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Development of entrepreneurship in Nigeria and circular economy

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Abstract

Nigeria's adoption of the shift from a linear to a circular economy and the corresponding prospects for entrepreneurial growth and employment generation have been insufficient. Insufficient research has been conducted on the notion of the circular economy, resulting in a lack of proper exploration of the possible employment opportunities within the industry. This study aimed to investigate the level of technical proficiency in the circular economy to foster entrepreneurial growth and generate employment opportunities in Nigeria. The survey research design was selected to accomplish the stated objectives. This study used a purposive strategy to pick 300 respondents from three distinct sectors within the recycling business in Lagos State, Nigeria. The selection process involved employing a proportionate random sample technique. These sectors include the informal sector, formal sector, and government agencies. The data collection process utilized a questionnaire labeled (Circular Skill and Job Creation). The psychometric properties of the tools, namely validity and reliability, were assessed using factor analysis and Cronbach's alpha, respectively. The acquired data were subjected to regression analysis at a significance level of 5%. The study's findings indicate a statistically significant and robust positive association between technical capabilities in recycling operations and the generation of employment opportunities for young individuals in Nigeria. This relationship is supported by a correlation coefficient 0.97, which suggests a high degree of linear dependence.

Furthermore, the p-value of 0.00, which is less than the predetermined significance level of 0.05, provides strong evidence to reject the null hypothesis and support a meaningful relationship between these variables. Hence, possessing technical competencies in circular industrial practices will enhance the capacity of young individuals to foster employment opportunities and ensure long-term economic stability. The report proposed that a collaborative effort between the government, non-governmental organizations (NGOs), and corporate entities be established to facilitate the promotion of initiatives within the recycling industry.

Keywords: Circular economy; Job creation; Entrepreneurship development; Technical skill; Recycling industry

1. Introduction

The circular economy (CE) is both an economic development concept and a policy effort. It replies to the standard, unsustainable 'take-make-dispose' economic model. By reducing natural resource consumption, the CE facilitates a multi-level transition toward cyclical closed-loop systems [1]. [2] The CE has been described as "an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, and recycling materials in production/distribution and consumption processes, to accomplish sustainable development, which implies creating environmental quality, economic prosperity, and social equity, to the benefit of current and future generations." According to the preceding, there is a broad relationship between entrepreneurship and CE; entrepreneurial activity links the Linear Economy and the Circular Economy. Entrepreneurs develop and commercialize new technologies, products, and services, creating new markets and jobs. Furthermore, Nigeria, like any other economy seeking to progress, must adopt the CE business model.

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Unemployment is one of the most challenging difficulties confronting any nation seeking economic development; a country that fails to appropriately and advantageously engage its growing population has few plans for economic advancement.

Fortunately, Nigerian youths (the most active section) account for more than 140 million people (2006 census data). Youth comprise 70 to 80 percent of this population, and over 80 percent are unemployed. An estimated 10% of employed people are troubled and despondent, relying almost entirely on relatives and family members [3].

Surprisingly, the 2012 Global Entrepreneurship Monitor (GEM) named Nigeria one of the world's most enterprising countries. According to the report, 35 out of every 100 Nigerians (more than a third) are involved in some form of entrepreneurial activity. Nigeria, on the other hand, has nothing to show for it. So, where are we going wrong?

Nigeria has had various entrepreneurship strategies since its independence, ranging from the First National Development Plan (1962-1985) to the most recent Vision 2020, to establish a viable economy and eliminate poverty. Regrettably, despite several schemes, none of these efforts reasonably improved Nigerians' living standards [4].

Global environmental awareness is constantly growing. Nonetheless, Nigerians have low ecological views. We handle our natural resources as a perennial phenomenon, failing to see that nonrenewable resources are deciduous, but renewable resources may change forms with detrimental effects on humanity. Waste is generated as a result of both manufacturing and consumption activities. At the same time, with the circular economy business model and entrepreneurial abilities that bridge the gap between linear and circular economies, this so-called waste may be converted into riches. Nigeria's economic and environmental difficulties necessitate a rethinking of the country's development strategy; perhaps a rapid shift toward CE is the best way to exploit the country's tremendous young talent.

Given the preceding, the study intends to investigate the relationship between the circular economy and entrepreneurship development. In essence, the research hypothesis was presented as follows:

Ho: There is no significant association between the circular economy and entrepreneurship development.

2. Literature Review

2.1. Conceptual

The concept of circular economy (CE) has evolved, becoming for a few years a trending topic with increasing relevance, both at the level of management of public administrations and companies, as well as at the academic level [5]. Despite this increasing popularity, the term has no universally agreed definition. However, a consensus indicates that CE is most frequently depicted as a combination of reduce, reuse, and recycle activities [6]. In a similar vein, CE is defined as “an economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro, level and macro level, to accomplish sustainable development” level. [7] Observed that CE is a generic term covering all activities that reduce, reuse, and recycle materials in production, distribution, and consumption. [8] illustrates CE as using resources more efficiently across their life cycle by closing, extending, and narrowing material loops that could result in decoupling primary raw material consumption from economic growth [9].

