Effect of Eco-Design on the Performance of Nigerian Bottling Company

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Abstract: **This study investigated the effect of eco-design practices on the performance of Nigerian bottling company. specifically, the study evaluated the level of eco-design practices and its effect on the performance on Nigerian bottling company. The study employed a quantitative research method conducted in a cross-sectional approach to collect primary data using structured questionnaire from selected 202 employees involved in eco-design practices in Nigerian Bottling Company (NBC) using a simple random sampling technique. The collected primary data was analysed using both statistical package for social sciences (SPSS) partial least square structural equation modelling (PLS-SEM). The findings of the study revealed that there is a moderate level of eco-design practices along the dimensions of design for raw materials, design for distribution, design for manufacturing, design for product use and design for end of life practices in the study area. The result of the test of hypotheses revealed a significant effect of eco-design on performance of NBC. However, there was no evidence of significant effect of design for product use on operational performance and design for raw material on environmental performance. the study recommends that firms should focus more on selection of materials with low impact and also endeavour to utilise products that are of low energy consumption to enhance their performance**

Keywords: **eco-design practices, financial performance, operational performance environmental performance**

I. INTRODUCTION

In order for an organization to sustain its competitive advantage in the industry and drive optimal efficiency in the 21st century economy, such an organisation must boost their capability to gain accurate and deep understanding of the market, customers, environmental realities and also embrace technology and sustainability practices (Habib & Bao, 2019). Technological capability is of great importance in achieving efficiency in production process. It is associated with the skill and knowledge necessary for a company to absorb, use, adapt, develop and transfer technologies (Mori, Batalha, & Alfranca, 2016). It is also referred to an organisation's capacity to deploy, develop and utilise technological resources and integrate them with other complementary resources to supply the differentiated products and services. Technological capability is included not only in the employees' knowledge and skills and the technical system, but also in the managerial system, values and norms (Roshartini, Roshana, & Abdul, 2012).

The manufacturing industry is facing an upsurge in its production process as a result of technological innovations, which is largely seen in the fourth industrial revolution (4IR). However, the effects of manufacturing process on the environment have necessitated the need for eco-friendly design as a solution for reducing the negative manufacturing effect on the environment. Eco-design has emerged as a set of managerial practices that integrate environmental issues into the design phase. If implemented successfully, eco-design can be a way to achieve competitive advantage while enhancing the environmental sustainability of the firm (Laari, 2016).

Eco-design is increasingly becoming an important strategy for sustainability in manufacturing firms by enhancing international competitiveness in an effective manner. Mainly, eco-design focuses on the reduction of environmental impact, other advantages include; cost reduction, entrance into new markets and launch of new products therefore increase in competitiveness as this is expected to yield in increase financial performance (Knight & Jekins, 2009). The adoption of eco-design may lead to a huge reduction of environmental footprints, reduction of waste and re-use of materials, it might also result in the use of scarce natural resources effectively and efficiently, while the environment is being kept free from pressure (Dallas, 2008). This will ensure the organisation overall performance in the manufacturing industry.

The foundation of an environmental-friendly approach in the supply chain is an issue of growing concern and a challenge for many firms (Diabat & Govindan, 2011). Manufacturing companies faces some major challenges which includes; Sustainable consumption, management of solid and liquid waste and compliance with strict environmental regulations (Wakulele, Odock, Chepkulei, & Kiswili, 2016). However, the increasing concerns on the environment has compelled many organisations to increase their efforts in evaluation of environmental performance (Lundberg, Balfors, & Folkenson, 2006). As economies increasingly move towards embracing eco-design in manufacturing process, there is a pressing need to pay attention to bringing down the environmental impact of these manufacturing activities (Gajendrum, 2017). Hence, this paper investigated the level of eco-design practices and also its effect on the performance of Nigerian Bottling Company.

II. LITERATURE REVIEW

This section reviews the concept of eco design and performance of manufacturing firms. It also presents the theoretical perspective of the study and the existing relationships between eco-design and performance which forms the basis for the conceptual framework and hypotheses of this study.

II.1 Eco-Design

Eco design indicates an approach that integrates environmental criteria in the design of product and services, so as to achieve the reduction of environmental impacts they produce, taking in to consideration all stages of their life cycle (Alonso Garcia, 2006). It is the logical consideration of design performance with respect to environmental, health and safety intentions over the full product and process life cycle (Singhal, 2013). Eco-design in the manufacturing company is a tool use for improving the sustainability of product by incorporating environmental aspects into design stage (Esther, Raul, Ramon, Jordi, Carles, & Joan, 2015). Basically, eco-design is the integration of environmental criteria such as design for raw material, design for manufacture, design for distribution, design for product use and design for end of life which aim at reducing environmental aspect in all stages of product life cycle (Singhal, 2012).

