “background of sample” were given as percentages. The “second and third parts” consisted of modal responses and frequency distributions. The “final part” entailed correlation analysis of the variables; thus determinants of institutional objectives and risk identification activity.

4.1. Background information of sample

In this section, the researcher starts by revealing statistically the components of the sample. This is followed by the composite nature of the sample as revealed in the University’s General Prospectus (2009:34-43). The first part of the questionnaire⁵ addressed background information of the respondents. It consisted of the grade or simply the position in terms of rank in the University’s organogram or structure. Simultaneously, the background information sought to confirm the respondents association with the committees (cf. methodology). In the outputs below, the information for each of the background information are as presented in table 4.1. The distribution of the table revealed that most (35.6%) of the respondents were managers who managed various faculties as well as units in the University as directed by the deans. These managers work closely with student as well as employee related issues. A small percentage (ranging from 14-1.6%) who responded was made up of lecturers, junior lecturers, and assistant grade 1-3 employees. This category of the assistant grade 1-3 employees comprised the bottom rank of the employees in the institution, who either were the secretaries of various units and or departments or security personnel. Proportionally speaking, 1.6% made up of a stratum of deputy vice chancellor (DVC), registrar, and chief financial officer (CFO) together with chief human resource officer⁶ (CHRO). There was an appreciation of the category of professors and directors to 10.9%. Out of the 64 respondents, 23.4% consisted of associate professors and other managers as revealed in the distribution of respondents in table 4.1 below.

Table 4.1: Distribution of respondents by rank

	Frequency	Percent (%)
DVC/Registrar/CFO/CHRO	1	1.6
Directors/Professors	7	10.9
Associate Professors/Managers	15	23.4
Senior Lecturers/Managers 1 /Faculty Managers	23	35.9
Lecturers/	7	10.9
Junior Lecturers/	4	14.1
Assistant Grade 3	1	1.6
Assistance Grade 1	1	1.6
Total	64	100.0

Based on the various committees and reasons (mandate) cited above, a further analysis warranted the composite nature of the sample. The distribution revealed that, out of the 64 respondents, 25 of them were members of executive committee of senate, while the other 39 constituted members of non-executive committee of senate. In terms of this composition, although both committees are mandated to under-take risk management of the University as aforementioned, but it is important to note that the former takes the final decision on risk analysis and its awareness as mandated by the University policy⁷ (cf. University of Fort Hare (2009) www.ufh.ac.za/institutional policies and procedures). In contrast though, a document analysis as

⁵ Other parts, with the exception of risk identification and prioritisation which are not included in this paper are found in Bayaga (2009b).

⁶ It is important to note that even at the time of the entire research, the University had no CHRO within that stratum as the position was vacant. But, the human resource manager of the University acted in the capacity of the CHRO. A follow-up investigation of this vacant post at the time of this paper revealed though that the post was filled.

⁷ These are confidential documents and may only be viewed by readers with a special permission from University registrar.

evidenced in the intranet revealed that the available policies did not include institutional-wide risk policies and procedures. A further analysis gave a conclusive evidence of labour and specific admission/academic related policies and procedures. The only apparent policies and procedures available predominately described the reporting of quality assurance processes. These did not incorporate any institutional-wide risk policies of any sort. The below though describes the disaggregate level of risk identification and prioritisation responses in the University.

4.2. Disaggregated level of risk identification and prioritisation in the University

Table 4.2 below shows a distribution of some of the various sub-categories that made-up the variable risk identification and prioritisation. The modal response was disagreed. The table revealed that respondents disagreed that overall, the institution had identified its risks to a sufficient⁸ standard. The same was said of the level of sufficiency of risk prioritisation. Another sub-variable which respondents disagreed with was the issue of the institution's key risks being linked to its strategic objectives. Table 4.2 below revealed this in all four counts. There was enough evidence (as evidenced by the responses) to suggest that amongst the sub-variable underlying identification and prioritisation of risk, there is no any positive achievement in terms of the scale⁹ of response. This variable was markedly shown to have been insufficiently managed by the University when respondents strongly disagreed that the awareness of the institution's key risks is cascaded downward, upward or horizontally through out the university. This manifested itself when an interviewee (Goba) voiced her concern that:

...there seem to miscommunication and disjoint in the processes of managing risk. This is because, one never knows exactly when and how risk is conducted in this University. In fact, different faculties have different ways of approaching risks which in a long run duplicates process.

