ANALYSING THE IMPACTS OF PHYSICAL RISK CONTROL TECHNIQUE ON CORPORATE RISK MANAGEMENT.

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Abstract

Physical risk control is one of the measures used in managing organisational risks. It is one of the modern methods used in the management of corporate risks. Corporate entities undervalue the importance physical risk control in the management of their risks as they lay so much emphasis on financial risk control techniques. The aim of the study is to identify the impact of physical risk control techniques in corporate risk management and the specific objectives of the study are: to identify the extent of effectiveness of physical risk control techniques in corporate risk management in Nigeria, to examine the cost effect of adopting physical risk control in the management of corporate risks management in Nigeria and to assess the extent of physical risk control in complementing financial risk control in corporate risk management in Nigeria. The data for the research was garnered through the administering of 270 copies of questionnaires to selected respondents from selected companies in the Nigerian Breweries Industry with 250 of the them returned completed by the respondents. The data was subjected to regression analysis using the SPSS 23. The findings from the investigations revealed that physical risk control is essential in the management of corporate risks. The recommendations based on the findings from the analysed data are: that corporate entities should work out strategies that could assist them in adopting more efficient physical risk control techniques in their risk management approach; there is need for this industry to champion the creation of the awareness of the benefit physical risk control techniques to complement their approach in financial risk management for the overall holistic approach to corporate risk management; and finally, the sectoral regulators should also include physical risk management techniques *among the corporate risk management instead of allowing corporate entities to downplay it.*

Keywords *corporate entity, physical risk control, risk, risk management*

Introduction

Generally speaking, corporate risk management is a form of risk management that entails the management of risks pertaining to corporate bodies (Ray, 2017). It involves the processes of identifying, analysing and controlling those risks that could have negative impact of the sustainability or existence of the corporate bodies (Ray, 2017). In this way, there is the need for organisations to put in place some mechanisms that would enable them to effectively manage their risks' exposures.

In this way, the concern of this study will focus on those risks that could physically affect a corporate entity as against the financial risks which could also but are insurable. Thus, physical damages like accidental damage of machines, explosions, flooding etc would be the focus of physical control techniques. Since both large, medium and small enterprises are affected by such risks, the study will be extended to all these forms of organisations irrespective of their sizes but with much emphasis on the brewery industry (Purohit, Siddiqui, Nandan &Yadav, 2018)

At this juncture, it is important to note that in this modern time, not much emphasis is being given to physical risk control techniques as opposed toattitude given to financial risk control techniques. It is pertinent also to note that other forms or techniques such as financial risk control or enterprise risk management derive their bases from physical risk control technique. For without the establishment and installation of the physical risk control techniques, these other techniques may not function effectively.

The brewery like most other manufacturing industries use lot of machines that could require protections for organisational safety. Hence there is need for the use of this form of control in the management of the organisational risk exposures alongside other forms of risk management techniques. It is in view of this that this investigation is being carried out to find out the effectiveness of physical risk control techniques in the manufacturing sector of the economy.

The use of physical risk control in risk management entails the reduction/minimization of the risks' exposures of organisations. This is so, as it is difficult to have a total elimination of these risks' exposures. More so, experience has shown that it is easier to reduce/minimize the physical risk exposures faced by organisations than to totally eliminate them. For instance, most organisational operations are directly linked to these risks' exposures, which means that to eliminate the associated risks embedded in the operation, will mean the stoppage of the organisation as a whole.

In this way, risk managers have come to the conclusion that it is more effective to adopt risk reduction than to totally eliminate such risks. Moreover, there are challenges faced by corporate bodies in adopting physical risk control measures which could arise in form of cost or adopting a better method for such control.

Nevertheless, in the recent times, there has been more emphasis on the management of financial risks at the expense of physical control of risks by organisations. Hence, there is the need for a general investigation of the use of physical control in the management of organisational risks' exposures (Tamminen-Peter, Moilamen & Fagerstrom, 2010)

In this way, with much emphasis by corporate entities on financial risk control, can physical risk control techniques be eliminated or sustained especially in the manufacturing sector? Is it cost effective to use both physical and financial risk control techniques among corporate entities at the same time and to what extent should such be used by manufacturing concerns? This will entail the use of tools like fire extinguishers, burglary alarm, machine guards, CCTV, good housemanship, etc. in order to reduce organizational risk exposure.