II.1.1 Design for raw material

This include selecting materials with low negative effect, non-hazardous materials, materials with low energy contents, non-exhaustible materials, recyclable material and recycled materials (Wakulele, Odock, Chepkulei, & Kiswili, 2016), It is one of the key issues addressed by eco-design for energy using products and its priority for products not using energy is the reduction of materials used.

II.1.2 Design for manufacture

This involves the manufacturing techniques optimisation, having alternative production techniques, low-impact energy use, reduction in waste generation, fewer manufacturing process and few production consumables, local production to reduce logistics requirement (Esther, et al., 2015). A very good design must be put in mind through the stages involve in manufacturing. The techniques involve in manufacturing should have a few environmental impacts, should lead to minimisation in the use of auxiliary materials and energy also, it should result to limitation in raw material losses and to generate few wastes as possible (Wakulele, Odock, Chepkulei, & Kiswili, 2016).

II.1.3 Design for distribution

Design for distribution is the relationship between the products, its package, means of transportation as well as the logistics involved. The core aim of design for distribution is to minimise transport by working with local supplier to avoid long distance transport (Wakulele, Odock, Chepkulei, & Kiswili, 2016). Eco-design involves avoiding environmentally harmful modes of transport therefore, the choice of transportation means is significant.

II.1.4 Design for product use

This includes reducing the environmental effect at the user stage; consumption of low energy, few consumables needed during use, ensuring clean energy source. The important phase during use are energy and waste. When designing a product, it should be designed with the use of lowest energy consuming component and also encourage the use of renewable source of energy (Wakulele, Odock, Chepkulei, & Kiswili, 2016).

II.1.5 Design for end of life

Product's end of life system refers to what happen to the product after its initial life time, it involves reuse of product, material recycling and clean incineration. During the design phase of a product, eco design product are designed considering its end life aspects such as; longer useful life, remanufacturing, high recyclability, and potential for energy recovery. Recyclability is the most necessary features of the products reaching the end of life (Singhal, 2013).

II.2 Organizational Performance

Organisational performance is a measure used by firms manage their effectiveness, and deliver value to stakeholders and customers Moullin (2007). Didier (2002) believes that performance entails the achievement of goals that were given merging of enterprise orientations. It is the result of a comparison between the outcome and the objective of firms. performance is measure from the financial, environmental and operational dimension. Financial performance indicates the measurement of organisations outcome, overall financial health of the firm over a particular period of time. It signifies how well a firm utilizes its resources to generates higher sales, profitability and worth of a business entity for its stakeholder through managing its current and non-current assets. Environmental performance is the ability to mitigate air emissions, waste water, solid wastes, the consumption of hazardous materials, the frequency of environmental accidents and to improve an organisation's environmental condition (Zhu, Sarkis & Lai, (2008). While operational performance reflects competencies in definite areas of manufacturing and logistics, which include cost, delivery speed and reliability, quality, and flexibility (Stocks, Greis, & Kasarda., 2000) Zhu, Sarki & Lai (2008) include items such as delivery reliability, product quality, and inventory levels. Logistics performance is also used to describe the operational aspect of firm's performance.

II.3 Theoretical Review

The concept of this study is underpinned on the resource dependent theory which posits that firms need resources in other to maintain their existence in the long run. It also stated that organisation can only acquire these resources in their environment and that there are organisations that want to acquire the same resources in this environment (Pfeffer & Salancik, 1978). The study also suggests that firms that lack the resources required in other to achieve its goal are left with no choice than to partner with others to obtain those resources

Wakulele, *et al*. (2016). Where partnership and resources sharing are beneficial for environmental and productivity improvement, this leads to diffusion of environmental practices between the partners (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010). Resource dependence argues for the diffusion of environmental practices to take place, there must be partnership among firms to achieve better productivity and environmental improvement. Eco-design practices need firm's partnerships to assure performance benefits and this requires interrelationship with inter-organisation is important for environmental management to gain performance outcomes, where resource sharing and partnership are crucial for productivity and environmental improvements (Zhu and Sarkis, 2004).

