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Sustainability-Oriented Practices of Eco-Innovation, Eco-Commitment and Organizational Performance of A Developing Economy

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Abstract **- This study presents an empirical investigation of Sustainability oriented practices of Eco-innovation, Eco-commitment and organizational performance of a developing economy. This study was also motivated by the need to solve the environmental problems caused by the activities of profit driven entrepreneurs in developing economy as well as exploring the benefits to organizations. The study was guided by three key objectives, from which appropriate research question and hypotheses were formulated. The specific objectives of this study were (1) to ascertain the extent to which eco-commitment practice affect the selected manufacturing firms employee job satisfaction. (2) To establish the degree to which eco-innovation affect market share of selected manufacturing firms in a developing economy. This study adopted the survey design. Simple random sampling technique was used in selecting the 10 manufacturing firms in Nigeria. A sample size of 543 respondents was determined from the population of 5705 drawn from management, middle and lower cadre of the selected manufacturing firms using Cochran (1977) statistical formula. A stratified sampling technique was also used to determine the proportional allocation of questionnaire to management cadre, middle cadre and lower cadre. Designed questionnaire and personal interview were used for primary data collection. The questionnaire was structured on 5-point Likert scale. The validity of the instrument was ascertained using content validity. The instrument was checked for Reliability using test re-test method through Cronbach alpha with a value of 0.90, which shows consistency in the items of survey. Data were analyzed and the hypotheses were tested using linear regression analysis. Probability level of significance was given at 5%. Data were presented using simple percentage. Findings revealed that Eco-commitment practice had a significant and positive effect on employee job satisfaction (r=.514a;F=88.065;T=9.384;p-.000). Eco-innovation had a positive effect on the market share of selected manufacturing firms in a developing economy. In conclusion, the implementation of green business practices, principles and processes will lead to very positive outcome that will be visibly manifested in the organization and the environment.**

Index Terms **- Sustainability oriented practices; Eco-commitment; Eco-innovation; ecopreneur; developing economy; productivity; Employee job satisfaction; performance; manufacturing firms; Market Share.**

I. INTRODUCTION

Sustainability-oriented eco-innovation refers to a process of making calculated changes to an organization's philosophy and values as well as to its processes, products or practices to serve the specific purpose of creating and realizing social and environmental value in addition to business or economic returns. Sustainability business practices in this paper refers to the process of making business decisions and taking necessary actions that are in the interest of protecting the natural world by reducing the business negative impact on the environment which helps to reduce cost of production as well as increase business returns (Chukwuka 2018). This is a recent trend of doing business and has metamorphosed into a continuous call by ecopreneurist, the media, international conventions, as well as United Nations Organization and International Conference on Climate Change and Global Warming. This call is as a result of the turbulent nature of our business environment and the undervaluing natural resources. Developing economies of the world today are having greater percentage of the world environmental problems (World Bank, 1995; 117), hence the need for this research. Green business initiatives refers to all the related projects with a specific aim of helping businesses reduce the environmental impacts of their business operations as well as also helping them to save money (Chukwuka 2016). This means that they will use fewer raw materials, less natural resources, less energy, and less water which will lead to producing less waste and less cost of running the business. Developing economies of the world today are having a greater percentage of the world environmental problems which can be largely attributed to the activities of profit driven entrepreneurs. In pursuit of profit, entrepreneurs have carried out activities that resulted in the turbulent nature of our business environment and the negative environmental externalities as well as the undervaluing natural resources, leading to their over-exploitation and depletion which constrains sustainable development and the performance of business organizations (International Conference on Climate Change and Global warming 2016). Environmental degradation is a major cause of productivity losses (World Bank, 1995; 117). The crude oil exploration and exploitation activities of multinational oil companies in South-South Nigeria have led to oil spillages, gas flaring and depletion of natural resources as well as water and air pollution through oil spills and carbon dioxide emission by oil exploration heavy duty engines which affect manufacturing firms productivity (World Bank, 1995;117). Oil Spillages, gas flaring, land take, construction activities of multinational oil companies have resulting to income loses and lack of profitability of business firms in Niger Delta region of Nigeria (Opukri and Ibaba 2008). This is reflected in their poor product quality and limited quantity which is presented to the market at an expensive rate (Oteh and Eze, 2012).Gas flaring generates heat that kills vegetation around the flare

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area, destroys mangrove swamps and salt march, suppresses the growth and flowering of some plants, induces soil degradation, and diminishes agricultural production (UNDP, 2006; 186, Mba, 2000; 223). This situation has affected the productivity and market shares as well as employee job satisfaction of the manufacturing firms that operate in the region and the sustainable development of the host communities (UNDP,2006;186,Mba,2000;223). These environmental challenges have also led to lack of jobs for the youth which have led to youth agitations and restiveness (Opukri and Ibaba 2008). It is estimated that the manufacturing sector in Nigeria has to bear extra indirect costs amounting to sixteen percent of sales because of bottlenecks in the business environment. Loss due to poor power supply amount to 10 percent of sales and production cost, while, losses on transit occasioned by dilapidated road networks accounts for 4% of sales, is quite significant (Oteh and Eze, 2012). This affects business by making their products uncompetitive both in terms of quality and prices.
Inspite of all these business environmental challenges, Green business initiative has been suggested by McEwen (2013) as most potent and credible alternative in solving all business environmental and performance problems of developing economy.