The aim of the study is to analyse the impact of physical risk control in Risk Management using Nigerian Breweries Plc. and Guinness Nigerian Plc as case study. Physical risk control in the context of this study includes the use of tools like fire extinguishers, machine guards, good housemanship etc. for the purpose of reducing organisational risk exposures.

LITERATURE REVIEW

Conceptual Framework

Corporate bodies

According to Wages & Rehman (2016), the history of corporate entities is very old and its study shows that in earlier stages, corporate entities were not meant for the purpose of business and trading but were established in the Middle Ages of Europe, for religious institutions. These institutions got their authority through charters granted by local lords and kings. Charters were granted for the purpose to hold property. Wages and Rehman had argued that ability of institutions to hold property in their own name assumed that the property held by such institution is the sole property of that very institution and not of those individual or their legal heirs who control such institutions. Safety is at the centre of corporate risk management (Misch, 2015; Callor & Weldon 2014; Dawson 2014; Krause 2007).

This led to the creation of corporate persons or organizations. According to Islair (2012), the name of the corporation serves as a legally liable person who carries out the business activities. The persons involved in the corporation are known by the name of that corporation. This corporation will carry out different operations that could expose it to different forms of relief.

Risk Management Failures

Risk management failures at major corporations have captured the headlines for many years, primarily in the financial sector, but in other sectors as well, and have not always been the result of shortcomings in financial risk-taking (OECD, 2014). OECD had maintained that these failures were (at least) facilitated by corporate governance failures, where boards did not fully appreciate the risks that the companies were taking (if they were not engaging in reckless risk-taking themselves), and/or deficient risk management systems.

Physical Risk Control

On the other hand, risk control is the set of methods used by corporate entities to manage their risk exposures. This involves the identification of the potential risks factors in a company's operations, such as technical and non-technical aspects of business, financial policies and other issues that may affect the wellbeing of the firm. The risk control could also involve the implementation of proactive changes to reduce risk in these areas (Rout and Sikdar, 2017).

It is no longer acceptable for organisations to find themselves in a position whereby unexpected events cause financial loss, disruption to normal operations, damage to reputation and loss of market presence, stakeholders now expect that organisations will take full account of the risks that may cause disruption within operations, late delivery of projects or failure to deliver strategy (Hopkin,2018).

Finally, physical risk management control techniques, which entails the minimisation and elimination of risks, is essential for the management of corporate risks. This will entail the use of tools like fire extinguishers, machine guards, good housemanship, etc. in order to reduce organisational risk exposure.

Theoretical Framework

Risk plays crucial roles in survival and existence of corporate entities. As a result of this fact, the theory of risk is essential in understanding the essence of physical risk control in corporate risk management. Theory of risk, according to Parna (2016) was derived from the concept of risk as shown by the Arabic word risq which signifies "anything that has been **given** to you (by God) and from which you draw profit" and has connotations of fortuitous (random) favourable outcome. Parna also argued that the Latin risicum originally referred to the challenge that a barrier reef presents to a sailor and has connation of an equally fortuitous but unfavourably event. In this way, we can deduce that risk connotes either positive or negative occurrence. Scholars like Meulbroek (2002) and Nacco (2006) in identifying the importance of risk had posited that risk is an important element in business decision making. These scholars pointed out that in many corporations, risk management was earlier restricted to the purchasing of insurance in order to protect the business from accidental damage from specific undesirable events e.g., natural catastrophes, fire, fraud, etc. (Meulbroek, 2002, Nacco, 2006). The above notwithstanding the management of risks by corporate entities have been part of decision making of businesses over the years. The history of how organisations have effectively managed their risks' exposures could be traced to the 50's when Harry Markowitz's (1952) work on mean variance portfolio selection model gave birth of financial risk management. This seminal work was then followed that of Capital Asset Pricing Model by Sharpe (1964), Lintner (1965) and Mosson (1966) to compute risk associated with the return on investment in the security market.

