
EFFECT OF ENVIRONMENTAL RISK, REPUTATIONAL RISK, AND LEGAL RISK ON THE PERFORMANCE OF MANUFACTURING COMPANIES

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ABSTRACT: *The continuous collapse of manufacturing companies due to poor management of risks such as environmental risk, reputational risk and legal risk. This calls for urgent attention of researchers. This paper considered the effect of environmental risk, reputational risk, and legal risk, on the performance of manufacturing companies. The researcher employed an exploratory research design. Logit Binary regression model was employed to test the hypotheses of the study. This model is considered appropriate because it has the ability to predict the effect of independent variables on the dependent variables. This study revealed that Environmental Risk; Reputational Risk; and Legal Risk has negative significant effect on the performance of manufacturing companies. This study recommended that management of manufacturing companies should pay greater attention to their Environmental Risk; Reputational Risk; and Legal Risk, by ensuring that such risks are properly managed with the aid of Enterprise Risk Management Tools and by providing actionable insights into their entire organisation. The manufacturing companies should endeavour to identify, analyse and evaluate Environmental Risk; Reputational Risk; and Legal Risk with Optimised Heat Maps and Charts and try to avoid or eliminate such risks.*

KEYWORDS: environmental risk; reputational risk; legal risk, performance of manufacturing companies

INTRODUCTION

Manufacturing industry in Nigeria has been reported to be negligent and not sensitive to the environments where they operate. This poor attention of manufacturing companies to their environments often results into environmental risks, and therefore affects their reputations and eventually leads to legal obligations. Industries around the world are exposed to several risks including environmental risk, reputational risk, and legal risk, and this goes a long way to affect their performances (AliBaba & VazirZanjani, 2021). Risk is the probability of occurrence of an adverse event. Risk refers to the uncertainty that surrounds forthcoming events and outcomes. It is the expression of the likelihood and impact of an event with the potential to affect the achievement of an organization's goals (Bhimani, 2020). Risk can be seen as a state where there is a likelihood of a loss but also a hope of gain (Boekestein, 2021). The term risk

can also be defined and elucidated in many different ways depending on the aim and perspective of a discussion. Chapman and Ward (2021) stated that a risk is a doubt joint with damage or a loss. They mean that something that is indeterminate does not have to incur a risk; however, if an event is considered as both indeterminate and a loss is included, it can be defined as a risk. Essinger and Rosen (2021) defines as “The potential for realization of unwelcome, adverse consequences to human life, health, property, or the environment”. Since one would never jeopardize the loss if there were no chance of a win. To realize the existence of a risk, one must be aware of both the gains and losses incurred and therefore a risk can be reflected as individual and relative to the observer (Francis & Armstrong, 2019). All these definitions seek to make known that risk is to be seen as part of daily life, and the presence of risk in any environment should not be a problem but the focus should be on how those risks are being managed and in turn minimizing their potential effect.

Risk management on the other hand deals with the process of identifying and controlling potential risks that can be faced by an organization. Risk management is about identifying the risk to be managed, risk to leave unattended and risk that need to be hedged. Risk management is recognized in today's business world as an integral part of good management practice. In its broadest sense, it entails the systematic use of management policies, procedures and practices to the tasks of identifying, analysing, assessing, treating and monitoring risk. Risk management refers to a practice of identifying loss exposures faced by an organization and selecting the most appropriate procedures for treating these particular spotlights effectively (Gordon, Loeb, & Tseng, 2019). Risk management is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to mitigate, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities (Gupta, 2018).

Effective risk management can bring far payoffs to the company irrespective of what type it is. These paybacks include, superior financial performance, better basis for strategy setting, improved service delivery, better competitive advantage, less time spent firefighting and fewer unwanted surprises, increased likelihood of change initiative being achieved, closer internal focus on doing the right things properly, more efficient use of resources, reduced waste and fraud, and better value for money, improved innovation and better management of contingent and maintenance activities (Gupta, 2018). Risk management in manufacturing sector is about the categories and types of risks that can be opened to companies in the manufacturing industries and the approach which the companies adopt in managing those risks. The ways and manners which companies adopt in managing their risks can have either of positive or negative effect on their performance. Here are some of the risks that manufacturing companies can be exposed to; environmental risk, reputational risk, and legal risk.