[10] in OECD (2018) noted that Four key benefits of the transition to a circular economy commonly identified in the literature are: (i) reduced extraction of virgin natural resources; (ii) lessened exposure to (geo-political) supply risk; (iii) reduced environmental pressures; and (iv) new economic opportunities.

[11] According to the European Commission(2018), the circular economy can be monitored through the following framework: self-sufficiency of raw material, green public procurement, waste generation, food waste, overall recycling rate, recycling rate for specific waste streams, contribution of recycled material to raw material demand, trade-in recyclable raw material, private investment, jobs and cross value-added, and patents [12].

[13] The Ellen MacArthur Foundation categorized six business models for CE: Regenerate- refers to shifting to renewable energy and materials. Share- denotes the sharing and recycling economy as well as prolonging the life of products. Optimize- refers to increased efficiency, waste minimization, and utilization—loop - defined as closing the technical and biological material cycles. Virtualize - deals with direct and indirect dematerialization. Exchange - calls for the utilization of novel materials and technologies.

2.2. Theoretical Review

This study is based on the cradle-to-cradle theory, which was created by Brann Gant and Mc Donough in 1990. The concept of cradle-to-cradle is a philosophy and way of life that focuses on responsible production and consumption to protect the environment and improve the quality of human life so that future generations can continue to enjoy the constant pleasurable quality of life.

The idea is to create the correct item from the ground up. This means that the manufacturers should thoroughly understand the materials used in production and the fate of such after the product has been consumed. This is recognized by identifying the biological effects and technological improvements to ensure that all of the former pass via biodegradation and return to the ecosystem as a nutrition for other living beings without releasing toxic products into the environment. Simultaneously, the latter's components should be decoupled/disassembled into numerous bits that go back into the manufacturing process, with none escaping into the environment as pollution.

In summary, cradle-to-cradle is a regeneration manufacturing process that continuously extends the end life of a product using renewable energy.

3. Empirical Review

[14] A paper titled "Circular Economy as Essentially Contested Concept" claimed that innovation, entrepreneurship, and technological advancement are critical aspects in the transition from linear to circular economies. According to Circular Economy Benefit for Society, 75,000 circular economy-related jobs were created in Sweden, including 5,000 in renewable energy, 20,000 in energy efficiency, and 50,000 in material efficiency. [15] According to IISD, Estimating Employment Effects of the Circular Economy, the circular economy offers a high potential for job creation. [16] The Club of Rome, The Circular Economy and Its Benefits for Society, the circular economy business model would result in more jobs and cheaper manufacturing costs.

[17] Wrap and the Green Alliance studied the role of the circular economy in improving sluggish job markets in the United Kingdom and how circular economy policies might reduce unemployment and regional inequality. The study, "Employment and the Circular Economy Job Creation in a More Resource Efficient Britain," used different public scenarios to estimate that without any policy change, 200,000 new jobs will be created, and unemployment will be reduced by 54,000; under a more aggressive policy scenario, 500,000 new jobs will be created, and unemployment will be reduced permanently by 102,000. [18] The International Labour Organization (ILO) argued in the research - The Future of Work in Changing Natural Environment Climate Change, Degradation, and Sustainability - that progress toward circular economy sustainability can create jobs. [19, 20] ILO, in the report World of Employment and Social Outlook, affirms that if the circular economy is adopted, it can create new jobs.

According to a study on Circular Economy and Employment, the circular economy increases employment through substituting labor input for high-cost material input, investments in resource and energy efficiency, and revenue recycling through lowering employers' social security contributions, resulting in lower labor costs to industries, generating additional employment demand. [21] According to the European Commission, jobs directly related to the circular economy employed 3.9 million people in 2014. The Impact of Circular Economy Policies on Labour Markets research, published in May 2018, says that the circular economy may add 0.5 percent to Europe's GDP and create 700,000 new jobs. [22] A 2017 Circle Economy research shows that 8 percent of the Dutch workforce is employed in circular economy jobs.

4. Methodology

The research focused on the recycling business in four local government areas in Lagos, Nigeria. For the study, a surveying research design was used. To choose 300 respondents, a multistage sampling technique was used. The population was divided into three (3) groups: informal, formal, and government agencies. Four local governments were chosen at random, and purposive sampling techniques were used to select 100 respondents from each group.

A questionnaire with a five-point Likert scale and tags for circular economy and job creation was used as the data-gathering instrument.

