Original Research Article

Impact of Corporate Diversification on Sustainability of Listed Health Care Firms in Nigeria

Abstract

This study was carried out to examine the impact of corporate diversification on sustainability of health care firms in Nigeria. In order to determine the relationship between corporate diversification and organizational sustainability, corporate diversification was proxy using geographical diversification (GEODIV), operational diversification (OPDIV) & product diversification (PRODIV) while sustainability on the other hand was measured using Kinder Lydenberg Domini **(***KLD) social-environmental performance rating system. The study adopted Ex Post Facto Design and data were collected from the annual reports and accounts of the listed health care firms in Nigeria for the period ended 2016-2020. OLS model was used in the data analysis and the findings of the study indicate that geographical diversification, operational diversification & product diversification have significant and positive effect on firms' sustainability at 1% significant level. Thus, the study concludes that corporate diversification ensures organizational sustainability in Nigeria. In lieu of this, the study recommended that corporate organizations should engage on diversification (GEODIV, OPDIV & PRODIV) as it ensures organizational sustainability. Hence, the need for proper management of diversification decisions as excessive diversification can lead to a decrease in firms' financial performance.*

Keyword: Geographical Diversification, Operational Diversification, Product Diversification, Sustainability.

1.0 Introduction

The study on corporate diversification has long attracted the interest and attention of strategic management scholars and is one of the most frequently researched areas of business especially in the developed nations (Sajid, Shujahat & Tahir, 2016; Rashid, Ahmed & Muhammad, 2019).

Diversification strategy is an important component of strategic management of a firm, and the relationship between a firm's diversification strategy and its economic performance is an issue of considerable interest to managers and academicians (Kotler & Armstrong, 2008). Apart from the fact that the various attempts to demonstrate the effects of diversification on performance of firms are inconclusive because of the conflicting evidence emerging from such studies, most of the investigations carried out so far are based on the experiences of companies in industrialized economies. The impact of diversification on the performance of firms in other institutional environments especially the less developed economies has not received much attention thus limiting the generalizability of findings and the development of a global theory of diversification.

The extent to which firms in the less developed countries are using the diversification option, the nature of the diversification strategy they are pursuing and the extent to which such diversification moves help to improve the firms' financial performance and growth are not yet explored extensively. With particular reference to Nigeria, many firms operating in different sectors of the country's economy have sought to diversify their product-market portfolios in an effort to spread the risks of their businesses, improve their performance and cope with the hardship and challenges of competing in a transition and deregulated economy (Oyedijo, 2012). The outcomes of such diversification moves remain to be tested and examined empirically especially in the Health Care Sector of Nigerian Exchange Group (NGX) where no specific study had concentrated in considering the relation which subsists between corporate diversification and organizational sustainability.

Existing literature on corporate diversification predominantly focuses on developed markets (Ammann, Hoechle & Schmid, 2012; Sajid, Shujahat & Tahir, 2016; Rashid, Ahmed & Muhammad, 2019) and to a lesser extent on developing markets (Ndung, Kibati & Stella, 2019; Jasper, 2016, Doaei, Ahmad & Ismail, 2014). Also studies that have explored on the subject of diversification and financial performance in Nigeria are seen to be very limited, and none concentrated on diversification and sustainability especially on Health Care Sector of Nigerian Exchange Group (NGX). Hence, the need for the study to examine the impact of corporate diversification on sustainability of Health Care firms in Nigeria.

To achieve this purpose, the following hypotheses were formulated:

H_{01}: Geographical Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

H_{02}: Operational Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

H_{03}: Product Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

2.0 Review of Related Literature

2.1.1 Corporate Diversification

Ozigbo and Daniel (2020) conceded that diversification is not a simple strategy as it involves decisions on the type (related and unrelated) and degree (low, moderate, or high) of diversification. Corporate diversification refers to a firm's strategy of entering and competing in new product markets. Diversification allows firms to maximize value by enhancing the scope of markets and industries in which they compete and supply product offerings to newer customers (Purkayastha, Manolova, & Edelman, 2012). Diversification is not a simple strategy. It involves decisions on the type (related and unrelated) and degree (low, moderate, or high) of diversification (Ozigbo & Daniel, 2020).