Some factors that may cause companies to face various unpredictable risks are environmental complexity (Hoyt & Liebenberg, 2020), intense competition, advanced technology, development of information and communication technology, new methods of supplying goods and services, environmental issues and companies' movement from tangible to intangible assets. As a result, companies are faced with several risk management issues including

enterprise risk management, business risk management and strategic risk management (Luo, 2017).

Currently, risk management is regarded as one of the most important concerns of executives and the risk management activities are expanding. However, regarding the peripheral effects and applications of risk management, few empirical researches have been done up until now (2021). In other words, despite rapid growth in importance of the topic, few applied studies have been done to determine whether environmental risk, reputational risk, and legal risk has practically desirable effects on the firm's performance. On the other hand, due to the conceptual complexities of risk management and variation in methods of controlling adverse effects of losses, the previous few attempts that have been made failed to offer a comprehensive and integrated framework. Risk management has several advantages. It inspires strong stimulus in company's major stockholders to increase their investments in the company. By increasing their investments such investors invest in company's specific assets. These assets are regarded as tools that provide better business opportunities toward obtaining proper and long-lasting competitive advantage. Therefore, it is concluded that lack of effective environmental risk, reputational risk, and legal risk management may lead to imposition of extra costs on both investor and investee and thereafter affects their performances.

Research Objectives

The main objective of this paper is to determine how management of environmental risk, reputational risk, and legal risk affects the performance of manufacturing companies in Nigeria. The specific objectives are to:

1. Ascertain the extent to which environmental risk affects the performance of manufacturing industry.
2. Determine how reputational risk affect the performance of manufacturing industry.
3. Examine the extent to which legal risk affect the performance of manufacturing industry

LITERATURE REVIEW

Risk

In finance, risk is the probability that actual results will differ from expected results. In the Capital Asset Pricing Model (CAPM), risk is defined as the volatility of returns. The concept of "risk and return" is that riskier assets should have higher expected returns to compensate investors for the higher volatility (Mua, GangPengb, & Douglas, 2019).

Types of Risk

According to ParvizRad (2012), there are two main categories of risk: systematic and unsystematic. Systematic risk is the market uncertainty of an investment, meaning that it represents external factors that impact all (or many) companies in an industry or group. Unsystematic risk represents the asset-specific uncertainties that can affect the performance of an investment.

Below is a list of the most important types of risk for a financial analyst to consider when evaluating investment opportunities:

Systematic Risk – The overall impact of the market. Systematic risk refers to the risk inherent to the entire market or market segment. Systematic risk, also known as “undiversifiable risk,” “volatility” or “market risk,” affects the overall market, not just a particular stock or industry. This type of risk is both unpredictable and impossible to completely avoid. It cannot be mitigated through diversification, only through hedging or by using the correct asset allocation strategy.

Systematic risk underlies other investment risks, such as industry risk. If an investor has placed too much emphasis on cybersecurity stocks, for example, it is possible to diversify by investing in a range of stocks in other sectors, such as healthcare and infrastructure. Systematic risk, however, incorporates interest rate changes, inflation, recessions, and wars, among other major changes. Shifts in these domains can affect the entire market and cannot be mitigated by changing positions within a portfolio of public equities.

Unsystematic Risk – Asset-specific or company-specific uncertainty. Unsystematic risk is unique to a specific company or industry. Also known as “non-systematic risk,” “specific risk,” “diversifiable risk” or “residual risk,” in the context of an investment portfolio, unsystematic risk can be reduced through diversification. This can be contrasted with systematic risk, which is inherent in the market (Tehran & Wang, 2019).

Unsystematic risk can be described as the uncertainty inherent in a company or industry investment. Types of unsystematic risk include a new competitor in the marketplace with the potential to take significant market share from the company invested in, a regulatory change (which could drive down company sales), a shift in management, and/or a product recall.

While investors may be able to anticipate some sources of unsystematic risk, it is impossible to be aware all or when/how these might occur. For example, an investor in healthcare stocks may be aware that a major shift in health policy is on the horizon, yet she/he cannot know in advance the particulars of the new laws and how companies and consumers will respond. The gradual adoption and then potential repeal of the *Affordable Care Act*, first written into law in 2010, has made it very challenging for some investors in healthcare stocks to anticipate and place confident bets on the direction of the industry and/or specific companies (White & Frame, 2014).

Environmental Risk

Environmental Risk can be defined as the “actual or potential threat of adverse effects on living organisms and the environment by effluents, emissions, wastes, resource depletion, etc., arising out of an organization's activities.” Environmental exposures, whether physical, chemical, or biological (Woods, 2016).