Previous studies such as Wakulele et al., (2016), Khaksar, Abbasnejad, Esmaeli, & Tamosaitiene (2016), have attempted the investigation of the relationship between eco-design and performance of manufacturing firms and the results found that there is a tendency of significant relationship between eco-design and performance. Wakulele et al., (2016) investigated the effect of eco-design on the performance of manufacturing firms in Kenya. The study adopted a cross-sectional survey approach on 65 manufacturing firms and found that eco-design practices (design for distribution, design for end of life and design for raw materials) positively influence manufacturing performance with respect to environmental performance and financial performance. Also, Yurdakul and Kazan (2020) investigated the effect of eco-innovation on financial and environmental performance of Turkish manufacturing firms and found that eco-innovation directly influences environmental performance and indirectly has consequence on the reduction of cost and thus enhances economic performance in Turkish manufacturing firms. While these studies presented earlier have identified positive relationship between eco-design and performance of firms, other studies like Polito and Geurtz (2011), Wagner (2005) do not. Polito and Geurtz (2011) revealed that there is no significant difference between firms that are eco-friendly and those that are not. Hence, the study could not substantiate that eco-design enhance firm performance. However, the study of Wagner attempted the reconciliation between environmental and economic performance to improve corporate sustainability and the study confirmed inversely U-shaped relationship between environmental management and economic performance in the fixed effects models.

II.4 Conceptual Framework and Hypotheses

This study aimed at investigating the effect of eco-design practices on the performance of Nigerian bottling company. Eco-design is the independent variable which includes: design for raw material, design for manufacture, design for distribution, design for product use and design for end of life while performance of Nigerian Bottling Company is the dependent variable which is measured from the financial, operational and environmental performance. Hence, this study hypothesized that eco-design practices have no significant effect on performance of Nigerian Bottling Company.

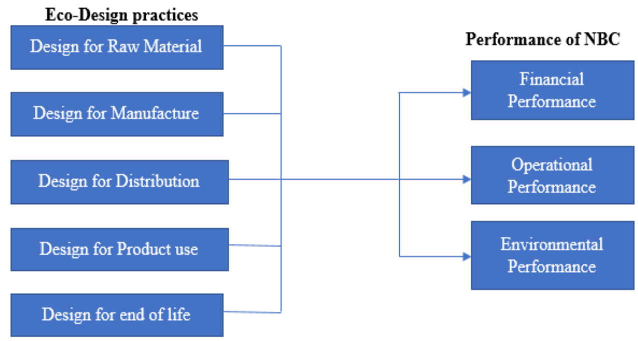

Figure 1: Conceptual framework

The following hypotheses are tested in this paper:

H_{01}: *Eco-design practices do not have significant effect on financial performance of NBC*
H_{02}: *Eco-design practices do not have significant effect on operational performance of NBC*
H_{03}: *Eco-design practices do not have significant effect on environmental performance of NBC*

III. METHODS

III.1 Research Design

This study employed a cross-sectional design approach to investigate the effect of eco-design on performance of Nigerian Bottling Company. This approach is appropriate in analysing the effect of one variable on another (Zutshi & Sohal, 2004)

III.2 Population and Sampling

The population of the study includes all 1250 employees of the Nigerian Bottling Company (NBC). NBC was deemed appropriate for the study as it is the main firm in Nigerian known for its concern for eco-design practices in its production/manufacturing process. The study employed a simple random sampling technique to select 303 sample size which is a fair representation of the entire population.

III.3 Data collection method

Primary data was collected and used for this study through a structured questionnaire. The questionnaire was suitable for this study because it allows flexibility and comprehensive view of obtaining relevant information from the respondents. It also allowed the respondents to provide their responses at their convenience. The items of the questionnaire were adapted from previous studies that investigated eco-design and performance of manufacturing firms and measured using a six-point Likert type scale ranged from 1- Strongly disagree, 2- Disagree, 3- Slightly disagree, 4- Slightly agree, 5- Agree, 6- strongly agree.

III.4 Data analysis

This study used both statistical package for social sciences (SPSS) and partial least square structural equation modelling (PLS-SEM) to analyse the data collected. SPSS was used for the preliminary (missing data, outliers, test of non-response bias and common method variance) and descriptive analysis (frequency, mean and standard deviation). The test for the research hypotheses was done using the PLS-SEM to assess both the measurement and structural model of the study.