The view shared by Goba resonates with current literature (Standard & Poor, 2005; Nicholas, 2004; Hausken, 2002) which reasons that institutions, which are found to inappropriately identify and prioritising their risk, face the risk of inefficiency in terms of operations and planning. Here, the authors' explanation of inefficiency addresses the inability to operationalise the institutions business objectives to a sufficient extent.

Table 4.2: Risk identification and prioritisation response of sub-variables

		Overall, the institution has identified its risks to a sufficient standard	Overall, the institution has prioritised its risks to a sufficient standard	The institution's key risks are linked to its strategic objectives	The awareness of the institution's key risks is cascaded downward, upward or horizontally through out the university
	*N	64	64	64	64
	**Mode	2	2	2	1
Percentiles	25	2.25	4.00	3.00	2.00
	50	4.00	4.00	4.00	4.00
	75	4.00	4.00	4.00	4.00

“* N = 64 denote sample size” “** modal response: 2 denote disagreed & 1 denotes strongly disagreed”

The concerns of the Goba together with the above authors were very much articulated when a respondent (George) argued that a proper risk identification and prioritisation would lead to effective operation of the University in that the process:

⁸ Sufficiency in this study is taken to be 'sufficient' resources to provide comfort and meet obligations. Thus possessing adequate logistical and human accomplishments; of competent power or ability; qualified; fit; capable of meeting obligations and responsibility of the University.

⁹ The responses were categorised using a five-point likert scale where: Strongly agree = 5; Agree = 4; Unsure = 3 ; Disagree = 2 ; Strongly disagree = 1

...provides a basis for measurement so management can make meaningful decisions and as well to keep track of decisions and their implications so changes over time can be tracked. This seeks to automate, systematize, and enhance analysis so errors and omissions are reduced.

Georges view is consistent with the view of the research which argues that the entire process of risk identification provides a basis for measurement. This is of essence because, Universities need to measure technical consequences against some standard; that is either the industry within which, the institution operates and or by its own standards. For instance, if a server of the University fails in the data center and nobody notices the crash, has it had a business impact or not? The research argues that it does not suffice to quickly look for fit it solutions without evidently evaluating the failure-business-impact. This implies that as a matter of definitive steps, the research then argues that it is a business imperative to answer questions such as (1) is a business impact the rippling effect on other processes, lost revenues, increased competition, and the eventual side effects when a second server crashes in the University? And or (2) is the business impact the instantaneous unavailability of a service that serves many people? As George noted above, these set of risk identification and prioritisation process seek to automate, systematise, and enhance analysis so errors and omissions are reduced. It is important though to automate, systematise processes according to the institutions objectives or requirements as depicted by the four principles itemised. The below explains the composite risk identification and prioritisation responses of the University.

4.3. Composite risk identification and prioritisation responses

Table 4.3 below is descriptive analysis of the composite responses pertaining to risk identification and prioritisation in the University. This variable indicated that an encouraging response (52.7%) agreed the institution does identify and priorities its risk. From table 4.3 above, just a few (0.4%) strongly disagreed. But the area of concern was the group of respondents who disagreed and as well for those who were unsure (38.3%). This could be an issue for the management of the University, which may need to be dealt with. This is because, risk identification and prioritisation is a fundamental process of risk management. Timely and accurate information is the lifeblood of sound risk management. A good risk-management structure must encompass risks across the entire University, gathering and processing information on an institution-wide basis. In short, an analyst cannot manage risks, if the analyst does not know what they are. In this view, a comment made by a respondent (Xolani) noted that;

...effective risk management remains sturdy and durable only if supported by strong and interdependent risk functions that produce unbiased information.