The risk that a certain business venture or activity will cause destruction to the surrounding natural environment. For example, if oil reserves were discovered in a national park, there would be the environmental risk that exploiting the reserves might harm or destroy some of the park's wildlife. While environmental risk implies some moral or at least reputational risk, it also carries economic consequences. A company with environmental risk often has to pay fees for exemptions from certain policies, and it is usually responsible for cleaning up the environment in case it causes a slow or sudden disaster (Shiller, 2021).

Environmental Risk Management

Environmental risk management (ERM) helps to ensure that environmental risk is contained to acceptable levels, and ideally should be applied to all aspects of a mining operation in a structured process to ensure that all relevant issues are addressed. Criteria and objectives for risk assessment should be established during the planning stage. Results of monitoring should be fed into the risk assessment process to identify and reduce emerging problems as soon as possible. As ERM encompasses the entire mine project, multiple skills are needed and sufficient resources must be made available to do the job effectively. The results of the risk analysis must be communicated effectively through the cloud system, and risk management recommendations should be implemented promptly for the ERM process to succeed (Maginn, Tuttle, McLeavey, & Pinto, 2017).

Reputational Risk

reputational risk refers to the potential for negative publicity, public perception or uncontrollable events to have an adverse impact on a company's reputation, thereby affecting its revenue. Reputational risk strikes without warning and shifts your corporate landscape. Even worse, it injects an unfavourable narrative into your search results which affects customer opinions and impacts revenue. There are countless statistics about online reputation that support this conclusion. We commissioned a study by Forrester Consulting to find out what executives at large brands think about SEO and reputation (Elosegui, 2003).

Reputational risk can also arise from the actions of errant employees, such as egregious fraud or massive trading losses disclosed by some of the world's biggest financial institutions. In an increasingly globalized environment, reputational risk can arise even in a peripheral region far away from home base (Andersen, 2017). In some instances, reputational risk can be mitigated through prompt damage control measures, which is essential in this age of instant communication and social media networks. In other instances, this risk can be more insidious and last for years. For example, gas and oil companies have been increasingly targeted by activists because of the perceived damage to the environment caused by their extraction activities (Baldwin & Li, 2012).

Reputation risk is evolving. It's a strategic concern because it is connected to and magnified by other business risks. According to a recent DTTL survey, Reputational Risk, the most prevalent drivers of reputation risk are risks related to ethics and integrity, physical and cyber security, and products and services. Third-party relationship risk is also rapidly emerging, as companies are increasingly being held accountable for the actions of vendors, brokers, and similar associates. So as those risks proliferate, reputation risk heightens as well. Reputation

risk keeps business leaders up at night because it's a meta risk. It can originate and spread from inside and outside the organization, at an alarming speed. The executives interviewed in the global survey expressed the inherent challenges in this situation. For example, perceptions can vary from geography to geography, so an issue or event may not pose a threat in one locale, but may trigger a worldwide media frenzy in another with very real consequence to reputation(Jovanovic, 2015).

Adding to the concern is that some of these risks are beyond the company's direct control. Respondents to the survey were less confident about managing risks from third-party/extended enterprise issues, competitive attacks, and hazards or other catastrophes than about managing risks they can control internally, such as those related to regulatory compliance or employee misconduct.

Legal Risk

Legal risk is the likelihood of financial or reputational loss resulting from a lack of knowledge (or misunderstanding) of how the law applies to your business, or operating with a reckless indifference to the law and how it applies(Mas-Colell, Whinston, & Green, 2019).Legal risk was defined as part of operational risk by the Basel II accord in 2003. It includes the risk of financial or reputational loss resulting from any type of legal issue. This could include a lack of awareness or misunderstanding of the way laws and regulations apply to a business. But companies can take action to reduce this risk. So, for example, a corporation may require all its employees to undergo health and safety training in order to reduce its legal risk from compensation claims (Den & Haan, 2019).

One of the primary reasons why legal risk is associated with operational risk involves fraud since it is recognized as the most significant category of operational loss events and considered to be a legal issue as well.^[2] These, however, do not mean that legal risk is only confined to this conceptualization because it is defined in more than way. For instance, there are specific sets of legal risks that are defined by the European Union (EU) Law. In 2005, the European Central Manufacturing companies declared that it will develop its own legal risk definition to help "facilitate proper risk assessment and risk management, as well as ensure a consistent approach between EU credit institutions (Krusell & Smith, 2018).