According to Ravichandran and Bhaduri (2015), corporate diversification is decomposed into three categories namely; concentric diversification where a business entity diversifies into an industry which is technologically similar to the line of operation it is currently undertaking, horizontal diversification where the entity manufactures new products which still have appeal to its current customers and conglomerate diversification through mergers and acquisition where the entity enters into an entirely new market and industry with the intention of attracting new customers hence improving financial performance.

2.1.1.1 Geographical Diversification

According to Chia-Wen and Heng-Yin (2008), geographical diversification has often been viewed as an essential vehicle for growth and improved performance. Geographical diversification is also used to secure the supply of intermediates by internalising these functions, thus avoiding random fluctuations in these markets that are common in developing countries.

2.1.1.2 Operational Diversification

Operational diversification strategies are used to expand firms' operations by adding markets, products, services, or stages of production to the existing business. The purpose of operational diversification is to allow the company to enter lines of business that are different from current operations (Odunayo, Stephen & Mabutho, 2017).

2.1.1.3 Product Diversification

Product diversification is the practice of expanding the original market for a product. This strategy is used to increase the sales associated with an existing product line, which is especially useful for a business that has been experiencing stagnation or declining sales (Nwakobi & Ihediwa, 2018). Product diversification is also viewed as a strategy employed by a company to increase profitability and achieve higher sales volume from new products.

2.1.2 Organizational Sustainability (OS)

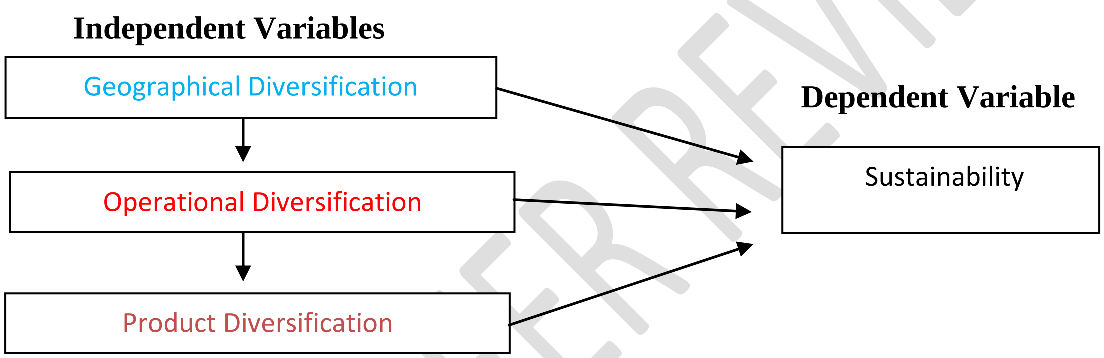
Omaliko, Okeke and Obiora (2021) assert that OS is having the leadership, global insights, talent and change in strategies necessary to rise to the unique challenges facing the organizations. From the perspective of an organization, sustainability is the capability of an organization to transparently manage its responsibilities for environmental stewardship, social well-being, and economic shared value over the long term while being held accountable by its stakeholders (Pojasek, 2017).

Omaliko and Onyeogubalu (2021) noted that for organizations to be sustainable, the following shall be conceded:

i. Be transparent in its decisions and activities that impact its responsibilities
ii. Be accountable for its impacts on the environment, society, and the economy
iii. Behave ethically
iv. Respect, consider, and respond to the interests of its stakeholders
v. Accept that respect for the rule of law is mandatory

Organizational sustainability as a concept requires that organizations should map out and give effect to specific programmes in accordance with a well-defined social (Omaliko, Nweze & Nwadialor, 2020).

Figure 1: The Diagram of Conceptual Framework



Source: Researcher's Concept (2022)

2.2 Theoretical Framework

The theoretical framework which gives the meaning of a word in terms of the theory on corporate diversification and sustainability established in this study is Modern Portfolio Theory (MPT). It assumes both knowledge and acceptance of this theory that this research work depends upon.

