An Exploratory Study of Factors Influencing Corporate Sustainability on business Performance

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Abstract: **This study evaluates the effect of corporate sustainability on business performance of manufacturing industries in USA, from 2012 to 2015. These Manufacturing industries are listed in Corporate Social Responsibility Hub (CSRHub), Morning Star and Global Reporting Initiative (GRI). All data used in this report were extracted from 37 manufacturing companies' Sustainability, corporate social responsibility (CSR) and annual reports. These companies are of diverse sectors such as Automobile, Health care, consumer goods, food, beverages and technology. Quantitative method of research is used in this study; this also includes the use of explanatory and descriptive research design. The main issues to be discussed in this study are Donation, Incident rate reduction and Water Recycled as the independent variables, while Revenue is the dependent variable. Data analysis was carried out using the regression analysis, descriptive statistics and correlation. E-views software generated the data for further analysis. The findings imply that donation has a positive insignificance effect on revenue, reduced incident rate reduction had positive significance effect on revenue and water recycling has negative insignificant effect on revenue. In the future researches, larger samples of companies form diverse sectors and subsectors should be studied to broaden the research on company performance especially the non-financial aspect.**

Keywords: **Corporate Sustainability, Company Performance, Revenue, Corporate Social Responsibility, Donation, Incident Rate Reduction, and Water Recycled.**

1. INTRODUCTION

In the preceding literature, a lot of authors have tried to define corporate sustainability, but Mel Wilson (2003) sees it as a new and developing corporate management standard. It is an alternative to the traditional growth and profit-maximization model. While corporate sustainability identifies that business growth and profitability are important, it also requires the establishment to pursue societal goals, precisely those relating to sustainable development — environmental protection, social justice, equity, and economic development

The development and management of corporate sustainability by companies is carried out for their benefit, so that their company grows, to achieve improvement in their procedures and instead of reputation and profits been focused upon only, value is added to their companies Mckinsey, (2011).

There were other studies in the past which relates to US manufacturing companies, but these researches done previously are based on the assumptions that the aims of companies are to maximize profits than other components such as value and growth. However, other drivers do exist.

The definition of sustainability development that is commonly known by Brundtland's report in 1987 when the future generations and present needs are met with no compromise in the capability to meet these needs is called sustainability development. Parkins (2000),

Therefore, corporate sustainability deals with the creation of long term shareholder value by accepting opportunities encountered and dealing with risks that arises from economic, social and environmental factors Mays, (2003).

Generally, corporate sustainability was regarded as a cost generator that reduces the efficiency and acts as hindrance for developing growing profits. For the last 50 years, corporate sustainability has not been perceived as necessity anymore but as an opportunity for creating and interpreting value (Ludema et. el, (2012). According to Fischer & Sawczyn (2013) the recent view of corporate sustainability, is an encouraging and driving force for stakeholders to be transparent in their companies' operations. Additionally, Global reporting initiative (GRI) and other sustainable reporting standards have placed more pressure on corporate organizations for the expansion and development of their sustainable practices Backstrom & Karlsson, (2015).

Previous scholars, based their argument that triple bottom line(TBL) should be included in the broad scope of the performance of a company, not only focus on financial aspect of the company performance; focus also includes market share, innovation, brand value and other non-financial KPIs (Key performance Indicators Hyvonen (2007); Ryeoin (1999). On the other hand, Chen (2015) observed that focus should be specific on environmental, economic, innovative, social and operational performance too. Currently, researches carried out, showed corporate sustainability effects on business have been quite beneficial through communication and technological improvements, because it has made unethical behaviours from corporation difficult to avoid being punished and comparison of sustainable practices and transparency is monitored KPMG, (2013)

Theories have also been used to attain more understanding on corporate sustainability, such theories are Freeman (1984) Stakeholder Theory, Corporate Environmentalism theory Charter and Polonsky (1999); Banerjee et.al, (2003) Triple Bottom Line Theory Elkington (994); Forbes (2012); Slaper & Hall (2011), Corporate Social Responsibility. The World Business Council for Sustainable Development (2001), Legitimacy theory Lindblom, (1993), Agency theory De Klerk and Villiers, (2012)

Hence, with the current expansion, processes of manufacturing industries in the US have broaden their scope, not just in economic, but also in social and environment; they have aimed to achieve operational improvements to be flexible, quality, cost, delivery and gain competitive edge in social and environment matters Caniëls et al., (2013); Vachon & Klassen, (2008).