II. REVIEW OF RELATED LITERATURE

A. Conceptual Review of Sustainability Practices of Green Business, Eco-innovation, Eco-commitment and organizational Performance

Sustainability oriented practices of an ecopreneur refers to all the related projects with a specific aim of helping businesses reduce the environmental impacts of their business operations as well as also helping them to save money (Chukwuka 2018). This means that they will use fewer raw materials, less natural resources, less energy, and less water which will lead to producing less waste and less cost of running the business.Green business initiative involves five models of being environmentally friendly; "five Rs" namely: Reduce, Reuse, Recycle and the new introductions, Repair and Rethink. All the "five Rs" are taking into consideration especially rethinking part while going green. The *Reduce* refers to the reduction in the use of natural resources and the reduction in waste accumulation. *Reuse* is defined as the creation of mechanisms that ensures that products that meet today's needs can also meet future needs. *Recycle* refers to the process of converting waste into a reusable material. *Repair* in the context of green business means amending a damaged product so that it can be transferred into a reusable material instead of discarding it out rightly. *Rethink* involves the process of thinking through it over again in order to get a creative and innovative solution to the environmental problems (Chukwuka 2016). Green business initiative in the organization has the potential to affect many areas of an organization, as well as organizational and employee productivity. Some researchers have reviewed that the positive impact of green business initiative to the organization include fewer employee sick days, reduced cost of running the business, increased employee satisfaction and increased employee productivity (Nollman 2013). Sustainability Victoria and the Kador Group (2011) cited in Nollman (2013) in their study, affirmed that one third of sick leave could be attributed to the work environment. Green business initiative will lessen the negative environmental impact of business operations as well as enhance the atmosphere and wellbeing for the workplace. The US green building council defines green building as one that has reduced significantly the negative impacts not only on the environment but also on the inhabitant of the building (Abbaszadeh, Zagreus, Lehrer & Huizenga,2014).

This paper considers the following sustainability practices of green business initiatives for the study: Recycling of firms and societal waste, going paperless, producing products that can be recycled, Production of Hybrid cars and engines with less carbon emission. Alternative sources of energy (geo-thermal, solar, coal etc.), Planting and the replanting of tree program of the firms and the production of energy bulbs for less energy consumption, Recent manufacturing of solar cars and electrified vehicles without the use of premium motor spirit (Fuel).

B. Eco - Innovation

Eco-innovation refers to the development of products and processes that contribute to sustainable development as well as the application of knowledge to foster the direct and indirect ecological improvements (OECD 2009). James (1997) defines eco-innovation as new products and processes which provide customer and business value but significantly decrease environmental impacts. Rennings (2000), cited in Kainrath (2009) believe that Eco-innovation is all measures of relevant actors (firms, politicians, unions, associations, churches, private households) which; develop new processes, products, behaviour and ideas, introduce or apply them, and which contribute to reducing the environmental burdens or to ecologically specified sustainability targets. Rennings (2000) also suggests that the distinctive feature of eco-innovation as compared to innovation in general is a concern about the direction and content of progress. In particular there have been concerns about whether innovation leads to the mitigation or resolution of an environmental problem. The "Innovation Impacts of Environmental Policy Instruments" project introduced the term environmental innovation and defined it very broadly.Rennings,(2000) believes that one way of measuring the reduction in environmental impact achieved by an eco-innovation is by stating the so-called factor X reduction in resource use. The factor 4 and factor 10 concepts originate in the Wuppertal Institute and are promoted by Von Weizsäcker and others as creative ways to reduce the resource intensity of economic activity (Halila and Hörte, 2006). Factor reduction refers to the idea of reducing the resource use per unit of service or product by a certain factor and can be achieved through a combination of technological, financial and lifestyle changes. It is vital to point out here, that the idea behind factor X reduction is that the actual environmental effect of innovation rather than the intention behind the innovation determines if a change is environmental". Klimova and Zlek, (2011), argue that green business initiative is also important because eco-innovations will be the future competitive advantage of companies and countries. They argue that if companies and countries want to be successful in the international market, they cannot rely on having low cost as their competitive advantage; but rather on new and innovative environmental technologies, services and process which will be the more important sources of competitive advantage. The long term sustainability of our economic system does not depend only on quantitative

growth, but also on the ecological aspects of the growth and sustainable development (Klimova&Zitek, 2011). In addition, there are also some practical business reasons that justify the need for green business initiatives to solve our environmental problems. First, our finite resources, for example fish, minerals or gas are limited in their supply. Once consumed, many of them cannot be recreated and we will be left with diminishing or no national resources, if we do not sustain them. Also, because of economic activity and consumption, most of our resources become waste. As a result, we have the problem of pollution, which seriously affect humans and the ecosystem and lead to greenhouse gas accumulation and potential climate change (Volery, 2000, p. 542). To sustain them, ecopreneurship is important to constantly look for alternatives, e.g. recycling or new sources of energy, such as wind, water, and solar (Arber and speech, 1992: Barnes, 1994). Second, the global population growth is also influencing ecopreneurship. The world population is expected to increase by 50% by 2050 and with it will come an increase in consumption (World Business Council for Sustainable Development 2002). Although part of thus consumption is important for relieving poverty in many emerging countries, most it will be done by affluent consumers, and can have negative impact on the ecosystems (Volery, 2002, p. 542). Ecopreneurship is therefore important to find the new technologies to protect the environment and to ensure that there are enough resources to fill the needs of both the current population and future generations (Volery, 20012).

Biodiversity loss also justified entrepreneurship action to solve environmental problems. Volery (2002), posit that "the rates of takeover of wild life habitat, and of species extinction are the fastest they have ever been in human history and are accelerating. Goodland (1991) also reported that the tropical forest, the world's richest species habitat has already been 55% destroyed and the loss in containing. Given the need for environment sustainability, there is need for a new kind of entrepreneur who will incorporate environmental concerns into the consideration of their bottom-line (Volerny 2002).

