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SMEs-Enabled Circular Business Models: A Pathway to Sustainable Development

(A Study of Some Selected SMEs in Abeokuta, Ogun State)

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Abstract: The study focused into SMEs-Enabled Circular Business Models: A Pathway to Sustainable Development in some selected Small and Medium-sized Enterprises in Abeokuta, Ogun State, Nigeria. The survey was carried out on 260 SMEs owners in Abeokuta selected based on purposive sampling technique. SMEs owners in Abeokuta engage in different categories of businesses (agriculture, manufacturing, quarrying, hair and beauty salons, wholesale/ trade and so on). However, the 260 SMEs' owners were taken from four important economic sectors: manufacturing, food services, agriculture, and wholesale/retail commerce. A quota of 65 SMEs owners was chosen from the four economic sectors purposively to arrive at the sample size of 260 for the study. Survey research methodology was employed for the investigation. The study employed an online questionnaire with 25 items based on 4 point likert-scale to elicit necessary data from the respondents. Component factor analysis and Cronbach Alpha statistics were used to examine the psychometric qualities (validity and reliability) of the instrument. Using SPSS version 26, multiple linear regression was conducted to assess the descriptive and inferential statistics of the study's data. The study found a strong positive significant relationship between circular economy and sustainable development; the t-statistic demonstrates this {f ($^{2}/_{258}$), t=722.064, P<0.05}. The model summary reveals that r^2=.92 which implies that 92% of the total variation in sustainable development is jointly accounted for by RC and RR. Based on the findings, the study concluded that there is a strong positive significant association between circular economy and sustainable development.

Keywords: Innovation, Sustainable Innovation, Sustainable Development, Circular Economy, SMEs.

I. Introduction

In both established and emerging economies, small and medium-sized businesses (SMEs) have been a key factor in promoting economic expansion (OECD, 2018; Wellalage and Locke, 2020). According to Love and Roper (2015), more than 90% of all businesses in developing nations that are not in the agricultural sector provide a substantial amount of jobs, export and domestic revenue, and overall added value. Small and medium-sized businesses (SMEs) promote inclusive financial and social objectives by generating jobs and adding value across a wide range of geographic industries and regions. They also offer possibilities for skill development and innovation (OECD, 2017). They are necessary for the shift to a more sustainable world (Eurostat, 2020), as acknowledged by the European Union, which, by supporting SMEs, aims to lead the world in the circular economy (European Commission, 2020).

Innovation has been regarded as one of the most significant drivers among a number of variables such as marketing, human resources, and capital investment which influence the performance of SMEs. Organizations now have to be able to innovate in order to compete. Innovation as viewed by Ntsonde and Aggeri (2021) is a key factor in an organization's ability to survive in the market, enabling competitive advantage, economic growth, and societal improvements. Sustainable innovation is not formally defined or outlined in any way. The commercialization of innovations, goods, and services, as well as entrepreneurship, are all important components of sustainable innovation, just as they are with general innovation (Maier, 2018). According to Kadia (2019), sustainable innovation is the creation of new goods, methods, institutions, and technologies that support the growth and welfare of people and their institutions while respecting the world's natural resources and potential for regeneration. Effective sustainability innovation can be promoted when an organization's actions are directed at addressing social and environmental problems (Van Holt et al., 2020). Sustainable innovation aims to satisfy current demands without compromising the ability of future generations to satisfy their own needs.

The productivity and continuity of the economy is greatly affected by the availability of natural resources. Huge quantities of natural resources, that are overproduced which are slowly being depleted, are needed for the contemporary economies to satisfy the expanding demands and desires of the rapidly expanding population. In such circumstances, numerous efforts and

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attempts have been made by a number of academics including experts to curtail or even stop the exploitation of natural resources, to consume materials more slowly, and to stop the cycle of waste materials (Ludeke-Freund, Gold & Bocken, 2019). Well aware of this, these initiatives fall under the recently popularized notion of circular economy (CE) which argues that everyone involved in an economic system needs to switch from linear to circular thinking. The idea of CE has resulted in a fundamental paradigm change in how human society interacts with nature (Geissdoerfer et al., 2017). In response to the severe environmental degradation, a circular economy has arisen as an alternate transition paradigm.