IV. FINDINGS

A total of four hundred (400) copies of survey questionnaire were distributed to the study area, two hundred and two (202) usable questionnaires were returned thereby representing 50.5% response rate.

IV.1 Demographic characteristics of respondents

The descriptive analysis of demographic characteristics of respondents revealed that the respondents are within the age category of 26 – 35 years were the highest respondents, representing 59.9% of the population while the least of 3.0% of the respondents are within the age category of 46 – 55 years. About 17.8% are within the age of 36 – 45 years' age category, 19.3% of the respondents are below the 25 years of age. The results also showed that 30.2% have below 5 years working experience, 50.5% have 6 – 10 years working experience, 12.4% have 11 – 15 years working experience, 6.9% have 16 years and above working experience. This indicates that majority of the respondents, who are employees in the Nigerian Bottling Company used for this research were experienced staff, whose knowledge and information provided are reliable and dependable in achieving the purpose of the study.

IV.2 Level of eco-design practices in Nigerian bottling company

The result of the descriptive analysis on the level eco-design practices as shown in Table 1 revealed the mean value for design for raw material (DRM) (m= 3.69), design for manufacturing (DM) (m = 3.95), design for distribution (DD) (m = 4.14), design for product use (DPU) (m = 4.13) and design for end of life (DEL) (m = 4.38). The result indicates that eco-design is moderately implemented in the Nigerian Bottling company.

Table 1: Level of eco-design practices in Nigerian bottling company

Code	Description	Mean	Std. Deviation
DRM	Design for raw materials	3.6894	1.15377
DM	Design for manufacturing	3.9468	1.07027
DD	Design for distribution	4.1361	1.11777
DPU	Design for product use	4.1337	.98532
DEL	Design for end of life	4.3775	1.14747

Note: Low = 1-2.67, Moderate = 2.68- 4.34, High = 4.35-6

IV.2.1 Design for raw materials

The descriptive analysis of design for raw materials as shown in Table 2 indicates that selection of raw materials, and use of non-hazardous materials and selection of materials with low energy content are moderately practiced while using recyclable materials for production is highly implemented in NBC.

Table 2: Descriptive analysis of design for raw material

Code	Description	Mean	Std. Deviation
DRM1	Our company select materials with low impact	3.19	1.583
DRM2	Our company make use of Non-hazardous materials	3.76	1.528
DRM3	Materials used by our company can be recycled at the end life	4.58	1.547
DRM4	Our company select material with low energy content	3.22	1.474

Note: Low practices = 1-2.67, Moderate practices = 2.68- 4.34, High practices= 4.35-6

IV.2.2 Design for manufacturing

The descriptive analysis for the design for manufacturing as shown in Table 3 revealed that there is moderate practices of reduction of energy consumption, optimization of production technique and reduction of manufacturing processes while reduction of waste generation id highly practiced by NBC.

Table 3: Descriptive analysis of design for manufacturing

Code	**Description**	**Mean**	**Std. Deviation**
DM1	We reduce the consumption of energy	3.82	1.385
DM2	Our organisation production techniques are optimised	4.21	1.240
DM3	We reduce waste generation	4.41	1.351
DM4	Manufacturing processes are reduced	3.35	1.278

Note: Low practices = 1-2.67, Moderate practices = 2.68- 4.34, High practices= 4.35-6

IV.2.3 Design for distribution

The mean values of the items used in measuring design for distribution as shown in Table 4 indicated that packaging of item to have a second life, planning the transport mode of the company to reduce environmental impacts and using efficient distribution mode are moderately practiced by NMC while avoiding over packaging is highly practiced in NBC.

Table 4: Descriptive analysis of design for distribution

Code	**Description**	**Mean**	**Std. Deviation**
DD1	Packaging is designed to have a second life	3.95	1.427
DD2	We avoid over packaging	4.39	1.445
DD3	We plan the company transport mode to reduce environmental impacts	4.04	1.339
DD4	Distribution mode are efficient	4.16	1.341

Note: Low practices = 1-2.67, Moderate practices = 2.68- 4.34, High practices= 4.35-6

IV.2.4 Design for product use

The mean value for design for product use as shown in Table 5 revealed that low energy consuming products moderately used. Also, wastage of energy and consumables and reducing environmental impact at the stage of users are moderately practiced by NBC. However, there is a high level of practising clean consumables during use.