C. Harnessing Innovation Potential of Ecopreneurs

McEwen (2013) highlights that given the growth of ecopreneurship, the question now is how we harness the innovation potential of ecopreneurs to exploit the opportunities within environmental degradation. In other words how do we foster the development of new entrepreneurial firms that will create the innovation necessary to solve environmental problems? Shane and Venkataraman (2000) cited in McEwen (2013) believe that"entrepreneurial action is created at the nexus of two phenomena the presence of enterprising individuals and the presence of lucrative opportunities. Ecopreneurs are the enterprising individual some are motivated by profit and start businesses that happen to be green, while others have a sustainability orientation and are motivated by environmental need. Their businesses are founded on the principle of sustainability and they seek to combine environmental awareness with conventional entrepreneurship (Schrick, et al, 2002) Lucrative entrepreneurial opportunities exist within the environmental degradation e.g. The problem of climate change, pollution, energy etc.

Shane (2003) reveals that the nexus is the place where the entrepreneur interacts with the environment e.g. environmental degradation, to identify opportunities. How they interact and whether opportunities recognition and exploitation takes place depends on the resources the entrepreneurs has at his or her disposal and the resources available in the environment. Given that the entrepreneur environment interaction is no critical to creating entrepreneurial action necessary for developing environment innovations.

Schumpeterian views on green business initiatives provided the theoretical basis for environmental entrepreneurship. Schumpeter (1942) establishes that entrepreneurs are the innovators and as society's needs evolve the entrepreneur provides the innovation or "creative destruction" that gives society a new way of addressing problems. He argues that "environmental problem are inherently calls for innovation, as most of them are caused by the outdated applications of old, polluting and inefficient technology". Giving that the current solutions to our environmental problems are inadequate for sustainability, there is need for entrepreneurial action to develop something new, whether it is a production method, technological development product/services distribution system, or even a new organizational form. (Lennoy& York, 2011; Beveridge&Gug, 2005).

Ecological modernization theorist, believe that "the environmental problems facing the world today, act as a driving force for future industrial activity and economic development" (Murphy, 2000). The theory calls for the progressive modernization theory.

The table 1 below presents the different types of Sustainability practices of an Ecopreneurs related to each category.

Table 1: Typologies of an Ecopreneur

Reference	Types of Ecopreneurs
Volery, T. (2002)	Environmental conscious Develops innovation that either reduces resources and impact or improve cost efficiencies. Green entrepreneurs Aware of environmental issues and have their business in the environmental market place
Walley and Taylor (2002)	Innovative opportunist Financially oriented entrepreneur who Spots a green niche or business opportunity that happens to be green. Ad hoc or accidental entrepreneur Spots opportunities that are green, rather than seek out a niche in green spaces. Visionary Entrepreneur Built their business based on sustainability principles Ethical maverick Sets up alternative style business on the fringes of society

Linnanen (2002)	Self employer Advocates nature oriented enterprises e.g. wild life habitat preservation, eco tourism etc. Low desire to change the world and low financial drive. Opportunist Involved in environmental technology to help businesses and communities reduce environmental load on water, air and soil. They have a low desire to change the world and high financial drive. Non –Profit business Entrepreneur have high desire to change the world and low financial drive Successful idealist Entrepreneurs have high desire to change the world and high financial drive.
Isaak (2002)	Green Business Entrepreneurs did not start green business from scratch, but later discovered the advantages of greening their existing business. Green –Green Business Entrepreneurs designed business to be green in its products an process from scratch.
Schick, Marxen, Freiman (2002)	ECO-dedicated Consistently adopts environmentally friendly business practices ECO –Open Partially adopts environmentally friendly business practice. ECO- reluctant Adopts environmentally friendly business practices only when they are forced by regulations.
Schaltegger (2002)	Alternative actors Businesses exist to support alternative lifestyle e.g. types of counter culture Bioneers Inventors with strong RandD focus in high technology sectors e.g. alternative energy sources.

Source:McEwen (2013). Ecopreneurship as a solution to environmental problems: Implication for intention. *Journal of Academic Research and Social Sciences; Business Venturing*, 22(1),50-76

Table 2: Diminishing Capacity of Critical Global Ecosytems

Ecosystem	Diminishing capacity
Agriculture	40% of agricultural lands worldwide have been severely degraded through erosion, solemnization, nutrients depletion, biological degradation and pollution.
Costal	20% of fish and shellfish has been diminished due to over fishing destructive trawling technique
Ecosystem	Diminishing capacity and destruction of nursery habitat. • Pollution problems have plagued coastal lands because of use of synthetic chemicals fertilizers. • Global warming impacts ecosystem through rising see levels, warming of the ocean temperatures and changing storm frequency.
Forest	• More than 20% of global forest covered has been removed due to logging and conversion to other land uses. • Deforestation has significant impact on biodiversity, loss of unique plants and animal species.
Fresh water	Humans currently use more than 50% of all accessible fresh water; by 2025 demand will reach 70%.
Grassland	Road building, land conservation and human induced fires have caused significant loss of grassland and thus loss of biodiversity.

Source: World Resources Institution (2000) and Cohen and Winn, 34.