Moving toward a circular economy entails structural adjustments meant to create enduring adaptability that opens up brand-new business prospects and has positive consequences on society and the environment in addition to lessening the effects of a linear economy. The circular economy concept demonstrates that sustainable development is feasible and that economic progress is achievable without depleting natural resources or harming the environment (Morseletto, 2020). Despite the reality that the goals and methods of the circular economy vary, they can all be summed up in the three major activities of reduce, reuse, and recycle. Reduce tries to minimize the environmental effects of resource use and waste generation over the course of a product's complete life cycle, reuse aims to reuse the original state or parts of the product after the product has completed its first economic life while recycling attempts to make the raw materials utilized in manufacturing useful after the product's lifespan (Ghisellini & Ulgiati, 2020). Achieving the circular model demands environmental innovation that is in terms of how society enacts laws, manufactures goods, and consumes them.

Williams (2021) opines that the circular economy has numerous advantages for the economy, the environment, as well as society. However, adopting this strategy will call for a fundamental change in the way that cities are managed, constructed, and planned. Significant adjustments will also need to be made to urban residents' social customs, lifestyles, and support networks. For SMEs adopting CE, there are a number of advantages and opportunities, including improved brand reputation, operational Cost-cutting, corporate expansion, increased output (productivity), environmental recovery through lower CO2 emissions, and increased sustainability (Prieto-Sandoval, Jaca, & Ormazabal, 2018). The idea behind sustainable development (SD) is that people should be capable of satisfying their immediate wants without jeopardizing the capacity of future generations to do the same. In spite of numerous studies on circular economy and sustainable development, researches on the adoption of CE by SMEs in developing nations is limited (Dey et al., 2020; Katz-Gerro & López Sintas, 2019; Mangla et al., 2018). In light of this, the following research issues are addressed in the study: What connection exists between recycling and sustainable development? What connection is there between resource reuse and sustainable development? In addressing the research questions, the following objectives were proposed.

1. To investigate on how recycling relates to sustainable development.
2. To assess the link between the resources reuse and sustainable development.
3. To examine the relationship between waste reduction and sustainable development.

This study is based on the Cradle to Cradle Theory of Circular Economy, which was created in 2001 by William McDonough and Professor Michael Braungart. Cradle-to-cradle promotes resource recycling to the fullest extent possible and suggests doing away with the idea of waste. It is based on the idea that what is regarded as garbage can actually become food in a new product cycle, which is known as the "waste is equal to food" principle. By converting the linear nature of typical enterprises' production patterns to circular behavior, the circular economy focuses on reusing waste residues in the production processes (Garciac-Barragan, Eyckmans, & Rousseau, 2019; Stefanakis & Nikolaou, 2021).

In order to examine the influence of barriers and facilitators on the capacity of a company to adopt a CE-based business strategy in a given industry (reuse of commodities), Awan and Sroufe (2022) established a conceptual framework. These authors list a few production- and management-related steps that help hasten the development of sustainable business models. Sharma et al., (2020) conducted an examination of typical Indian SMEs to learn about the prospects, obstacles, and readiness requirements for the shift to a circular economy (CE) from a linear economy (LE). They discovered that while the analyzed SMEs cared about the environment, they had no idea what terms and activities linked to CE meant. SMEs remarked that there weren't enough observing devices for measuring their performance presently and in the future, or implementation guidelines for CE. Kazancoglu et al., (2020) also highlighted the necessity for a comprehensive framework to properly apply CE in every step of the supply chain. Companies along the value chain ought to be capable of assessing how well their circular business practices are working.

De Sousa Jabbour (2019), emphasizing on the requirement to build stronger connections and shared values between customers and companies, offers information about the elements connected with SMEs' preparedness to transit to CE. According to the methodology provided in that study, businesses can use three levels of analysis: market environment, organization, and management at which decisions are made to better understand how they might increase their preparedness for adopting a circular economy. Although the study suggests combining market awareness with organizational modifications to be put into place to restructure management and technical decision-making, it neglects to highlight the process of circular changes and has no dynamic

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vision that add to the literature on the various ways in which an organization might alter its mentality, abilities and interactions while the move from linear economy (LE) to circular economy (CE)..

II. Methodology

The study investigated SMEs-Enabled Circular Business Models: A Pathway to Sustainable Development in some selected Small and Medium-sized Enterprises (SMEs) in Abeokuta, Ogun State, Nigeria. Purposive sampling was used to choose 260 Abeokuta-based small business owners for the survey. Owners of SMEs operate a variety of enterprises in Abeokuta, including those in agriculture, manufacturing, quarrying, hair and beauty salon, wholesale/trade. However, the 260 owners of SMEs were from four important economic sectors: manufacturing, food services, agriculture, and wholesale/retail commerce. These economic sectors were taken into account because they accounted for 91% of all SMEs and facilitated Nigeria's expansion and development. A quota of 65 SMEs owners was chosen from the four economic sectors purposively to arrive at the sample size of 260 for the study. A survey research design was employed for the investigation. The study employed an online questionnaire with 25 items based on 4 point likert-scale to elicit necessary data from the respondents. Component factor analysis and Cronbach Alpha statistics were used to examine the psychometric qualities (validity and reliability) of the instrument. Using SPSS version 26, multiple linear regression was conducted to assess the descriptive and inferential statistics of the study's data.