Thus, empowering risk managers', results in clear and dispassionate thinking about the entire University's risk profile, with no favoritism toward any business unit as Xolani maintained. Senior managers should encourage risk managers to dig deep to uncover not only risks within each business unit, but also risk concentrations that can arise from the set of activities undertaken by the University as a whole as well as latent risks- such as hidden risk concentrations that can arise from correlation of risk in times of level of identification and prioritisation. Such risk management analysis should lead risk managers to point out cases in which certain business lines are assuming too much risk.

Table 4.3: Risk identification and prioritisation response

		Responses	
		N	Percent (%)
Risk identification and Prioritisation	Strongly disagree	1	0.4%
	Disagree	55	21.5%
	Unsure	43	16.8%
	Agree	13	52.7%
	Strongly agree	22	8.6%

This concerns unquestionably revealed by the interviewees and the statistical data supports the view that risk practices in the University were not cascaded through out the institution as seen in the section above.

Following research question three (cf. research questions), coupled with the conceptual principles (cf. context of study) and the above data, which suggest that risk identification somewhat relates with the institutional objectives. The next section elaborates on the correlation analysis results.

4.4. Relationships between Determinants of Institutional Objectives and Risk identification

The aim of this section was to find out if there was statistically significant relationship between various determinants of institutional objectives and identification of risk using correlation analysis. This is an analysis that is meant to be used to compare two different statistical measures of association. In this case though, the Spearman's rank correlation coefficient was programmed to calculate the rank correlation coefficient between the rankings generated (cf. hypotheses). For purposes of readability, the various determinants have been codified as seen in table 4.4 below. Each determinant correlated with risk identification process. The table shows four columns. The first being the various codes of determinants of institutional objectives, this is followed by the assigned sample sizes. The other columns present the Spearman's correlation (r_{spm}) and actual p-values. Invariably though, the various hypothesis followed by the discussions are as seen below.

Table 4.4: Correlation analysis of determinants of institutional objectives and risk identification

**Determinants	Code	Sample size	*Spearman's correlation (r_{spm})	Actual p-value
F1		64	+0.82	p= 0.0000
F2		64	+0.32	p= 0.0621
F3		64	+0.90	p= 0.0000
F4		64	-0.76	p= 0.0012

*+” denotes positive correlation and “-” denotes positive correlation

**F1 (clientele base-institutional objectives) and risk identification activity- F2 (opportunity for learning) and risk identification- F3 (sources of risk) and risk identification- F4 (alumina related institutional objective) and risk identification.

Hypothesis One

$H_0: r_{spm} = 0$ (there is no correlation between the ranked pairs: i.e. F1 and identification of risk)

$H_1: r_{spm} < > 0$ (ranked pairs are correlated: i.e. F1 and risk identification)

The relationship between F1 and risk identification when investigated using Spearman's correlation coefficient revealed positive effect. In the interim, preliminary analysis were performed to ensure no violation of the assumptions of normality. In this instance, a Kolmogorov-Smirnov test of normality was conducted. A non significant result ($p > 0.05$) indicated normality. Also linearity and homoscedasticity revealed no violation of assumptions. However, there was a significantly and strong positive correlation between the two variables ($r = +0.82$, $n=64$, $p < 0.0005$), with high levels of F1 and higher levels of risk identification activity.

Meanwhile, a further analysis revealed somewhat interesting evidence. Thus a partial correlation was also used to explore the relationship between F1 and risk identification activity, while controlling for scores on the F2 scale. There was a strong, positive, partial correlation between F1 and risk identification activity ($r = +0.79$, $n=64$, $p < 0.0005$), with high levels of F1 being associated with higher levels of risk identification. An inspection of the zero order correlation ($r = +0.80$) suggested that controlling for F2 had little effect on the strength of the relationship between these two variables. Based on interpretation of the test results, the null hypothesis ($H_0 = 0$) could be rejected, thus, there was significant relationship between F1 and risk identification activity.

Hypothesis Two

$H_0: r_{spm} = 0$ (there is no correlation between the ranked pairs: i.e. F2 and risk identification)

$H_1: r_{spm} < > 0$ (ranked pairs are correlated)

The relationship between F2 and risk identification was also investigated. Although, there was a positive (weak) correlation between the two variables ($r = +0.32$, $n=64$, $p > 0.0005$), with some levels of F2 with increasing levels of risk identification activity. The results did not show any significance. Suggesting that F2 indeed, had little or no effect on risk identification activity. Based on interpretation of the test results therefore, the null hypothesis ($H_0 = 0$) could not be rejected, thus there is no significant relationship between F2 and risk identification activity.