D. Organizational Performance

Organizations and their managers, express Cole (2004) are tended to be judged on their performance in terms of business outcomes such as turnover, profits, yields return in investment in terms of their agreed department/ unit objectives and in terms of how they have performed generally in carrying out their responsibilities as stated or implied in their job description. These are organizational performance variables. Organizations are assessed by or assess themselves to find out to what extent they have achieved their objectives. This process of determining the extent of organization's performance level can also be called organizational effectiveness in the literature of organizational theory (Onwuchekwa 1993). The relevance of organizational performance either in industry or market leadership is expressed in Eromaguru (2011:15) that in the modern word, the ultimate test for industry or market leadership is how well a company achieves a dramatic improvement in contemporary measure of organizational performance by product or service argumentation. The implication of this is that what is relevant in business transaction is the resultant outcome in terms of turnover, profit or return on investment.

i. Performance Management

For an organization to function effectively, performance strategies should be adopted and managed. Ezigbo (2011), explains performance management as a means of getting better results from the organization, teams and individuals by understanding and managing performance within an agreed framework of planned goals, standards and competence requirements. By so doing what is to be achieved by an organization, as well as an approach for managing and developing people, so as to achieve the set goals in a short or long time, would be clearly established. The end goal of performance management is to improve performance so as to realize individual's teams and organizational effectiveness (Ezigbo, 2011).

ii. Organizational Performance Measures

Gbadamosi (1995) states that Organizational performance or effectiveness is as follows;

Productivity or Output: It remains one of the widely used criteria for determining organization and its coping ability. The criteria also emphasize the end. Critics also point out that this criterion reflects past effectiveness, while saying nothing about the present or future again while the productivity indices are being used, the current condition might have changed. Lastly, the quality and efficiency of production are played down.

Goal Attainment: This is complicated by the tendency of goals to change, to be vaguely stated or to exist in sets at different levels.

Also, because there are multiple goals some will be in conflict. However, goals need to be evaluated before use since; for instance, it would be misleading to talk of effectiveness in attaining wrong or inadequate goals.

Profitability: this criterion is based mainly on accounting data. This is often affected by unanticipated fluctuation, external to system, such as markets, sales and prices.

Morale, Turnover, Absenteeism: these criteria have been criticized as in consistent, insignificant and difficult to evaluated and interpret. Another problem is their differential sensitivity to additional factors, such as the nature and volume of work, organization levels and time of occurrence.

Employee job Satisfaction: it is usually measured by a self-report questionnaire. It is obviously subjective. More important, however, is the fact that it does not necessary lead to organizational effectiveness or ineffectiveness.

Market Share; this is a measure of organizational performance because it shows the extent of dominance of a firm's product to a target market. It shows the degree of acceptability of a firm's product by it consumers.

Productivity is a measure of performance. Organizational performance is measured among several others including customer satisfaction, employee satisfaction, operational efficiency, cost effectiveness, productivity, service quality, market share, profitability (Poister 2003). Sometimes productivity is narrowly defined as "output per unit input" or simply put "how much and how well we can produce from the available resources" (Bernolak 1997) cited in Nollman (2013). This paper considers productivity as a measure of performance for this study.

E. Environmental Commitment (Eco-Commitment)

Commitment generally, is the willingness to work hard and give your energy and time to a job or an activity. (Motivation, Vision, and Commitment), the vision an entrepreneur follows may be influenced by different factors. These factors are also the case for the ecopreneur's vision, and because the ecopreneur follows an ecopreneur vision, it is preceded by one, or a mixture of three forms of environmental commitment: affective commitment, continuance commitment and normative commitment". Keogh and Polonsky (1998) modify the model of organizational commitment proposed by Meyer and Allen (1991) and its three dimensions of engagement stated above, so that it becomes a commitment to the environment, and then apply it to entrepreneurship. If not correctly pointed out, commitment to the environment may appear like commitment to an idea or issue.

Keogh and Polonsky (1998) argue that the commitment to ideas is problematic, not least because it is not very well researched. They propose instead that the environment is regarded as an entity, not only a physical entity, but also an entity made up of the various forces that aim to bring it on the company agenda, like regulations, market forces and internal forces. Both individuals and organizations can display commitment in this model.

Affective Commitment;

Affective commitment is an emotional attachment to the environment, something that makes the consideration of environmental concerns and the achieving of environmental goals an end in itself. This is the strongest form of environmental commitment, and an ecopreneur operating under affective commitment to the environment will always strive for the most environmentally friendly solution possible. This will not only lead to more radical eco-innovations, but it will also result in exploiting eco-opportunities that others don't see or perceive as marginal or uninteresting (Keogh and Polonsky 1998).

Continuance Commitments

Continuance commitment is concerned with the economic and social cost of disregarding environmental concerns, or what economists call opportunity cost. Someone operating under continuance commitment strongly respects social and economic norms, and will, therefore, direct efforts to pursue

eco-opportunities which are socially but also economically "acceptable". Since this approach aims to minimize tangible and intangible cost, as in the form of a tarnished public image, to the company, which may be arising from disregarding environmental concerns, the eco-opportunities. It exploits, and the eco-innovations it delivers will be more limited in scope than those of the ecopreneur operating under affective commitment (Keogh and Polonsky, 1998).

Normative Commitments

Normative commitment means that the person guided by it will respond to a feeling of obligation or indebtedness. This deficit may be caused by external influences, such as environmental protection laws, or by the individual identifying obligations to the environment. One key feature of this form of commitment is that the people and organizations guided by it, will exploit eco-opportunities and produce eco-innovation only to the point their feeling of indebtedness warrants them to, and limit consideration for the environment that goes beyond that point. When environmental legislation or rules cause the sense of indebtedness, this leads to the ecopreneur only fulfilling the bare minimum requirements, and this form of commitment may then be regarded as weakest (Keogh and Polonsky, 1998).