2.2.1 Modern Portfolio Theory (MPT).

Modern Portfolio Theory (MPT) was propounded by Harry Markowitz in the year 1959 in a paper on portfolio selection. Since then, the theory has found wide applicability in finance areas. MPT advances that through carefully choosing of investments to be included in a portfolio; an investor can effectively minimize the risk exposure and in the process, maximize the portfolio expected return. According to Markowitz, the risk of a portfolio should be the covariance of the portfolio and any investor should aim at creating a portfolio of low covariance investments. Different researchers have studied the relationship between diversification and financial performance (Burger, Padgett, Bourdean, & Sun 2009; Shen, Wang, & Su, 2011; Olajide, 2012) and their theoretical grounding and reference has been the Modern Portfolio Theory.

Sharpe in 1963 extended the concept in the MPT and formulated the factor model which is used to determine how a security performs in relation to the general market index. Ross also in 1976 formulated asset pricing model which has found wide application in assets pricing when factoring multiple risks (Fabozzi, Gupta & Markowitz, 2002). Scholars such as Chen and Yu (2011); Olajide (2012) argue that diversification exploit's economies of scale and will only succeed when the marginal benefits of diversification are higher than the marginal costs and some of the benefits that may accrue from diversification include stability in income flows, enhancement of profits, growth in revenue, sustainability and better performance of the entity shares in the market. The theory however advances that investments in different portfolios ensure corporate sustainability. MPT therefore provides very solid grounding in considering the impact of corporate diversification on sustainability of Health Care Firms in Nigeria.

2.3 Empirical Review

Chia-Wen and Heng-Yih (2008) in their study on corporate diversification and firms' performance used longitudinal data and regression model for data analysis. The study found that product diversity and customer diversity are positively associated with firm performance, whereas geographic diversity is negatively associated with firm performance.

The study of Ozigbo and Daniel (2020) on diversification strategy and financial performance of Nigeria private firms explored regression model and found that diversified firms performed better during the recent global financial crisis. The diversification level was positively and linearly related to performance, that is, more diversified firms performed better. Moreover, the study found that private firms that are totally owned by the founding owner and his/her family performed worse under crisis.

Oyedijo (2012) investigated the relationship between diversification and financial performance using ANOVA statistical test tool, the study found that the financial performance and sales growth of firms in Nigeria are significantly affected by the mode of diversification used

Patrick (2012) examined the relationship between product diversification and performance of manufacturing companies in Nigeria. The study used secondary data which was analysed using Panel Regression analysis. The results revealed that an increase in the size of manufacturing companies causes to diversify their products

Aguiar, Poornima and Reddy (2017) in a study on the investigation of the relationship between product diversification and profitability in fast moving consumer goods companies listed on Indian Stock Exchange between 2005 and 2015. Gini-Simpson Entropy measure was used to derive the diversification index whose results revealed that a wide variation existed between the companies under study, but absence of wide fluctuations within the companies over the years. The index revealed that the fifteen companies considered fell into three broad categories namely high, medium and low. Those securing an index value of 0.60 and above were classified as high, and those varying between 0.30 and 0.59 as medium and below 0.30 as low.

Jatto and Ayuba (2018) examined the relationship between corporate diversification and the performance of manufacturing companies for the period of 2013-2017. Using regression model, the study found that corporate diversification strategy significantly impact the performance of manufacturing companies in Nigeria.

Ishak and Napier (2006) examined the relationship between ownership structures and corporate diversification on Public Listed firms in Malaysia. The study showed that more than half of the firms analyzed were diversified. However, the results of the research provided no evidence that diversified firms in Malaysia are valued differently from focused firms. The finding was inconsistent with the argument that diversification reduces the value of firms.

Chakrabarti, Singh and Mahmood (2017) examined the effect of corporate diversification on performance for some firms acting in stable period and economy shock. The study concluded that diversification has a negative effect on performance in more developed institutional environments; although, in least developed environments there is an improving performance.

Phung and Mishra (2016) examined the effect of corporate diversification on the performance of companies listed on the Vietnamese stock exchange, using 2744 company year observations over the period from 2007 to 2012. The analysis was done using fixed effect, instrumental fixed effect, Heckman selection model and system generalised method of moments. The study revealed that corporate diversification has a negative impact on company performance.

Iqbal, Hameed and Qadeer (2012) examined the impact of diversification on firms' performance in Pakistan. The data were collected through secondary data and Stock Exchanges sites. A total of 40 companies were selected on the basis of Specialization Ratio (SR). The results of this study showed that there is no positive relationship between diversification and firms' performance.