Table 5: Descriptive analysis of design for product use

Code	Description	Mean	Std. Deviation
DPU1	Product are of low energy consumption	3.53	1.365
DPU2	No wastage of energy/consumables	4.18	1.375
DPU3	We have together to reduce environmental impact in the user stage	3.98	1.380
DPU4	Clean consumables during use	4.84	1.178

Note: Low practices = 1-2.67, Moderate practices = 2.68- 4.34, High practices= 4.35-6

IV.2.5 Design for end of life

The mean value for the design for end of life as shown in Table 6 revealed that only optimization of end-of-life system is moderately practiced. The remaining items measuring design for end of life such as recycle material, clean waste treatment processes and designing in such a way that products/materials can be recycled are highly practiced by NBC.

Table 6: Descriptive analysis of design for end of life

Code	Description	Mean	Std. Deviation
DEL1	We Recycle material	4.35	1.621
DEL2	Optimisation of end-of-life system	3.98	1.342
DEL3	Clean waste treatment process	4.74	1.240
DEL4	Our products have been designed so that their materials can be recycled	4.44	1.385

Note: Low practices = 1-2.67, Moderate practices = 2.68- 4.34, High practices= 4.35-6

IV.3 Assessment of measurement model: items loadings, Average variance extracted and composite reliability

This study assessed the measurement model through the convergent validity which indicates the degree to which several items measuring a certain concept agreed. The loadings, average variance extracted (AVE), and composite reliability (CR) was assessed for the achievement of validity. The result of the statistical analysis as shown in Table 7 indicates a good item loading above the threshold of 0.4 recommended by Hair et al., (2013). The result of internal consistency revealed that the values for composite reliability are all above the threshold values of 0.7 indicating a good internal consistency among the constructs. In addition, the result of the AVE shows that the values of all the construct are well above the threshold value of 0.5 indicating that the amount of extracted variance by the latent variables are above 0.5. These results indicate that the values of the item loading, composite reliability and AVE all exceed the threshold values and hence, achievement of convergent validity.

Table 7: Measurement model for the study

Construct	Items	Loadings	Composite Reliability	AVE
Design for Distribution	DD3	0.915	0.93	0.869
	DD4	0.949		
Design for End of Life	DEL1	0.908	0.887	0.665
	DEL2	0.718		
	DEL3	0.774		
	DEL4	0.849		
Design for Material	DM1	0.670	0.876	0.643
	DM2	0.902		
	DM3	0.931		
	DM4	0.667		
Design for Product Use	DPU1	0.762	0.843	0.644
	DPU2	0.896		
	DPU4	0.740		
Design for Raw Material	DRM2	0.985	0.815	0.696
	DRM4	0.650		
Environmental Performance	EVP1	0.846	0.891	0.732
	EVP2	0.927		
	EVP3	0.788		
Financial Performance	FP1	0.899	0.932	0.821
	FP2	0.945		
	FP3	0.873		
Operational Performance	OP1	0.905	0.882	0.79
	OP3	0.872		

IV.4 Assessment of Structural Model

This section presents the results of the hypothesized relationships of the study. the PLS path analysis was assessed through the structural model to evaluate the effect of eco-design practices on performance of NBC.

IV.4.1 Effect of eco-design on financial performance of NBC

Table 8 presents the result of the standard path co-efficient (β), standard error, t-value and the decision taken on the hypotheses. The result provided an evidence of significant effects of design for distribution (DD) ($\beta = -0.330$; $t = 3.067$, $P < 0.05$), design for manufacturing ($\beta = 0.824$, $t = 8.155$, $P < 0.05$); design for product use (DPU) ($\beta = 0.269$ $t = 2.503$, $P < 0.05$); and design for raw material (DRM) ($\beta = -0.178$, $t = 2.218$, $P < 0.05$) on financial performance. However, the result revealed that design for end of life (DEL) ($\beta = -0.129$, $t = 1.348$, $P > 0.05$) did not show evidence of significant effect on financial performance (FP) of NBC.