III. EMPIRICAL REVIEW

Delmas and Pekovic (2012) investigated the effect of green business practices on employee's productivity in French green companies. They were set out to solve the problem of how a firm's environmental commitment affects its productivity. The methodology used for the study is survey design which includes the collection of data from a survey of employees at 5,220 frenches companies, randomly selecting two employees from each company for a pool of more than 10,000 people. Companies that had voluntarily adopted international standards and labels such as "trade "and companies with International Organization for Standardization's ISO 14001 certification, a voluntary industry standard program, were also considered green for the purposes of the study. "It's a counterpoint to people thinking that environmental practices are detrimental to the firm." The research findings includes that companies that adopt eco-friendly green practices have employees that are more productive than those that do not. On average, employees at companies that observe eco-friendly practices were 16 percent more productive than average employees. Delmas (2012) further states that Adopting green practices aren't just good for the environment, "It's good for your employees and it's good for your bottom line. Employees in such green firms are more motivated, receive more training and benefit from better interpersonal relationships. The employees at green companies are therefore more productive than employees in more conventional firms" (Delmas 2013).

Nollman (2013) investigated effect of sustainability initiatives on workplace and employee productivity. The researcher goal was to solve a problem of what are the sustainability initiatives in workplace and employee productivity. The methodology used to arrive at his finding was a peer-review of academic journal database using performance measures and sustainability in the workplace. The study concluded that overall employee satisfaction and workplace productivity increased an average of 21.4% from the non-sustainable workplaces to the sustainable workplaces. Scores ranged from 1.30 to 2.36 with an average of 1.86 on the satisfaction scale.Russo and Fouts (2014), investigated the effect of corporate environmental sustainability on profitability and economic performance. They were set out to solve a problem of how corporate environmental sustainability, profitability and economic performance relate. The methodology used was survey design which includes the collection of data from a survey and the test of hypotheses with an analysis of 243 Firms over two years, using independently developed environmental ratings. Results indicate that "it pays to be green" and that this relationship strengthens with industry growth. They concluded by highlighting the study's academic and managerial implications, making special reference to the social issues in management literature. The finding of the study was that environmental sustainability, profitability and economic performance are positively linked and that industry growth moderates the relationship, with the returns to environmental performance higher in high-growth industries. Lin and Geng (2013) in a study done in Vietnam investigated "market demand, green product, and eco-innovation on firm's performance". This study examines how market demand affects green product innovation, and firm performance in the context of Vietnamese motorcycle industry. The study seeks to answer two key questions: how does market demand influence a firm's green product innovation? And how can green product innovation affect firm performance? The methodology used for the study was survey design through the collection of a total of 208 valid questionnaires from four leading foreign motorcycle firms in Vietnam. The finding shows that market demand is positively correlated to both green product innovation and firm performance; while green product innovation performance is also positively correlated to firm performance. In addition, this study also categorizes three types of green product innovation and discusses their effects on market demand and firm performance.

Delmas and Pekovic (2012) investigated effect of green business practices on employee's job satisfaction. They were set out to solve the problem of how a firm's environmental commitment affects its productivity and employee job satisfaction. The methodology used for the research was survey design through the collection of data from a survey of employees at 5,220 frenches companies, randomly selecting two employees from each company for a pool of more than 10,000 people. Companies that had voluntarily adopted international standards and labels such as "trade "and companies with International Organization for Standardization's ISO 14001 certification, a voluntary industry standard program, were also considered green for the purposes of the study. Their finding shows that On average, employees at companies that observe eco-friendly practices were 16 percent more productive as well as have more job satisfaction than average employees. Employees in such green firms are more motivated, receive more training and benefit from better interpersonal relationships. The employees at green companies are therefore more productive and have more job satisfaction than employees in more conventional firms study finds.

Mercyline and Kamande (2014) investigated an eco-efficiency and eco-commitment analysis of Kenyan

manufacturing firms". This study examines the linkage between the profitability of firms measured by Return on Assets (ROA) and environmental performance measured by eco-efficiency and eco-commitment and also the impact of a good Environmental Management System on profitability and eco-efficiency of firms. The methodology used for the study is survey design through which questionnaire was shared to six Kenyan manufacturing firms. The finding shows that there is a potential gain in the profitability of the firm by improving eco-efficiency in resource use. Further, proactive firms are found to perform better than reactive firms in terms of profitability and eco-efficiency but firms that combine both proactive and reactive EMS perform even better which shows the benefit of adopting commitment based approaches alongside the compliance based approaches to environmental management.

Singh and Panackal (2014) investigated youth ecopreneurship: A key for success of first generation entrepreneurs. This study examines how youth involvement in ecopreneurship can lead to youth employment and the host community profitability. Using ISM structural modeling as a methodology, study found that there is a strong link between entrepreneurism and environmentalism. They also found that there is a strong link between eco-opportunity and youth employment. They asserts that eco-opportunity create green jobs for environmental conscious youth. There are numerous job opportunities in green business because the sector is underutilized. Green business opportunities have not been harnessed, so more employment opportunities still hover around ecopreneurship practices. They recommended that youth should embrace eco-opportunity for job creation and host community development.

A. Theoretical Model Review

Ecological Modernization Theory

The proponent of Ecological Modernization theory also provides the rational theory for environmental entrepreneur (Hajer, 1995; Mol, 1995). According to the theory, it is possible to promote economic growth by giving higher priority to the environment. It is no longer necessary to trade off economic growth for environmental quality (Tillery and Young, 2009,). The capitalist system is seen as having the capacity to develop sustainable solutions to environmental problems. That capitalist drive for innovation can be harnessed to produce environmental improvements (Beveridge and Gug, 2005). Ecological modernization theorist believes that "the environmental problems facing the world today, act as a driving force for future industrial activity and economic development" (Murphy, 2000,). The theory calls for the progressive modernization theory sees it, entrepreneurs are the central agents of change in that process of transformation to avoid an ecological crisis (Gibbs, 2009: Mol and Spaargaren, 1993; Tillery and Young 2009). Entrepreneurial action therefore is the best solution to our environmental problems because this new generation of ecopreneur is seeking to combine environmental awareness and conventional entrepreneurial activity achieves entrepreneurial success (Anderson, 1998). Ecopreneurs have the potential to be a major force in the overall transition towards a more sustainable business paradigm (Schaper, 2002). The justification for using this theory is that ecological modernization theorist believes that "the environmental problems facing the world today, act as a driving force for future industrial activity and economic development" The theory also believe that it is possible to promote economic growth by giving higher priority to the environment. It is no longer necessary to trade off economic growth for environmental quality. This theory has served as a morale booster for ecopreneurs. This theory has given credence to the study of ecological sustainability.