Background Literature and Hypothesis development:

A general definition of sustainability by Brundtland (1983) defines the term as a means by which human needs are met in the absence of non-compromise of the capability of next generation's needs being met. This definition placed the ecological, economic and social dimensions into consideration in order to find a lifelong success.

The United Nations Global Compact (2014) considers corporate sustainability as an obligation for operating a business in today's global market, for long term corporate achievement and to ensure that value is delivered across societies. For a sustainable operation by companies, they must ensure that carry out responsible operations that aligns with the general principles, incorporate sustainability in their objectives and operations, carry out sustainability reporting and ensure local engagement in every of their operating location.

Corporate sustainability effects on company performance:

While conducting a study, Chen (2015) examines how sustainability influences a company performance, focusing on manufacturing industry in Sweden. She adopted Triangulation approach to validate her findings by conducting and collecting a survey of large and medium sample firms utilizing independent variables such as product responsibility,

human rights and society, while the dependent variables are cash flow and sales growth. Their results, showed there is a positive correlation human rights, product responsibility and society with ROE; however, there were significant differences in the CSR practices. In conclusion, Chen indicated that manufacturing firms in Sweden prioritize the implementation of environmental and economic practices than on societal ones.

Robert, Ioanou & Serafeim (2014) conducted research in the US, using 180 companies. They collected data using survey cross sectional survey for a period of 1992 to 2010. Their survey was to identify companies that practiced high sustainability and those with low practices. They used employees, environment, community, customers and products as their independent variables, whereas return on asset, MTB and return on equity. They found that the responsibility for sustainability is held by board members in high sustainability companies using top executive compensation incentives as functional sustainability metrics.

Also, Babalola (2012) conducted research in Nigeria, to study what relationship corporate sustainability has with a company performance in terms of profitability. He used secondary method to collect data for 10-year period, from 10 random companies. The data collected was analysed using Ordinary least square and he found out that the companies sampled investments in corporate sustainability was not up to 10% of their yearly income. Findings also indicated that explanatory variable justifies the changes in corporate sustainability in Nigeria and gave recommendation on the regulations and laws

Past research carried out by Callen and Thomas (2009) on US companies, concluded that sustainability performance has an impact on the company's financial performance and Surroca et.al (2010) mentioned that this might vary from nation to nation in terms of cultural or societal effects with regards to response to social and environmental issues.

Currently, closer attention is paid in the development of a framework that defines, integrates and evaluates sustainable practices Amini & Bienstock, (2014). In an efficiency, sustainable exploitation practices should be considered such practices includes energy, water and materials reduction; responding to the stakeholders' demand; improvement and exploitation current sustainable competencies and the progress of an organization growth measurement Maletic et.al (2014).

In most cases, sustainability and sustainability development are used interchangeably, Brundtland (1987) defined sustainable development as a development in which current generation's needs are met without mitigating the next generations' capability in meeting their needs. One of the sustainable component discussed here is donation. Donation is a philanthropically or voluntarily giving of some part of a company resources for charitable causes Liang and Renneboog (2016). These donations are usually in- kind or cash, its mechanism of distribution is trust fund or corporate foundation.