Hypothesis Three

$H_0: r_{Spm} = 0$ (there is no correlation between the ranked pairs; i.e. F3 and risk identification activity)

$H_1: r_{Spm} < > 0$ (ranked pairs are correlated: i.e. F3 and risk identification activity)

Further output reports the F3 correlation coefficient and whether the outcome is statistically significant (for F3 and risk identification). A significant association between the set of rank by calculating Spearman's rank correlation coefficient (r_{spm}) was revealed. Noting that once more, the value of r_{spm} ranges from -1 to +1. Results indicate that there is evidence to suggest good agreement ($r = +0.90$, $n=64$, $p < 0.0005$), between F3 and risk identification activity. Thus, in this case, H_0 was rejected.

Hypothesis Four

$H_0: r_{Spm} = 0$ (there is no correlation between the ranked pairs; i.e. F4 and risk identification activity)

$H_1: r_{Spm} < > 0$ (ranked pairs are correlated: i.e. F4 and risk identification activity)

The other measurement variable was F4 and risk identification activity. Again the data was analysed using Spearman's rank correlation, which converts the measurement variables to ranks. The results revealed that there is rather an inverse relationship between the variables, but significant ($r = -0.76$, $n=64$, $p < 0.0005$). Based on interpretation of the test results again, the null hypothesis ($H_0 = 0$) could be rejected, thus there is relationship between F4 and risk identification activity. But in this classical case, there was a strong, negative correlation between the two variables with high levels of F4 with lower levels of risk identification activity, thus, not only is there a relationship, but the relation is inversely related, for the fourth hypothesis. The next section is a discussion of the research results.

5. Discussion of Findings

Following the above data (research results), there were two areas of discussion. The first discussion embodies sections 4.2 and 4.3. The second evolves from section 4.4, which emanates from research question three (cf. hypothesis two).

The first task resulting from the research results (cf. section 4.2) though is the responsibility of an institution to set out objectives tailored towards risk identification. Evidently in section 4.2, one of the most important sub-variables¹⁰ investigated revealed that the institution did not link its key risks to its strategic objectives. Thus, recalling from the data in section 4 (cf. section 4.2), there were three areas of concerns that the University had to attend to these were (1) the fact that University had to identify and prioritised its risks to a sufficient standard (2) and that the institution's key risks were not linked to its strategic objectives, and (3) the awareness of the institution's key risks was not cascaded downward, upward or horizontally through out the university.

Standard & Poor (2005) explained that having identified risk that is tied to the institutional objective, the next step involves the identification of alternative appropriate actions. These actions are for managing these risks, evaluating and assessing their results, impact as well as implementation of treatment plans, noting

¹⁰ The institution's key risks are linked to its strategic objectives

that irrespective of the iterative nature, some of the processes are integrated, since identified risks as George (a respondent) argued:

...may have varying impact on the organisation, it suggests that not all risks carry the prospect of loss or damage.

This implies that an adequate educational plan can only be attained by conscientious tailoring to the society it serves- thus, its clientele, its personnel, its physical, social, and industrial environment. The reason behind this suggestion as George (a respondent) and Standard & Poor (2005) argued is because, in most cases risk source emanate from the above mentioned components of the society. This implies that opportunities may also arise from the risk identification process. In the above direction, Nicholas (2004) argues that management options for risks having negative outcomes and look similar to those risks with positive ones, although their interpretation and implications are completely different. Such alternatives might be: (1) to avoid the risk by deciding to stop, postpone, cancel, divert or continue with an activity that may be the cause for that risk (2) to modify the likelihood of the risk trying to reduce or eliminate the likelihood of the negative outcomes (3) try modifying the consequences in a way that will reduce losses (4) to share the risk with other parties facing the same risk. Here insurance arrangements and organisational structures such as partnerships and joint ventures that could be used to spread responsibility and liability. Of course, the institution should always keep in mind that if a risk is shared in whole or in part, the organisation is acquiring a new risk (i.e. the risk that the organisation to which the initial risk has been transferred may not manage this risk effectively). For this reason, Nicholas (2004) argues that large numbers of risks would be apparent in almost any given institution. As Xolani (a respondent) added:

...identifying these risks are important, but it is the prioritisation of these risks that leads directly to creation of value. Through the activities of prioritising risks, the critical question can (and must) be answered. Prioritisation should be driven to answer questions such as what shall we do first given the current risk situation? And what is the best allocation of resources, especially in terms of risk mitigation activities?