The analysis model is defined thus:

SD = f (CE)

SD = f (RC, RR, WR)

$Y = ß_0 + ß_1X_1 + ß_2X_2 + ß_3X_3$---------- e_t ..... (1)

$SD = ß_0 + ß_1RC + ß_2RR + ß_3WR$ --------e_t ..... (2)

Where,

SD = Sustainable Development

CE = Circular Economy

RC = Recycling

RR = Resource Reuse

WR = Waste Reduction

e_t = Error Term

$ß_0$ = Constant

$ß_1$, $ß_2$, $ß_3$ = Co-efficient of the Variables

III. Results and Discussion

Table I Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.861	.861	15

Source: Researcher's Computation 2023 using SPSS version 26

Table I reveals the reliability statistics of the instruments utilized for the study which are judged to be α= .861. This indicates that the instruments are reliable for the study.

Table II Descriptive Statistics

	Mean	Std. Deviation	N
SD	12.5326	2.89627	260
RC	12.4559	2.89479	260
RR	12.4828	2.92678	260
WR	12.5273	2.98578	260

Source: Researcher's Computation 2023 using SPSS version 26

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue IX, September 2023

Table II reveals a brief summary of the study's sample. Sustainable Development (SD) has a mean value of 12.5326 and a standard deviation of 2.89627 while Recycling (RC), Resource Reuse (RR) and Waste Reduction (WR) have mean values of 12.4559, 12.4828 and 12.5273 and standard deviations of 2.89479, 2.92678 and 2.98578 respectively.

Table III Correlation Matrix

		SD	RC	RR	WR
Pearson Correlation	SD	1.000			
	RC	.890	1.000		
	RR	.898	.886	1.000	
	WR	.906	.894	.878	1.000

Source: Researcher's Computation 2023 using SPSS version 26

Table III reveals the degree of correlations between the variables. Sustainable Development (SD) relates with Recycling (RC) at .890(r =.890), Resource Reuse (RR) at .898 (r = .898) and with Waste Reduction (WR) at .906 (r = .906). This suggests that Sustainable Development (SD) has a very strong positive relationship with Recycling (RC), Resource Reuse (RR) and Waste Reduction (WR).

Table IV Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.921[a]	.848	.847	1.13195	1.921

Source: Researcher's Computation 2023 using SPSS version 26

Table IV reveals the R-**S**quare estimate of 92.1% (R^2 = .921). This indicates that the independent variables: Recycling (RC), Resource Reuse (RR) and Waste Reduction (WR) jointly accounted for over 92% of the aggregate variation in the dependent variable, Sustainable Development (SD).

Table V ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1850.392	2	925.196	722.064	.000[b]
	Residual	330.581	258	1.281		
	Total	2180.973	260			

Source: Researcher's Computation 2023 using SPSS version 26

Table V reveals the joint significant relationship between the independent variables and the dependent variable. The null hypothesis that there is no significant relationship between the independent variables, Recycling (RC), Resource Reuse (RR) and Waste Reduction (WR) and the dependent variable, Sustainable Development (SD), is rejected at a 5% significant level based on the probability value of the F-Statistics, which indicates a P-Value of less than 5% (2/258= 722.064, P< 0.05).

IV. Conclusion

The study investigated the SMEs-Enabled Circular Business Models: A Pathway to Sustainable Development in some selected Small and Medium-sized Enterprises (SMEs) in Abeokuta, Ogun State, Nigeria. The study adopted Cradle to Cradle Theory of Circular Economy. The study found a strong positive significant relationship between Recycling and Sustainable Development, Resource reuse and Sustainable Development and Waste Reduction and Sustainable Development. Consequently, the research's findings concluded that there is a strong positive significant relationship between SMEs adopting circular business model and Sustainable Development.

V. Recommendations

The study recommended the following to SMEs in Nigeria.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue IX, September 2023

- SMEs in Nigeria should further improve on recycling of waste so as to eliminate waste and enhance sustainable development.
- SMEs in Nigeria should embrace reuse of the original state or parts of the product after the product has completed its first economic life.
- SMEs in Nigeria should further improve in waste reduction in order to minimize the environmental effects of resource use and waste generation over the course of a product's complete life cycle

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