Committee Encouraging Corporate Philanthropy (CECP) (2014) noted that among 261 top companies donations totalled 25 Billion USD, each company had median of 18 Million USD. Meanwhile, industries such as energy and manufacturing were the lowest in donations (0.76%) while educational institutes, health and social services are the major beneficiaries of these donations at 28% and 40% respectively.

Incident rate reduction in companies is another issue in corporate sustainability. According to the Occupational Safety and Health Act of 1970 (OSHA) incident rate reduction indicates the number of incidents that have occurred or their severity. These rates are in five categories and easily used interchangeably in confusing manner. They are recordable incident rate reduction, lost time case rate, days away and severity rate. These rates are used in industry, indicating companies' performances in the past.

There is an increase by corporations to cut cost, however the incident rate reduction cost is expensive and can lead to a significant profit loss (Beyer, 2011). To develop and implement zero incident effectively, it is important to recognize the role it plays in profits margin.

Water recycling by companies is a procedure that requires treatment of waste water to get the quality of water that fits the function and conforms to proper regulatory principles Sellahewa (2015).

Corporate Social Responsibility:

The World Business Council for Sustainable Development (2001) defined CSR as the degree which businesses are committed towards the contribution of a sustainable economic development in alliance employees, family members and local authorities world business council for sustainable development (WBCSD) (2001). Business for Social Responsibility (BSR) (2003) defines CSR as comprehensibly group of policies, procedures and programs incorporated in the overall business activities and decision making procedures, to make sure that the impact of positive of their activities on society is maximized.

2. CONCEPTUAL FRAMEWORK

The conceptual framework for this report, would be based on the critical analysis of some key sustainability frameworks and the literature review.
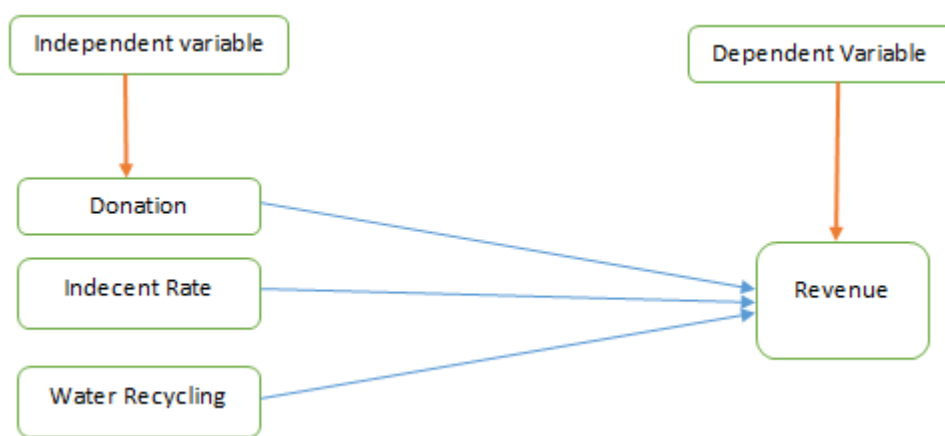

Figure 1: Conceptual Framework

Hypotheses:

H1: Donation has positive significant effect on Revenue

H2: Incident rate reduction has a negative significant effect on Revenue

H3**:** Water recycling has a positive significant effect on Revenue.

These listed hypotheses signify that the independent variable of Incident rate reduction is assumed to display a negative significant effect on the dependent variable Revenue while Donation and Water Recycling are assumed to display a positive significant effect on revenue. This implies that when companies are inclined towards the decrease of a specific independent variable like incident rate reduction, it is considered that it boosts the company revenue likewise increase in other variables (Donation and Water Recycling). Therefore, negative used in this hypothesis, connotes reduction; while the positive connotes increment of the variable

3. RESEARCH METHODOLOGY

Data collection method for this research is basically secondary data. Data was adopted from companies' annual reports, journals, government publications, company's websites, articles and business magazines. The justification for using secondary method of data collection for this report is due to easy access to data, time and less cost. Secondary collected is for span of five years, cross sectional analysis is used since it short period, obtaining insights into the level of consistency in their non-financial reports. However, the limitation for this method, is unavailability, non-updated and outdated data of some company data.