Nwakoby and Ihediwa (2018) examined the effect of diversification on the financial performance of selected firms in Nigeria for the period of 2008-2017. Using regression model, the study found that the financial performance of Nigerian firms is significantly affected by the product, hence there was a relatively statistical significant correlation between financial performance and related diversification but business diversification is not statistically significant.

Mashiri and Sebele (2014) looked at diversification as a corporate strategy and its effect on firm performance using Conglomerates in the Food and Beverages Sector listed on the ZSE. Using regression model, the found that diversification and performance were linearly and positively related.

3.0 Methodology

This study adopts *Ex-Post Facto Design*. This was adopted based on the fact that our data is secondary data that exists already which cannot be manipulated or controlled. The population of the study consists of the entire 10 firms quoted under Health Care Sector of Nigerian Exchange Group (NGX) as at 2022 business list covering from 2016-2020 (NGX Business List, 2022). The use of quoted Health Care Firms on NGX could be justified based on the fact that there is no known study which had concentered on diversification with reference to Health Care Sector of NGX to the best of our knowledge. Based on this, a total of 10 firms also formed our sample size with 50 observations. The data were obtained from the Annual Reports and Accounts of the sampled firms. OLS Model was employed to examine the impact of corporate diversification (GEODIV, OPDIV & PRODIV) on firms sustainability measured using Kinder Lydenberg Domini **(**KLD) social-environmental performance rating system.

The collected data were analyzed with the aid of STATA 15. Variance Inflation Factor (VIF) was explored in order to determine if there is a multi-colinearity existence or auto correlation of the regressors.

3.1 Operationalization and Measurement of Variables

3.1.1 Dependent Variable

The dependent variable in this study is organizational sustainability and was measured using Kinder Lydenberg Domini **(**KLD) social-environmental performance rating system and the content analysis method of data collection as used by Uwuigbe (2011), Omaliko and Okpala (2020), Omaliko, Nwadialor and Nweze (2020). For this purpose, a score of (1) was awarded if an item was reported; otherwise a score of (0) was awarded ***(See Appendix 1).*** Consequently, a firm could score a maximum of 20 points and a minimum of 0. The formula for calculating the reporting scores by using these 20 attributes ***(See Appendix 1)*** is expressed in a functional form below:

$$\mathbf{RS} = \sum_{i=1}^{20} \mathbf{di}$$

Where:
RS = Reporting Score
di = 1 if the item is reported and 0 if the item is not reported
i = 1, 2, 3.... 20.

3.1.2 Independent Variable

Independent variable was captured using Geographical Diversification (GEODIV), Operational Diversification (OPDIV) and Product Diversification (PRODIV) as shown on Table 1 below:

Table 1: Measurement for Independent Variable

Variable	Measurement	A priori Expectations
Geographical Diversification	1 if the firm has dominant foreign interest (51% and above) or 0 for firm with dominant local interest	Ugwuanyi and Ugwu (2012)
Operational Diversification	1 if the firm has subsidiaries or group accounts otherwise 0 if the firm has no subsidiary and thus has only the “firm” annual reports and accounts	Ugwuanyi and Ugwu (2012)
Product Diversification	1 if the firm has a multiple products and 0 if otherwise	Chia-Wen and Heng-Yih (2008)

Source: Empirical Survey (2022).

3.2 Model Specification and Justification

The study adapted and modified the model of Nwakobi and Ihediwa (2018) in examining the impact of corporate diversification on organizational sustainability as shown below;

Nwakobi and Ihediwa (2018): $\mathbf{ROEit = \beta0 + \beta1PRODIVit + \varepsilon it}$

$\mathbf{ROEit = \beta0 + \beta2BUSDIVit + \varepsilon it}$

The modified model for the study is shown as thus

$$\mathbf{SS_t = \beta_0 + \beta_1 GEODIV_t + \beta_2 OPDIV_t + \beta_3 PRODIV_t + \mu}$$

Where:

ROE = Return on Equity
PRODIV = Product Diversification
BUSDIV = Business Diversification
SS = Sustainability
GEODIV = Geographical Diversification
OPDIV = Operational Diversification
μ = error term

4.0: Data Analysis and Results

Table 2: Descriptive Statistics

	GEODIV	OPDIV	PRODIV	SS
Mean	.600	.475	4.25	2.36825
Std. Dev.	.4961389	.5057363	2.109198	1.276409
Maximum	1	1	1	6.67
Minimum	0	0	0	0
Observations	50	50	50	50

Source: Researcher's Computation (2022).