IV. METHODOLOGY

This study adopted the descriptive survey design which allows for the collection of original data from the respondents, describes the present situation and problems in their natural setting and permits a sample representing the population to be drawn. This research design is considered most suitable for the study because it was well suited to the description and correlative nature of eco-innovation study, the questionnaire and oral interview collected quantitative and qualitative data of 543 employees of ten manufacturing firms in Nigeria (Management cadre, middle cadre and lower cadre) with rich ecopreneurship profiles were randomly selected. Out of the 543 questionnaires distribute, 528 were returned valid and 15 questionnaires were discarded for incomplete information. The data collected were useful in measuring the ecopreneurship variables and testing the specified hypotheses of the study, most of the data generated from the questionnaire survey were ordinal in nature (responses were mainly ratings measured on the Likert scale).

A. Discussion and Result

A total of five hundred and forty three questionnaires were distributed to the randomly selected ecopreneurship profiled firms in Nigeria. A total of five hundred and twenty eight were returned completed. Fifteen copies were invalidated for incomplete information.

Descriptive Analysis

Table 3: Eco-innovation affect market share of the selected manufacturing firms

Statement of variables	SA	A	U	D	SD	Mean	St.d
Eco-innovative practice is implemented in full scale in your firm.	150(28.41)	265(50.2)	55(10.4%)	30(5.7)	28(5.3)	3.9	.25
Eco-innovativeness to a greater degree affects positively your firm's market share.	285(54.0)	192(36.3)	13(2.5)	20(3.79)	18(3.4)	4.3	.23
Management and workforce participation in eco-innovativeness has led to high degree of customer's loyalty to your firm's product.	180(43.1)	190(35.9)	50(9.5)	70(13.3)	38(7.2)	3.7	.26
Eco-innovation generates new ideas and process that's positively associated with customer's satisfaction.	306(58.0)	58(10.9)	34(6.4)	100(18.9)	30(5.7)	1.4	.74
Eco-innovation generates new technologies in product manufacturing.	188(35.6)	295(55.9)	10(1.89)	18(3.4)	13(2.5)	4.2	.24

Source: Field Survey, 2016.

Table 3 shows the participants' responses towards the effect eco-innovation on market share of the selected manufacturing firms. The result shows that 150(28.41%) of the participants strongly agreed that Eco-innovative practice is implemented in full scale while 265(50.2%) agreed and 55(10.42%) are undecided. Meanwhile 30(5.7%) and 28(5.3%) disagreed and strongly disagreed respectively. With the mean and Std 3.9 ± .25, it therefore implies that in Eco-innovation practice is implemented in full scale.

Also the result of the study shows that 285(54.0%) of the participants strongly agreed Eco-innovativeness affects positively your firm's market share. About 192(36.3%) agreed and 13(2.5%) are undecided. Meanwhile, up to 20(3.79%) disagreed and 18(3.4%) disagreed. Going by the mean and Std of 4.3 ± .23, it means that the eco-innovation affects positively your firm's market share.

In addition, the result revealed that Management and workforce participation in eco-innovation has led to high degree of customer's loyalty to your firm's product with the mean and Std (3.7 + .26). This findings is due to 180(43.1%) who strongly agreed that in view Management and workforce participation in eco-innovativeness has led to high degree of customer's loyalty to your firm's product and 190(35.9%) agreed, 50(9.5%) are undecided. Only about 70(13.3%) and 38(7.2%) disagreed and strongly disagreed respectively.

Subsequently the study indicate eco-innovativeness of firm generates new ideas and process that's positively associated with customer's satisfaction with a mean and Std (1.4 + .74). In view of this, 306(58.0%) strongly agreed Eco-innovativeness of firm generates new ideas and process that's positively associated with customer's satisfaction and 58(10.9%) agreed while 34(6.4%) are undecided. Meanwhile 100(18.9%) disagreed and 30(5.7%) strongly disagreed.

Finally, the result of the study shows that 188(35.6%) participants strongly agreed that Eco-innovation generates new technologies in product manufacturing. While 295(55.9%) agreed and 10(1.89%) are undecided. However, 18(3.4%) participants disagreed and 13(2.5%) strongly disagreed. Going by the result of the study, the Eco-innovation generates new technologies in product manufacturing (4.2 + .24).

Table 4: To Ascertain how Eco-Commitment Practice Affect Manufacturing Firms Employee Job Satisfaction

Statement of variables	SA	A	U	D	SD	Mean	St.d
Eco-commitment practice in your firm is fully implemented.	305(57.8)	70(13.3)	47(8.9)	58(10.98)	70(13.3)	4.3	.23
Eco-commitment practice positively affects your firm's employee job satisfaction which results in emotional attachment to the environment.	180(34.1)	270(51.1)	20(3.8)	30(5.7)	28(5.3)	4.0	.25
Eco-commitment practice of your firm has increased your job satisfaction	250(47.3)	180(34.1)	15(2.8)	60(11.4)	23(4.4)	4.1	.24
Your firm has a constant training program for staff environmental sustainability awareness course on eco- commitment.	190(36.0)	200(37.9)	10(1.9)	100(18.9)	28(5.3)	3.8	.26
Eco-commitment practice in your firm involves an emotional attachment to the environment.	240(45.0)	60(11.4)	15(2.8)	103(19.0)	110(21.0)	3.4	.29

Source: Field Survey, 2016.