Sample and survey Design

For this research, explanatory research is carried out to determine the degree of cause and its impact on the research variables Dudovskiy (2016). Since explanatory study will determine the connection of the effect of corporate sustainability on companies and the variables of this effects will also be identified Wyk, (2012).

This study followed Parahoo (1997) well established overall number of components and data is gotten from such people, events, relics and organizations. Similarly it is the elements required to be included in a study Burns and Grove (2003). Population in this context means a collective set of human or objects Baerriro & Albandoz (2001). The 2429 global manufacturing companies from different sectors is the total population for this report. While the sample size represent the potential 37 companies

To carry out the data analysis and effect of corporate sustainability on company performance investigation, statistical tools such as correlation, F-test, T- test and multiple regression is used and E-views is used for the data analysis.

Table 1: Sample and total population of U.S manufacturing companies.

Sectors	Energy	Healthcare	Technology	Public Utilities	Capital Goods	Total
Total Population	311	804	641	284	388	2429
Sample Size	4	7	6	9	11	37

For this research study, convenience/ quota sampling is used. According to Etikan et.al (2016), this type of sampling involves a non-probability sample and it entails randomly selecting participants without a criterion involved. While quota sampling involves a stratum in the sample proportion to the selected population Jonathan (2004). The US industrial corporations for this study are in various amount from 5 sectors to a total of 37 companies. Randomly selecting Farrokhi (2012) companies made sample selection easier because some companies have few to no CSR reports.

The technology and internet development has made data accessible and collection less difficult Zimmermann (2015). Constant development and upgrading of websites, companies tend to upload their annual, CRS, and financial report for the public. All data gotten for this research, were extracted from each company website.

4. RESULT AND DISCUSSION

Descriptive Statistics

Table 2: Descriptive Statistics

Variables	Mean	Median	Maximum	Std. Dev.
DONATION	25.60836	15.36194	99.55008	26.38272
INCIDENT RATE REDUCTION	0.843419	0.38	11	1.773089
RECYCLED_WATER	2.996446	2.25	9	2.402673
REVENUE__	4.908507	3.77	6.24	84.91467

Donation

In table 2, it shows that 25.6 is the average mean for donation with a standard deviation of 26.3. This result indicates that 25% of the revenue generated is being spent on donation to the community by the US manufacturing companies of CSRhub used in the duration of this research. Business organization in the US has generously been philanthropic. Greening and Turban (2000) stated that shareholder value might be enhanced through philanthropic donation in terms of sales boost, employee morale increase production output. Barron (2001) and Neiheisel (1994) supported by including innovative stimulation and regulatory and special interest groups relationship improvement. On the other hand, donations might ordinarily mean agency cost Williamson (1964); Jensen & Meckling (1976). A carefully designed philanthropic donation might grow a company brand value among its customers like advertisement does Rochin, et, el. (2001).

ISSN 2394-7322

International Journal of Novel Research in Marketing Management and Economics
Vol. 7, Issue 2, pp: (1-8), Month: May - August 2020, Available at: **www.noveltyjournals.com**

Incident rate reduction

Table 2, incident rate reduction has an average mean of 0.84 and a standard deviation of 1.7. The result indicates that there was 84% reduction in incident rates. This shows that there was 84% reduction in work hours lost due to incidents that affect employee productivity during the research time in the sampled companies.

Due to limited company resources, strategies for intervention that optimize incident rate reductions are combined with less expensive programs to yield productivity and positive improvement Iyer, et, el. (2005). Supporting safety performance, managers tend to promote and celebrate safety milestones, like recognition of employees when they act in accordance to safety measures. This tends to increase safety work behaviours by employees which in turn increase productivity Beyer (2011).