As consequence, after a quick description of the current environment into which public and private organisations currently struggle, there is a need to proceed to develop a clear definition of risk. Thus, the fundamental elements that have marked the transition from the "silo" approach or compartmental perspective of risk management, to the integrated risk management approach is key in physical risk control (Spikin, 2013).

There was also that of Black-Scholes rational option pricing model which provided a new set of risk management literature under the discipline of financial economics. This evolution of the study of risk continued to the time of the development of financial risk management techniques e.g., hedging and securitisation (Miller 1992, Rawls & Smithson, 1989). While in the 1960s Stulz (1996) came up with the primary goal of risk management as Stulz (1996) through postulating that it "is to eliminate the probability of costly lower-tail outcomes – those that would cause financial distress or make a company unable to carry out its investment strategy." In this way there has been development of thoughts and theories on financial risk management over the years unlike that of physical risk management. The reason for this is not far-fetched as physical risk control has been there all the while with organisations and as such less emphasis is been paid to it.

Empirical Review

The fall of some corporate giants across the world made it necessary for the adoption of risk management in the operation of corporate entities. The essence of this study is to determine the sustainability of physical control technique in corporate risk management.

In the study of the impact of total risk management on company's performance, Mohammed and Knapkora (2016) found that the concept of risk management has gone beyond that of managing only the physical risk of corporate entities in order to control volatilities in earning which ultimately improve corporate performance. This study also revealed that there is a positive relationship between the total management of corporate, and not just the physical risk control and the organisations' performance (Mohammed &Knapkora, 2016).

Merna & Al-Thani (2010) asserted that physical risk control cannot sustain organisational survival these days as there is need for a comprehensive risk management to survive in today's market place. This is in line with the position of Yilmaz & Flouris (2010) emphasised that sustainability risk management process requires holistic and systematic integration of ecological, socioeconomic, and corporate risk in the business management. All these are pointing to the fact that physical risk control management will not be enough in today's risk management effort.

IJMSE ISSN-2041-1787 (Print)

In emphasising on the importance of physical risk control techniques, Peddada (2013) in her “risk assessment and control” argued that physical risk recognition and risk rating is crucial to risk management process. She maintained that the essence of physical risk control is paramount in determining the significant risk facing an organisation. Peddada then noted that in her investigation on corporate organisation, she found that all organisations adopt one form or the other of physical risk control in managing their operational risk exposures.

On the other hand, Meiryani (2018) in his investigation published as "the importance of risk management in the organisation” found that these are risks that are better handled through physical risk control techniques in organisational risk management process. And Peddada (2013), noted that such risk should be physical risk control technique. A good example of such risks could be all the low severity risks that are faced by the organisations in their operation.

Finally, according to Spikin (2015) physical risk control techniques form the foundation of operational risk management. The above reviews have shown that physical risk control technique should be the basis or rather the first step in corporate risk management in any organisation.

RESEARCH METHOD

Research Design

The Ex-post facto design was used for the investigation. This design assumed the form of an experimental design where an existing case is observed for some time in order to ‘study’ or ‘evaluate’ it (Asika, 1991; Crotty 1998 & Asenahabi, (2019). In this case, the study was on the impact of physical control in the management of corporate risks. The qualitative method was used in the analysis of the collected data through the administered copies of questionnaire and conducting interview.The population for the study is made up of the respondents drawn fromthe workforce of Nigerian breweries industry.

The sampling technique for the study included purposive sampling techniques, a sampling of the identified section of the sector. The selection of the sub-sector of the economy will enable the result to be reflective of what happens in the general economy with regard to the issues raised in the researched question.