Table 4.7 shows the respondents responses on Eco-Commitment Practice Affect Manufacturing Firms Employee Job Satisfaction. More than average 305(57.8%) of the respondents strongly agreed that Eco-commitment practice of your firm is up to date. While 70(13.3%) agreed. However 47(8.9%) are undecided meanwhile 58(10.98) of the respondents and 70(13.3%) disagreed and strongly disagreed respectively. The result of the study shows that the Eco-commitment practice in your firm is up to date and fully implemented with a mean score of 4.3± .23.

The study also shows that 180(34.1) and 270(51.1%) strongly agreed and agreed respectively that the eco-commitment practice, positively affects employee job satisfaction which results in emotional attachment to the environment. While 20(3.8%) are undecided. On the contrary, 30(5.7%) and 28(5.3%) respondents disagreed as well as strongly disagreed respectively. This result indicates that Eco-commitment practice positively affects employee job satisfaction which results in emotional attachment to the environment with a mean and Std4.0 ± .25.

In addition, the result of the study identified that 250(47.3%) strongly agreed and 180(34.1%) agreed that Eco-commitment practice of your firm has increased employee job satisfaction. Less than average 15(2.8%) of the respondents are undecided meanwhile 60(11.4%) and 23(4.4%) disagreed as well as strongly disagreed respectively. With the mean and Std score of 4.1 ± .24, it implies that the Eco-commitment practice has increased your job satisfaction.

Similarly, the mean and Std3.8 ±.26 revealed that the firm has no constant training program for staff environmental sustainability awareness course on eco- commitment. The result is evident in 190(36.0%) and 200(37.9%) respondents

that strongly agreed and agreed respectively the firm has a constant training program for staff environmental sustainability awareness course on eco-commitment. While 100(18.9%) and 28(5.3%) disagreed and strongly disagreed respectively with 10(1.9%) undecided.

Subsequently the result of the study shows that 240(45.0%) of the respondents strongly agree that Eco-commitment practice of the firm involves an emotional attachment to the environment. While 60(11.4%) agreed, and 15(2.8%) are undecided. 103(19.0%) of the respondents disagreed and 110(21.0%) strongly disagreed. With the mean and Std 3.4 $\pm$ .29, the result shows that Eco-commitment practice of the firm involves an emotional attachment to the environment.

B. Test of Hypotheses

Hypothesis may be defined as a tentative statement made in order to draw out a relationship between two or more variables. Having given a careful analysis of response, the hypothesis earlier formulated in chapter one of this study is now tested.

Hypothesis one

H_i: Eco–Innovation has a positive and significant effect on market share of selected manufacturing firms

Table 5 : Descriptive Statistics

	Mean	Std. Deviation	N
Eco–Innovation	2.1794	1.42308	528
Market share of Manufacturing Firms	2.5840	1.44325	528

Source; SPSS version 17.0

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.874[a]	.764	.763	.69265	.369

a. Predictors: (Constant), Eco–Innovation
Source: SPSS version 17.0

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	.088		.542	.588
	Eco–Innovation	.862	.030	.874	29.012	.000

a. Dependent Variable: Market share of Manufacturing Firms

Source: SPSS version 17.0

Result Summary

R = .874[a]
R^2= .764
F = 841.711
T = 29.012
DW = .369

Interpretation

The descriptive statistics of the eco–innovation with a mean response of 2.18 + 1.42 and market share of manufacturing firms with a mean response of 2.58 + 1.44. This implies that that there is about the same variability of data points between the dependent and independent variables as there is no much difference in standard deviation values, in terms of the standard deviation scores.

R, the correlation coefficient with the value of .874, indicates that there is strong positive relationship between eco–innovation and market share of manufacturing firms. The R square, the coefficient of determination, shows that 76.4% of the variation in market share of manufacturing firms can be explained by eco–innovation. The remaining 23.6% is attributed to other factor. With the linear regression model, the error of estimate is low, with a value of about .69265. The Durbin Watson statistics of .369, which is not more than 2, indicates there is no autocorrelation. The regression sum of squares (403.828) is greater than the residual sum of squares (124.740), which indicates that more of the variation in the dependent variable is explained by the model; hence variation explained that the model is not due to chance.

The value of F-statistics = 841.711 shows that the model MS = .048 + .862(Eco-innovation) + e is significant. The extent to which eco–innovation affects market share of manufacturing firms with β = .874 value indicates a positive significance between eco–innovation and market share of manufacturing firms which is statistically significant (with t = 29.012) and p = .000 < 0.05. The significance value of (0.000) is less than 0.05, indicating that the model is significant.

The decision rule is to reject the null hypothesis if the probability value of (0.000) is less than the chosen 5% alpha level otherwise do not reject the null hypothesis Therefore, the null hypothesis is rejected and the alternate hypothesis is therefore accepted that Eco–Innovation has a positive and significant effect on market share of selected manufacturing firms.

Hypothesis two

Hi: Eco-commitment practice, positively affects employee job satisfaction of selected manufacturing firms.

Results:

Table 8 Descriptive Statistics

	Mean	Std. Deviation	N
Eco-Commitment Practices	2.4170	1.49803	528
Employee Job Satisfaction of manufacturing firms.	2.4534	1.38108	528

Source: SPSS version 17.0

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.785	.167		22.633	.000
	Eco-Commitment Practice	.558	.059	.514	9.384	.000

a. Dependent Variable: Employee Job Satisfaction of Manufacturing

Source: SPSS version 17.0

Result Summary

R = .514[a]

R^2= .264

F = 88.065

T = 9.384

DW = . .231

Interpretation

The descriptive statistics of the eco-commitment practice with a mean response of 2.42 + 1.50 and employee job satisfaction of manufacturing firms with a mean response of 2.45 + 1.38. This implies that that there is about the same variability of data points between the dependent and independent variables as there is no much difference in standard deviation values, in terms of the standard deviation scores.