Recycled Water

The average mean for recycled water in table 3, is 29 with a standard deviation of 2.4. This shows that 29% of the water used in the US manufacturing companies during the period investigated was recycled.

Approaches to water recycling implies restoration to the initial condition by treatment process Bachman (2012) Manufacturing companies like Pepper Snapple implemented their water recycling system in Victorville, California in 2010. The recycling system has effectively reduced cost and it is sustainable for their company Pepper Snapple, (2012). Another manufacturing industry that taken up this initiative is Chrysler automotive. According to Baachman (2012) and Ephraim (2014) recycling of water has led reduction of sewage discharge into the community streams, lakes and rivers. This has in turn helped the society by safety in consumed water, sanitation and reduction in disease due to sanitation

TABLE 3: Pearson Correlation significance level at 0.05

REVENUE		
INDEPENDENT VARIABLES	**Correlation**	**Significance**
DONATION	-0.117394	0.1553
ACCIDENT RATE	0.044451	0.5917
RECYCLED_WATER	-0.101435	0.2199

The table 3 above shows that the correlation between donation and revenue is weak and negative with a value of -0.117. The table also show that the correlation between donation and revenue is insignificant with a probability value of 0.1553 (p>0.05). Thus, the relationship between donation and revenue is weak and negative, yet insignificant.

The correlation between accident rate and revenue is weak but positive with a value of 0.044. Similarly, it shows the correlation donation and revenue as insignificant with a probability value of 0.5917(p>0.05). Therefore, the relationship is positive and weak, but insignificant

The final variable in the research is recycled water. In the table, it shows its correlation is negative with value of -0.101. According to Hair (2006), at a value of 0.21(p>0.05), it shows that recycled water is insignificant.

Summary for Coefficient for Revenue

Table 4: Dependent variable: Revenue

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.645889	2.352761	1.974654	0.0509
DONATION	0.017272	0.021843	0.790735	0.4309
INCIDENT_RATE	2.55921	1.124791	2.275276	0.0249
RECYCLED_WATER	-0.78032	0.712851	-1.094647	0.2762

In table 4, the standard coefficient value of donation is at 0.0172, at an insignificant value of 0.43 (p>0.05) as stated by Hair (2006). Therefore, donation has positive insignificant effect on revenue. This shows that there is no statistical significant impact of donation on revenue.

5. CONCLUSIONS AND RECOMMENDATIONS

In this research study, regression analysis was focused on, in order to test the hypotheses of this study. Revenue was the dependent variable used for this research while donation, incident rate reduction and water recycle were the three independent variables applied. The study key objectives are, to know the effect of donation, incident rate reduction and water recycle on a company revenue with regards to US manufacturing companies as sample study. The research study shows that 25% of revenue made, with regards to the descriptive analysis, is spent on donation to communities globally by the selected US manufacturing companies from CSRhub at this study duration. Although the regression analysis indicates the coefficient is positive with value of 0.0172 and an insignificant value of 0.430. This implies that Donation effect on company Revenue is negatively insignificant.

Using the descriptive analysis, it is observed that the sampled manufacturing companies are putting in much effort to reduce incident rate. The companies used in this research show 84% reduction in work hours lost due to incidents that affect employee productivity during the research time. The study also indicate that 29% of the water used in the US manufacturing companies during the period investigated was recycled. With a negative coefficient of -0.78 and insignificant value of 0.27, implies that water recycling has a negative impact on a company revenue.

Therefore the study indicates that US manufacturing companies don't give donations for the sole purpose of increasing their sales but because they feel ethically obliged to sustain the communities in which they operate. The US manufacturing companies adopt proactive strategies in reducing workplace incidents, it causes an increase in their sales, hence increasing their revenue.

The study recommends that the Companies in fall sectors including manufacturing industries in the US should donate more to the community to save tax, while commitment to environmental sustainability like water recycling should be incorporated in their operations for economical and society benefits.

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