The instrument's psychometric qualities (validity and reliability) were evaluated using components factor analysis and Cronbach alpha. The acquired data was examined using regression analysis with SPSS, and the model was described as follows:

$$CE = F(ED),$$

$$CE = \beta_0 + \beta_1ED + \epsilon_t$$

Where CE = Circular Economy

ED = Entrepreneurship Development β_0 = Constant

β_1 = Correlation coefficient ϵ_t = Error Term

Source of Data: primary data source

Method of Data collection: primary data will be collected through questionnaires.

5. Results and discussion

Table 1 shows an alpha value of (.876). This means the instrument is reliable because it can consistently measure the variables of interest under similar conditions.

Table 1 Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.876	0.878	30

Table 2 Total variance explained showing the validity of the instrument

Component	Initial Eigenvalues			Rotation Sums of Squared Loadingsa
	Total	% of Variance	Cumulative %	Total
1	7.972	26.573	26.573	6.556
2	7.521	25.070	51.643	6.072
3	5.924	19.746	71.389	5.647
4	3.887	12.958	84.347	5.548
5	2.819	9.398	93.745	6.170

Table 2 shows that the instrument is highly valid, with a total variance explain value of 93.94 percent. This means that the instrument's items are correlated and well-loaded and adequately measure the research variables.

Table 3 Correlation matrix showing the intensity of correlation between the variables

		EMPLOYABILITY	LEARNINGACHIEVEMENT
	EMPLOYABILITY	1.000	.969
Pearson Correlation	LEARNINGACHIEVEMENT	0.969	1.000
	EMPLOYABILITY	.	0.000
Sig. (1-tailed)	LEARNINGACHIEVEMENT	0.000	.
	EMPLOYABILITY	380	380
N	LEARNINGACHIEVEMENT	380	380

Table 3 indicates a strong positive correction between the variables; circular economy and job creation correlate at $r = .969$

Table 4 Model summary showing the size of the relationship between variables of interest

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.974 ^a	0.949	0.949	1.06859	2.691

Predictors: (Constant), Circular economy scale; Dependent Variable: Job creation scale

Table 4. The R square value in Table 4 is 974 ($r^2 = 974$). The circular economy accounts for 97.4 percent of the total variance.

Table 5 Anova shows the significance of the relationship between variables of interest

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	6389.386	1	6389.386	5595.494	0.000 ^b
1	Residual	340.280	298	1.142		
	Total	6729.667	299			

Table 5 shows a statistically significant association between job creation and the circular economy. The ANOVA value [$f(1/298) = 5595.494$; $P < .05$] indicates that the hypothesis of no significant association was rejected, and the alternative view was accepted with 95% confidence.

Table 6 Correlation coefficient showing the direction of relationship between variables of interest

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.023	1.059	0.974	-2.855	0.005
	Circular economy scale	1.3520	.018		74.803	0.000

According to Table 6, every unit increase in the circular economy results in a 1.352 rise in employment creation. It adds to the ANOVA and correlation matrix findings that a strong relationship and correlation exists between circular economy and employment creation. The unstandardized correlation coefficient, T-test, and related significant level ($\beta = 1.352$; $t = 74.803$; $p < 0.05$) support this.

6. Conclusion

In conclusion, it can be inferred that the preceding arguments and evidence support the notion that...

The circular economy is a nascent notion still in its early stages of development in Nigeria. Nevertheless, the findings of this study indicate a noteworthy correlation between entrepreneurial development and the circular economy. Specifically, entrepreneurship development accounts for a substantial proportion of the overall variation in the circular economy, exceeding 97%. The preceding analysis suggests Nigeria has significant potential for establishing a circular economy. This can effectively enhance the value of the country's environment and natural resources. Unfortunately, the informal sector in Nigeria is primarily responsible for the limited implementation of the circular economy. One concerning phenomenon observed in Nigeria is the notable surge in trash production, which has occurred without a commensurate level of environmental consciousness. There exists a significant degree of unawareness of the imperative to conserve our environment to foster an improved future. Consequently, the reckless disregard for both our future and our finite natural resources will persist without restraint.

It is essential to highlight that Nigeria currently lacks a comprehensive government strategy for the circular economy, which poses a challenge in achieving a cleaner environment through circular economy practices. The current trajectory necessitates scrutiny, while the government, which possesses the potential to foster the implementation of a circular economy through appropriate legislation, is also failing to meet anticipated standards.

Recommendation

Based on the study's findings, the government should formulate explicit and persuasive policies about the environment and circular economy. The provision of financial resources, training infrastructure, tax benefits, and skill development opportunities should be extended by the government to entrepreneurs engaged in circular business endeavors. It is recommended that the government undertake a comprehensive awareness campaign regarding the circular economy, highlighting its potential opportunities and accompanying advantages.

Compliance with ethical standards

Disclosure of conflict of interest

All authors declared no conflict of interest.

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