R, the correlation coefficient with the value of .514, indicates that there is strong positive relationship between eco-commitment practice and employee job satisfaction of manufacturing firms. The R square, the coefficient of determination, shows that 26.4% of the variation in employee job satisfaction of manufacturing firms can be explained by eco-commitment practice. The remaining 73.6% is attributed to other factor. With the linear regression model, the error of estimate is low, with a value of about 1.28743. The Durbin Watson statistics of .231, which is not more than 2, indicates there is no autocorrelation. The regression sum of squares (145.966) is less than the residual sum of squares (406.083), which indicates that more of the variation in the dependent variable is not explained by the model; hence variation explained that the model is due to chance.

The value of F-statistics = 88.065 shows that the model Employee Job Satisfaction of Manufacturing Firms = 3.785 + .558 (Eco-Commitment Practice) + e is significant. The extent to which eco-commitment practice affects employee job satisfaction of manufacturing firms with β = .514 value indicates a positive significance between eco-commitment practice and employee job satisfaction of manufacturing firms which is statistically significant (with t = 9.384) and p = .000 < 0.05. The significance value of (0.000) is less than 0.05, indicating that the model is significant.

The decision rule is to reject the null hypothesis if the probability value of (0.000) is less than the chosen 5% alpha level otherwise do not reject the null hypothesis

Therefore, the null hypothesis is rejected and the alternate hypothesis is therefore accepted that Eco-commitment practice, positively affects employee job satisfaction of selected manufacturing firms.

C. Discussion of Findings

The discussion of results was addressed along with the objectives of the study as a pathfinder. The researcher focused on relating the findings of the study to prior research findings as shown in the literature reviewed.Each objective of the study has a statement of hypothesis formulated. The result of the study shows that Eco–innovation has a significant and positive effect on market share of selected manufacturing firms (r = .874a; F = 841.711; T = 29.012; p - .000). The finding of the above result has confirmed the relationship as revealed by the field survey, that eco-innovation has a significant and positive effect on market share of selected manufacturing firms. This finding agreed with the finding of Lin and Geng (2013), which investigation on the effect of market demand, green product, eco-innovation on firms performance show that market demands is positively correlated to firm performance. They also confirmed that green product innovation and performance is also positively correlated to firm performance.

The study similarly shows that Eco-commitment practice, positively affects employee job satisfaction of selected manufacturing firms (r = .514a; F = 88.065; T = 9.384; p - .000). This result is in agreement with Delmas and Pekovic (2012) that companies that adopt eco-friendly green practices have employees that are more productive and have more job satisfaction than those that do not. They also concluded that green companies are more productive than those that do not adopt green practice. Eco – friendly practices were 16 percent more productive than average employees. Nollman (2013) study on sustainability initiatives in the work place and employee productivity also concluded from his findings conducted using a peer-reviewed academic journal database using performance measures and sustainability in the work place, that overall employee satisfaction and workplace productivity increased an average of 21.4% from the non-sustainable workplaces to the sustainable workplaces. Scores ranged from 1.30 to 2.36 with an average of 1.86 on the satisfaction scale. They confirmed also that green product innovation is also positively connected to firm performance.

D. Contribution and Conclusion

The review of literature has shown that there is paucity of research in this evolving area of study of sustainability practices of eco-innovation and organizational performance research in developing economy. This paper therefore will extend the frontiers of knowledge in the field of Sustainability studies. The finding of this research will motivate and encourage business organizations to consider going green by embracing Eco-innovation which will reduce the cost of production and help to sustain our environment. The study concludes that Eco-innovation significantly and positively affect the selected manufacturing firm's market share in developing economy. This means that firms that reduce the environmental impact of its business operations will be automatically increasing their market share of their products. This will make their products dominant in the market. This also implies that eco-innovation significantly and positively affects employee's productivity. It's the productivity of the employees that leads to the productivity of the firms. This paper also concludes through survey empirical evidence that. Eco-commitment practice had a positive and significant effect on employee job satisfaction. This finding means that employees in a sustainability or green business organization will have more job satisfaction than those who are not.

Finally, the implementation of sustainability business practices, principles and processes will lead to very positive outcome that will be visibly manifested in the organization and the environment.

E. Recommendation

The under- listed recommendations were made based on the findings of this study:

i. The literature review and these research findings have found sustainability business practices as the most potent alternative for dealing with environmental challenges or market failures as well as dealing with all performance problems of manufacturing firms. Therefore Government should marshal out relevant tax wavers, incentives, subsidies, or grant for manufacturing firms that are going green or already practicing green business initiative. This will be a great way of encouraging green businesses in a developing economy.

ii. Government present way of dealing with environmental problems through some sought of mix of command and control and market based instruments should be reviewed and sustainability principles, processes and practices encouraged for ecological sustainability and performance enhancement of firms.

iii. Environmental sustainability courses should be incorporated into the current entrepreneurial education curriculum of Nigerian schools system to expose student entrepreneurs with ecological sustainability values. A model of how to do this will be created by the researcher as part of his contribution to knowledge.

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V. SUGGESTIONS FOR FUTURE RESEARCH

The following topics have been suggested for investigation for further studies on sustainability studies.

1. Harnessing the entrepreneurial potentials of eco-opportunity in Nigeria.
2. Ecopreneurship risks and rewards, an appraisal.

3. Ecological sustainability in corporations, an empirical study.

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