Risk Management and Performance of Manufacturing Companies

Adebisi (2021) investigate the connection of ethics to risk management. They argue that there are compelling reasons for good ethical practice to be an essential part of risk management. They discuss that exploring the relationship of ethics and risk management has significant commercial outcomes. Not only those outcomes help to identify potential problems, but they also help preventing fraud, preserving corporate reputation, and to mitigate litigation against company which lead to increased legitimacy. Likewise, Bhimani (2021) say that risk management leads to higher corporate legitimacy.

Using a sample of Chinese firms, Mua (2021) examine the effect of risk management strategy over performance of new product development. They find that risk management strategies that

focus on technological, organizational, and marketing factors, individually and interactively improve the performance of new product development.

Gordon and Ken (2020) examine the relation of enterprise risk management (ERM) and performance. They argue that the relation of enterprise risk management and performance is contingent upon five firm-specific factors namely, environmental uncertainty, industry competition, firm complexity, firm size, and board of directors' monitoring. Finally, they argue that for implementing ERM firms should pay attention to the contextual variables that are surrounding the firm.

Andersen (2020) examines the firm-specific investment rationale as a plausible explanation for positive risk management effects. As a consequence of the firm-specific investment rationale he finds that effective risk management outcomes are associated with superior corporate performance. Further he indicates that firms that vary in levels of intellectual capital and investment in innovation also differ in their risk management effects.

Likewise, Gupta (2021) examines the risk management in Indian companies and explore the reasons for the adoption or lack of adoption of integrated approach to risk management. He shows that even though effective risk management can improve organizational performance, companies do not have adequate infrastructure to implement enterprise-wide risk management. He concludes that a sea change in risk perception is required to build up risk culture across business segments and incentivize risk management adoption.

Risk management is an effective technique for minimizing undesirable effects of risks and optimizing the benefits of risky situations (Cohen & Kaimenakis, 2017). Manuel (2018) describes the aim of risk management as process enhancement that is established through systematic identification, evaluation and mitigation of project risks. According to these definitions risk management is defined as measures that are taken to decrease the potential risky consequences of specific phenomenon namely price variation, accidents, political hazards, disruption in supply of raw material, economic development, etc. Such risks represent a wide spectrum of company's risks that are dealt with by various specialists. In other word, effective risk management deals with market risks that the company is facing and tries to take advantage of business opportunities that these risks might have. It is an effective tool of contending with external market threats that are out of management control and result in reduction of profit variances (Milost, 2017).

The tools and facilities that management uses to face external market threats are financial hedging, insurance contracts, management controls systems, transportation of resources and careful decisions that are made to improve company's profitability. All of the aforementioned movements are made to reduce adversity of situations that the company might face with. To cover environmental risk, reputational risk and legal risk, companies do risk management through derivatives via using insurance coverage and through examining integrative risk management approaches. In addition, in comparison with past risk management motivations, and historical financial obligations, there is higher tendency to risk management now. Indeed,

it is obvious that company's accountability depends to its ability to utilize the new opportunities that are derived from changes in environment (Boekestein, 2021).

METHODOLOGY

The researcher employed an exploratory research design. The population of this study is Three Hundred and Five (305) senior staff of Ten (10) manufacturing companies in Ikeja Metropolis of Lagos state. A designed questionnaire was the major instrument of data collection in this regard. This enabled the respondents to actively participate in the study due to the simple design and format of the questionnaires. This instrument was adequately subjected to reliability and validity test.

The sampling techniques adopted in this research Simple Random Sample (SRS) which is aimed at giving every customer of manufacturing companies of the north an equal chance of being selected. For the purpose of this study, Taro Yamane was employed to determine the sample size.

$$ss = \frac{N}{(1 + N(e)^2)}$$

$$ss = \frac{305}{(1 + 305(0.05)^2)}$$

$$ss = 171.$$

The sample size for this study is the 171 staff determined using Taro Yamane formula.

Reliability of the Research Instruments

The data collected for this study was coded and enter into SPSS 25.0 and was subjected to a reliability test. The reliability test result is show in the table 1.

Table 1: Reliability Test Result

Reliability Statistics

Cronbach's Alpha	N of Items
.721	171

Source: SPSS 25.0 OUTPUT

The result of the reliability test in table 1 shows that Cronbach Alpha for all the items in the questionnaire is reliable. This means that the questionnaire is reliable enough for further research.