Table 2 helps to provide some insight into the nature of the selected listed health care firms in Nigeria. Firstly, it was observed that on the average, in a 5-year period (2016-2020), the listed health care firms in Nigeria were characterized by positive sustainability (SS) value of 2.36825. This is an indication that the entire health care firms in Nigeria have positive sustainability value with a standard deviation value of 1.276409. The average geographical diversification (GEODIV) for the sampled firms was .600 with a standard deviation value of .4961389. This means that firms with GEODIV values of .600 and above are sustainable. There is also a high variation in maximum and minimum values of GEODIV which stood at 1 and 0 respectively. This wide variation in GEODIV values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher GEODIV values are more sustainable than those firms with low GEODIV values.

Operational Diversification (OPDIV) on the other hand was characterized by a mean value of .475 with a standard deviation value of .5057363. This means that firms with OPDIV values of .475 or more are sustainable. Also, there is also a high variation in maximum and minimum values of OPDIV which stood at 1 and 0 respectively. This wide variation in OPDIV values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher OPDIV values are more sustainable than those firms with low OPDIV values.

Similarly, product diversification (PRODIV) was characterized by a mean value of 4.25 with a standard deviation value of 2.109198. This means that firms with PRODIV values of 4.25 and above are sustainable. Also, there is also a high variation in maximum and minimum values of PRODIV which stood at 1 and 0 respectively. This wide variation in PRODIV values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher PRODIV values are more sustainable than firms with low PRODIV values.

Table 3: Collinearity Statistics

Variable	VIF	1/VIF
PRODIV	1.15	0.869714
OPDIV	1.12	0.892707
GEODIV	1.05	0.956268
Mean VIF |	1.11	

From the table above, the TV ranges from 0.869714 to 0.956268 which suggests non multi-collinearity feature. The VIF which is simply the reciprocal of TV ranges from 1.05 to 1.15 also indicates non multi-collinearity feature.

4.2 Test of Hypothesis

Table 4: Result on Impact of Corporate Diversification on Sustainability of Health Care Firms in Nigeria.

Source	SS	DF	MS		NUMBER OF OBS = 50	
					F(3, 46)	= 81.228
MODEL	65.2268395	3	21.7422798		Prob > F	= 0.0030
RESIDUAL	12.3127381	46	.267668219		R-squared	= 0.6177
Total	77.5395776	49	1.58244035		Adj R-squared	= 0.4260
					Root MSE	= 0.82482
SS	**Coef**	**Std. Err**	**t**	**P>|t|**	**95% Conf.**	**Interval]**
GEODIV	.3405026	.0342220	9.94	0.000	.5401404	1.221146
OPDIV	.0918442	.4408859	0.21	0.000	.8023139	.9860022
PRODIV	.2388473	.0171024	13.9	0.001	.2260610	.2083664
Cons	2.157923	.6024119	3.58	0.002	.9361755	3.379671

Source: Result output from STATA 15.

4.2: Discussion of Findings

The result of the analysis of the study using OLS Model is expressed as follows:

H_{01}: Geographical Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

In view of the above analysis as shown on table 4, the result shows that there is a significant and positive relationship between geographical diversification and sustainability of listed health care firms in Nigeria. With a P-value of 0.000, the test is considered statistically significant at 1% level. This could be verified with the coefficient of correlation of 34% which indicates that geographical diversification ensures corporate sustainability by 34%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that geographical diversification has significant impact on sustainability of health care firms in Nigeria.

This agrees with the a priori expectations of Ozigbo and Daniel (2020) whose study centered on diversification strategy and financial performance of Nigeria private firms. The study explored the use of regression model and found significant and positive relationship between geographical diversification and firms' performance. Hence the study concludes that geographical diversification ensures corporate performance. On the same note, Onyedijo (2012) examined the effect of product-market diversification strategy on corporate financial performance and growth in Nigeria. The study found significant and positive relationship between geographical diversification and firms' performance. However, the finding of this study is not in consonance with the study of Chia-Wen and Heng-Yih (2008) who investigated managerial ownership, diversification and financial performance and reported using regression model that geographic diversity is negatively associated with firm performance.