Data Collection Method

The research instrument for the collection of data for the study was the questionnaire. The questionnaire was divided into two sections, with section A containing six questions which focused on the demographic variable including gender, age, highest educational qualification, official status in workplace, working experience in the industry, type of business and department\unit(quality control, production, administration and risk management departments); while section B contained a total of twelve questions and it is divided into three parts that relate to the research questions earlier stated. These questions were designed to reflect the aim of the study, as earlier stated. Data were randomly collected from the respondents in their respective offices.

The interview method was alsoused for the collection of additional data from a selectedrespondent so as to clarify some of the issues as pertaining to the research questions above.

The data collected were presented in a descriptive manner. The inferential statistics were used to discuss the results of the study which were presented based on the regression analysis table. The 250 questionnaires made the response rate to be 83.33% hence, satisfactory to draw conclusions from the gotten. According to Hidiroglon (2003), a response rate is good representative of the opinion of the whole sample if it is more than 70% of the administrated questionnaires. The data collected from the respondents were analysed using regression analysis based on SPSS 23 tools.

Data Analysis

Data collected were presented using frequency counts, percentages and tables. The data was analysed with the aid of Statistical Package for Social Science (SPSS) 23 and the tools employed descriptive statistics, and regression analysis was used for testing the hypothesis.

Analysis Based on Research Questions:

The purpose of this section is to determine the effectiveness of physical risk control within business organization in Nigeria. Hence this section addresses the research question 1 which asks:What is the effectiveness of physical risk control on corporate risk management in Nigeria?

The result is presented in table 4.1.

Effectiveness of physical risk control in corporate risk management within business organisations in Nigeria.

Table 4.1

S/N	Items Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Manufacturing companies adopted fully physical risk control	90(36%)	113(45%)	28(11%)	12(5%)	7(3%)
2	Physical risk control is the best form of risk control for corporate bodies	79(32%)	127(51%)	20(8%)	9(4%)	15(6%)
3	Physical risk control should be sustained by corporate bodies	112(45%)	67(27%)	27(11%)	31(12%)	13(5%)
4	The advantages of using physical risk control outweighed the disadvantages	95(38%)	92(37%)	37(15%)	15(6%)	11(4%)

Source: Field survey, 2021

Table 4.1 indicate that 81% of the respondents agreed that Manufacturing companies fully adopt physical risk control, 11% of the respondents are undecided while the remaining 8% of the respondents disagree with this statement. 82% of the respondents agreed that Physical risk control is the best form of risk control for corporate bodies, 8% of these respondents were undecided about this statement while the remaining 4% disagree. Also, 62% of the respondents agreed that Physical risk control should be sustained by corporate bodies, 11% of the respondents were undecided while the remaining 18% disagreed on this statement. Finally, 75% agreed that the advantages of using physical risk control outweighed the disadvantages, 15% were undecided while the remaining 10% of the respondents disagree with this statement. This strongly suggests that the extent of physical risk control on corporate risk management is high in Nigeria as far as this study is concern.

Analysis of the cost of effective adopting physical risk control

The purpose of this section is to examine the cost effect of adopting physical risk control within business organization in Nigeria. Hence this section addressed the research questions 2 which asks: ‘‘What is the cost effect of adopting physical risk control on corporate risk management in Nigeria?’’ The result is presented in table 4.2

Cost effectiveness of physical risk control in corporate risk management within business organisations.

Table 4.2

S/N	Items Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	The cost of using physical control risk is very high	102(41%)	52(21%)	45(18%)	21(8%)	30(12%)
2	It is more cost effective to use physical risk control than financial risk control	78(31%)	57(23%)	34(14%)	48(19%)	33(13%)
3	The advantages derived from physical risk control outweighs the cost	97(39%)	52(21%)	27(11%)	46(18%)	28(11%)
4	The cost of physical control is insignificant to the total costs of corporate entities	76(30%)	98(39%)	12(5%)	44(18%)	20(8%)

Source: Field survey, 2021

Table 4.2 indicates that 62% of the respondents agree that the cost of using physical control risk is very high in Nigeria, 18% of the respondents are undecided while the remaining 20% of the respondents disagree on this statement. 54% of the respondents agree that It is more cost effective to use physical risk control than financial risk control, 14% are undecided on this statement while the remaining 32% of the respondents disagree. Also, 60% of the respondents agree that the advantages derived from physical risk control out wages the cost, 11% undecided about this statement while the remaining 30% of the respondents are undecided. Finally, 70% of the respondents agree that the cost of physical control is insignificant to the total costs of corporate entities, 4 of the respondents are undecided while the remaining 26% disagree on this statement. This implies that the cost effect of adopting physical risk control in corporate risks management is high which means that the cost effect in adopting physical risk control in corporate risks management is high in Nigeria as far as this study is concern.