IV.4.2 Effect of eco-design on environmental performance

As shown in Table 8 the path analysis of the hypothesized relationships between the dimension of eco-design and environmental performance revealed evidences of significant effect of design for manufacturing (DM) (β = 0.535, t = 5.922, P < 0.05) and design for end of life (DEL) (β = -0.360; t = 3.466, P < 0.05) on environmental performance (EVP). However, the findings could not find an evidence on the effect of design for distribution (DD) (β =-t = 0.849, P > 0.05); design for product use (DPU) and (β = 0.069, t = 0.584, P > 0.05) and design for raw material (DRM) (β = -0.050, t = 0.419, P > 0.05) on environmental performance (EVP

IV.4.3 Effect of eco-design on operational performance

The result of the path analysis between eco-design and operational performance as shown in Table 8 revealed evidences of significant effect on the relationship between design for distribution (DD) (β = 0.490, t = 4.296, P < 0.05), design for end of life (DEL), (β = -0.388, t = 3.793, P < 0.05), design for raw material (β = -0.236, t = 2.770, P < 0.05) and design for manufacture (DM), (β = 0.583, t = 5.436, P < 0.05) on operational performance of NBC. However, the study could not find an evidence of significant effect of design for product use (DPU) (β = -0.197, t = 1.535, P > 0.05) on operational performance of NBC.

Table 8: effect of eco-design on performance of NBC

Hypotheses	**Relationship**	**Beta**	**Std Dev**	**T - Values**	**P Values**	**Decision**
H_{1a}	DD -> FP	-0.330	0.108	3.067	0.002	Significant
H_{1b}	DEL -> FP	-0.129	0.096	1.348	0.178	Not-Significant
H_{1c}	DM -> FP	0.824	0.101	8.155	0.000	Significant
H_{1d}	DRM -> FP	-0.178	0.080	2.218	0.027	Significant
H_{1e}	DPU -> FP	0.269	0.107	2.503	0.012	Significant
H_{2a}	DD -> OP	0.490	0.114	4.296	0.000	Significant
H_{2b}	DEL -> OP	-0.388	0.102	3.793	0.000	Significant
H_{2c}	DM -> OP	0.583	0.107	5.436	0.000	Significant
H_{2d}	DPU -> OP	-0.197	0.128	1.535	0.125	Not-Significant
H_{2e}	DRM -> OP	-0.236	0.085	2.770	0.006	Significant
H_{3a}	DEL -> EVP	-0.360	0.104	3.466	0.001	Significant
H_{3b}	DD -> EVP	0.112	0.132	0.849	0.396	Not-Significant
H_{3c}	DM -> EVP	0.535	0.090	5.922	0.000	Significant
H_{3d}	DPU -> EVP	0.069	0.118	0.584	0.559	Not-Significant
H_{3e}	DRM -> EVP	-0.050	0.119	0.419	0.675	Not-Significant

V. DISCUSSION

The significant effect of design for distribution, design for manufacturing and design for raw material on financial performance indicates negative values which imply that the more firms implement these dimensions of eco-design the lower their financial performance except for design for product use which implies that increase in the design for product use will improve the performance of the firms financially. Also, the relationship between Design for end of life (DEL) and financial performance implies that if company continues to design for end of life it will affect the financial performance negatively. However, the relationship is not significant but provided a tendency because of the negative value.

The significant positive effect of design for distribution on operational performance implies that the more Nigerian bottling company spends on design for distribution the more if enhances its operational performance. However, the negative effect of design for end of life (DEL) on environmental performance means that a unit increase in design for distribution would lead to

design for raw materials (DRM) on environmental performance (EVP) implies that a unit increase in design for raw materials will lead to decrement in environmental performance. These findings are in line with the result of Wakulele *et., al* (2016), that the design for distribution, design for raw material has a significant effect on financial performance. The findings also conform with Laari (2016) on the results of financial performance that environmental collaboration with customers improves the return on investment and return on asset and that profitability of a company might be improved through better utilisation of vehicle. However, this finding also conflicts with the findings of who argues that eco-designs are not connected to financial performance improvement (Yeung, Selen, Zhang, & Huo, 2008).

VI. CONCLUSION AND RECOMMENDATION

The study concludes that there is a moderate level of eco-design practices for design for raw materials (DRM), design for manufacturing (DM), design for distribution (DD), design for product use (DPU) and design for end of life (DPU) in Nigerian company. Based on the findings of this study, it is recommended that manufacturing firms should focus more on selection of materials with low impact as this will improve environmental performance. also, there is need to utilise products that are of low energy consumption and attention of the firms should be focused on reduction of manufacturing processes to reap the benefit of eco-design practices in manufacturing firms.

VII. SUGGESTION FOR FURTHER STUDIES

This study collected data from only the Nigerian Bottling Company, however, this may limit the ability to generalize the result of the study across other industrial sector with different production processes. Hence, future studies are encouraged to increase the scope of the study across different industry sectors to enhance the generalization of the findings.

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