H_{02}: Operational Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

In view of the above analysis as shown on table 4, the result shows that there is a significant and positive relationship between operational diversification and sustainability of listed health care firms in Nigeria. With a P-value of 0.000, the test is considered statistically significant at 1% level. This could be verified with the coefficient of correlation of 0.092% which indicates that operational diversification ensures corporate sustainability by 9.2%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that operational diversification has significant impact on sustainability of health care firms in Nigeria.

This is in tandem with the study of Iqbal, Hameed and Qadeer (2012) on impact of diversification on firm performance. Using regression model, the study found that operational diversification is linearly and positively related to firms' performance. Also, Mashiri and Sebele (2014) examined diversification strategy and its effect on financial performance in Zimbabewe. Using regression model, the study found that operational diversification is linearly and positively related to firms' performance.

H_{03}: Product Diversification has no significant impact on Sustainability of Health Care Firms in Nigeria

In view of the above analysis as shown on table 4, the result shows that there is a significant and positive relationship between product diversification and sustainability of listed health care firms in Nigeria. With a P-value of 0.001, the test is considered statistically significant at 1% level. This could be verified with the coefficient of correlation of 0.239% which indicates that product diversification ensures corporate sustainability by 23.9%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that product diversification has significant impact on sustainability of health care firms in Nigeria

This agrees with the a priori expectations of Patrick (2012), Aguiar, Poornima and Reddy (2017), Jatto and Ayuba (2018), Nwakoby and Ihediwa (2018) whose studies were carried out in Nigeria, India and Nigeria respectively.

Patrick (2012) investigated product diversification and performance of manufacturing firms with the use of regression model and found an association between product diversification and corporate performance. In agreement, Aguiar, Poomima and Reddy (2017) researched on diversification strategy and financial performance in India and found significant and positive relationship between product diversification and firms' performance. Also Nwakoby and Ihediwa (2018) examined the effect of diversification on the financial performance of selected firms in Nigeria and conclude that product diversification ensures corporate performance.

5.1 Conclusion

The study having developed a model fit on corporate diversification using (GEODIV, OPDIV & PRODIV), concludes as follows;

1. Geographical Diversification has significant impact on Sustainability of Health Care Firms in Nigeria.

2. Operational Diversification significantly ensures Sustainability of Health Care Firms in Nigeria.

3. Product Diversification has significant impact on Sustainability of Health Care Firms in Nigeria.

5.2: Recommendation

Based on findings of the study, the following recommendations are suggested:

1. The study established that geographical diversification ensures organizational sustainability, thus; it was recommended that corporate organization should engage on geographical diversification in order to avoid business stagnation and declining sales.
2. The study also recommended operational diversification for corporate organizations since operational diversification ensures corporate sustainability. Also, in general, our results suggest that operational diversification improves firms' financial performance but still there is a need of proper management of diversification decisions as excessive diversification can lead to a decrease in firms' financial performance.
3. The study found significant and positive relationship between product diversification and corporate sustainability. Thus, product diversification was recommended for corporate organizations as it ensures organizational sustainability.

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Appendix 1

Table 5: Twenty Testable Social-Environmental Performance Items

S/N	Environmental	Energy	Research & Development	Employee Health and Safety
1	Environmental Pollution	Firms Energy Policies	Investment in Research on Renewal Technology	Disclosing Accident Statistics
2	Conservation of Natural Resources	Disclosing Energy Savings	Environmental Education	Reducing or eliminating Pollutants, Irritants, or Hazards in the work Environment
3	Environmental Management/Environmental Policies	Reduction in energy Consumption	Environmental Research	Promoting Employee Safety and Physical or Mental Health
4	Recycling Plant of Waste Products	Received Awards or Penalties	Waste Management/Reduction and Recycling Technology	Disclosing Benefits from increased Health and safety Expenditure
5	Air Emission Information	Disclosing increased Energy Efficiency Products	Research on New Methods of Production	Complying with Health and Safety Standards and Regulations and Establishment of Educational Institution

Source: Adapted from (Hackston & Milne, 1996 & Adler, 1999)