To assess physical risk control in complimenting financial risk control

The purpose of this section is to assess physical risk control in complimenting financial risk control within business organisations in Nigeria. Hence this section addressed the research question 3 which states that:To what extent is physical risk control used in complimenting financial risk control in business organisations in Nigeria? The result is presented in table 4.3

Roles of physical risk control in complimenting financial risk control in business organisations in Nigeria

Table 4.3

S/N	Items Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Corporate bodies should use both physical and financial controls	114(46%)	23(9%)	22(9%)	34(14%)	57(23%)
2	Physical control is used to compliment that of financial control	79(32%)	58(23%)	34(14%)	56(22%)	23(9%)

Source: Field survey, 2021

Table 4.3 shows that 46%of the respondents strongly agreed that physical risk control compliments financial risk control in business organisations in Nigeria. 9%agreed; 9% were undecided; 14% disagreed and 23% strongly disagreed that physical risk control compliment financial risk control within business organisations.

IJMSE ISSN-2041-1787 (Print)

The result therefore indicated that 55% of the respondents agreed(including strongly agreed and agreed responses) that corporate bodies should use both physical and financial controls in corporate risk management; 9% were undecided on this statement while the remaining 36% of the respondent disagree (including strongly disagree and disagree) In addition, 55% of the respondents agree that physical control is used to compliment that of financial control, 14% undecided, while the remaining 32% of the respondents disagree on this statement. This implies that the physical risk control is better used to compliment financial risk control techniques to manage corporate risks in Nigeria as far as this study is concern.

Benefits of using physical risk control

The purpose of this section is to find out the benefits of using physical risk control within business organisation in Nigeria. Hence this section addressed the research questions 4 which states:The benefits of using physical risk control in business organisations in Nigeria? The result is presented in table 4.4

Physical risk control is beneficial to business organisations in Nigeria

Table 4.4

S/N	Items Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	It helps organization to minimise or eliminate misfortunes from physical threats that could affect the survival of the organization.	128(51%	42(17%)	35(14%)	31(12%)	14(6%)
2	It complements the benefits of other techniques like financial risk to function appropriately.	87(35%)	75(30%)	24(10%)	35(14%)	29(12%)
3	It helps organizations to manage their operational risk exposures effectively.	79(39%)	82(21%)	17(11%)	48(18%)	24(11%)
4	Physical risk control ensures safety of employees.	67(27%)	89(36%)	21(8%)	53(21%)	20(8%)

Source: Field survey, 2021

Table 4.4 indicates that 68% of the respondents agree that physical risk control helps organization to minimise or eliminate misfortunes from physical threats that could affect the survival of the organization, 14% of the respondents are undecided while the remaining 18% disagree on this statement. 65% of the respondents agree that physical risk controlcomplements the benefits of other techniques like financial risk to function appropriately, 10% of the respondents are undecided while the remaining 26% of the respondents disagree on this statement. Moreover, 60% of the respondents agree that physical risk control helps organizations to manage their operational risk exposures, 11% of these same respondents are undecided while the remaining 30% disagree with this statement. Finally, 62% of the respondents agree that with physical risk control ensures the safety of the employees, 8% undecided while the remaining 30% of the respondents disagree with this statement. This implies that the physical risk control benefits corporate organization as far as this study is concern.

Hypotheses Testing

Hypothesis 1 Testing

H_0: Physical risk control does not have effective impact on corporate risk management.