Clearly, the identification and prioritisation processes must take into account which business objectives are the most important to the organisation, which objectives are immediately threatened, and how likely technical risks are to manifest themselves in such a way as to impact the business. This stage as Sala (a respondent) noted:

...creates its output a list of all the risks and their appropriate priority for resolution.

However, in the event that available resources (e.g. the budget) for risk treatment are not sufficient, risk identification action plan should set necessary priorities and clearly identify the order in which individual risk treatment actions should be implemented.

The Second task (cf. hypotheses) further argued that the process of risk identification should involve being able to correlate risk with the determinants of institutional objectives. This was evidenced in the hypotheses, where there was a strong, positive correlation between some of the determinants (F1, F3 & F4), with exception of F2 (which was inversely related). In any case, this research argues that the risk should seek to generate some empirical evidence in order to determine the level of impact of risk and to predict the occurrence of risk through some deterministic and or simulated procedures. The above line of thought, which is statistically supported by the correlation analysis (cf. hypotheses), suggests that the empirical evidence generated, may then be used in one or many different ways in risk identification for achievement of institutional objectives. For this reason, this paper argues that the usage of the empirical evidence related to institutional objectives may include; to refute an idea and or support an aspect of argument embodied in risk management process, and once that is done, it gives an opportunity to prioritise risk that is directly correlated with the objective of the institution.

6. Lessons and Conclusion

There are two sets of conclusions drawn from this study, firstly, from sections 4.2 and 4.3. Secondly, from section 4.4. In view of the research questions, there are three main areas of concern to the University. These are that (1) the University does not identify and prioritise its risks to a sufficient standard. (2) and that the institution's key risks are not linked to its strategic objectives. To be able to achieve the above, it was crucial to note that (3) the University does not ensure that the awareness of the institution's key risks is cascaded downward, upward or horizontally through out the university employees. Thus, the research reasons for the adoption of a strategic and formal approach to University-wide risk identification process to improve decision making in the University following the below findings of the section.

Based on the third research question (cf. research questions), which necessitated the hypotheses, the researcher has drawn a number of conclusions from the correlation analysis. Part of the analysis confirms previous literature study (cf. context of study). The researcher found a relationship between F1 and risk identification process. Based on the results, it was concluded that F1 has effect on risk identification process. The researcher found no significant effect of F2 on risk identification. Thus, there was no good evidence that F2 relates with risk identification process. The study indicates that F1, especially in conjunction with F2 although are determinants of institutional objective, in general, there was still no effect on risk identification process, if F1 and F2 are partially correlated. Thus the results indicated F2 does not have impact on risk identification. Analysis of F3 showed a significant impact on risk identification process. There was also a significant risk identification decline in the degree of F4, noting that the converse was also true as measured by the inverse correlation relationship. Thus, although F4, which is primarily a determinant of institutional objective, does not show any positive effect in terms of risk identification process, but rather negative relationship.

Thus, while the results suggest a general presence of relationship various determinates of institutional objectives and risk identification process, the research found that institution with greater F4 are more likely to impact on risk identification in opposite direction. First recommendation thereof is (1) the University should identify and prioritise its risks to a sufficient standard (2) the institution's key risks should be linked to its strategic objectives and (3) the University should ensure that the awareness of the institution's key risks is cascaded downward, upward or horizontally through out the university employees. The second recommendation entails, in general, the University needs to be aware that when risk identification process is linked with certain specific determinants of institutional objectives, there is a positive relationship between the two variables. But there is a negative relationship between F2 and risk identification process. The third recommendation is to widen the scope of the determinants of institutional objectives that have positive effect on risk identification process.

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