Table 2: Kaiser-Meyer-Olkin (KMO) and Barlett's test of Sphericity
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.741
Approx. Chi-Square		3241.144
Bartlett's Test of Sphericity	Df	171
	Sig.	.000

Source: SPSS 25.0 output

This study conducted the KMO and Barlett's test of Sphericity. The KMO measures the sampling adequacy (which determines if the responses given with the sample are adequate or not) which should be close than 0.5 for a satisfactory factor analysis to proceed. Kaiser (1974) recommend 0.5 (value for KMO) as minimum (barely accepted), values between 0.7-0.8 acceptable, and values above 0.9 are superb. The table 4 shows that the value of KMO measure for the questionnaire is .6151 which is greater than 0.5 and therefore accepted that the sample was adequate.

Bartlett's test is another indication of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. An identity matrix is matrix in which all of the diagonal elements are 1 and all off diagonal elements (term explained above) are close to 0. From table 2, the Bartlett's Test of Sphericity is significant (0.001). That is, significance is less than 0.05. This means that correlation matrix is not an identity matrix.

METHOD OF DATA ANALYSIS

Logit Binary regression model was employed to test the hypotheses of the study. This model is considered appropriate because it has the ability to predict the effect of independent variables on the dependent variables.

Formula for Logit Binary regression model:

$$L = \ln \left[\frac{P_i}{1 - P_i} \right] = \beta_0 X_i$$

Where:

L = Logit Regression

ln = Log

P_i = Environmental Risk, Reputational Risk, Legal Risk,

1 – P_i = Environmental Risk, Reputational Risk, Legal Risk,

β = Beta

X = Performance of Manufacturing Companies.

Statistical Package for Social Sciences Software (SPSS) version 25 was used for the data analysis.

Data Presentation, Analysis and Interpretation

Questionnaire was administered to the staff of the Manufacturing companies in Ikeja Metropolis, out of the 171 questionnaires that was administered, 151 copies were filled

correctly and returned. The study collected information on demographic characteristics. Detailed results on each of the demographic characteristics are presented.

Data Analysis

For the purpose of this research work and in line with the research questions, hypotheses were raised stating.

Table 3 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	-44.124 ^a	.887	.754

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Source: SPSS 25 Output

Table 4 Variables in the Equation

B		S.E.	Wald	df	Sig.	Exp(B)
Environmental Risk	-4.141	3.212	2.211	4	.007	55.111
Reputational Risk	-5.141	3.221	3.321	4	.001	12.214
Legal Risk	-6.251	2.011	6.341	4	.000	1.214
Constant	5.141	22.117	5.141	4	.001	2.321

a. Variable(s) entered on step 1

Source: SPSS 25 Output

Table 3 shows that there is about 89% correlation between the performance of Environmental Risk, Reputation Risk, Legal Risk and the performance of manufacturing companies. This implies that poor management of these risk has about 89% chances of affecting the performance of manufacturing companies either positively or otherwise. This is also confirmed by the Nagelkerke R Square value of 75%.

Table 4 revealed that Environmental Risk; Reputational Risk; and Legal Risk has negative significant effect on the performance of manufacturing companies. Consequently, the Beta value of -4.141 (as shown in Table 4) simply mean that Environmental Risk account for a unit effect of -4.141, Reputational Risk has a unit effect of -5.141, Legal Risk account for a negative effect of -6.251. The p-value (.007, .001, .000, and .001) is less than the significant level of 0.05. The result in the Table 4 shows that the p-value is less than the level of significance of 0.05. Therefore, Environmental Risk; Reputational Risk; and Legal Risk has negative significant effect on the performance of manufacturing companies.

CONCLUSION

Poor management of Environmental Risk, Reputational Risk, and Legal Risk could result into total collapse of manufacturing industry. This study concluded that Environmental Risk; Reputational Risk; and Legal Risk has negative significant effect on the performance of manufacturing companies.

Recommendations

Management of manufacturing companies should pay greater attention to their Environmental Risk; Reputational Risk; and Legal Risk, by ensuring that such risks are properly managed with the aid of Enterprise Risk Management Tools and by providing actionable insights into their entire organisation with Data-Driven Decision Making. The manufacturing companies should endeavour to identify, analyse and evaluate Environmental Risk; Reputational Risk; and Legal Risk with Optimised Heat Maps and Charts and try to avoid or eliminate such risks.

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