Simple regression analysis of the impact ofphysical risk control on corporate risk management in Nigeria
Table 4.5

Variable	B	S.E	t-statistic	P
PHYSICAL RISK CONTROL	0.5562	0.0379	14.6754	0.0003
C	0.9674	0.0548	17.6527	0.0000
R^2 = 0.6180; Adj R^2 = 0.0554; D W = 0.2328				

Source: *Field survey, 2021*

Regression model developed based on the result is:

Corporate risk management = 0.9674 + 0.5562*Physical risk control

This implies that a unit increase inphysical risk management will increase corporate risk management by 0.5562 and significant since p-value < 0.05, we therefore reject H_0. This implies that physical risk control has strong effective impact on corporate risk management in Nigeria.The R^2 = 0.618, which implies that physical risk management accounts for 61.8% of the corporate risk management in Nigeria.

Hypothesis 2

H_0: Physical risk control does not compliment financial risk control within business organisations in Nigeria.

Simple regression analysis of the impact offinancial risk control on corporate risk management in Nigeria

Table 4.6

Variable	B	S.E	t-statistic	P
PHYSICAL RISK CONTROL	0.0443	0.0049	8.9949	0.0000
C	0.6442	0.0363	17.7328	0.0000
R^2 = 0.8180; Adj R^2 = 0.8079; D W = 1.329				

Source:*Field survey, 2021*

The simple regression model developed based on the result is:

Corporate risk management= 0.6442 + 0.0443*Financial risk techniques

This implies that a unit increase in financial risk control will increasecorporate risk management by 0.043 and significant since p-value < 0.05, we therefore reject H_0. This is an indication that physical risk control is a good compliment with financial risk techniques for corporate risk management in Nigeria.The R^2 = 0.8180, which implies that financial risk control accounts for 81.8% of corporate risk managementin Nigeria.

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of findings

The data was analysed with the aid of Statistical Package for Social Science (SPSS) 23 and the tools employed were descriptive statistics and regression analysis for testing the hypothesis. The summary of the findings based on the analysed data are:

i. On the extent of the adoption of physical risk control by corporate entities in Nigeria, the respondents agreed that manufacturing companies in Nigeria do fully adopt physical risk control in their operations. The use of physical risk control according to them is the best form of risk management in the manufacturing sector and that manufacturing companies should sustain their use of this form of risk management in their operations.

ii. Regarding the cost of adopting physical risk control, the respondents generally agreed that the cost of using physical risk control in manufacturing is not too high in Nigeria and that it is cost effective than financial risk control. Also, that the advantages derivable from the use of physical risk control outweighs the cost. More so, that the cost of physical risk control is insignificant to the total costs of corporate risk management.

iii. The general consensus is that physical risk control is used as a complement to financial risk management in corporate risk management.

iv. These findings confirmed the position of the stated hypotheses that physical risk impact positively in business organisation in Nigeria. This means physical risk control is crucial in the management of corporate risks in Nigeria.

Conclusions

The findings indicate that physical risk control mechanism as a risk management tool is not highly sustained in the management of corporate risks in Nigeria. Also, that the cost of adopting physical risk control mechanism by corporate entities is low and should be encouraged and sustained. The above is in line with the position of Rout and Sikdar ((2017) risk control should involve the implementation of proactive changes to reduce the risk exposures of most corporate entities. This is equally applicable in Nigeria. Therefore, corporate entities should not only pay emphasis on financial risks control mechanism but should also do the same to the use of physical risk control mechanisms in the management of their risks. In view of the above. it is evident that most corporate entities in Nigeria still show low perception in the physical risk control measures, hence they buy insurance to protect the outcome of such occurrences.

Recommendations

i. Corporate entities should work out strategies that will assist them in adopting more efficient physical risk control techniques in their overall risk management approach;

ii. There is need for the creation of awareness in corporate entities on the need to effectively use physical risk control alongside financial risk control in their overall risk management;

iii. The sectoral regulators of the different industries in the economy should embed physical risk control as part of the requirement for the holistic management of corporate risks by corporate entities.

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