Determinants of Environmental Behaviour Among Small and Medium Enterprises in Lagos, Nigeria

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Abstract—This study examined the environmental behaviour of small and medium-sized enterprises in Lagos, Nigeria, to ascertain their disposition and factors that shape Small and Medium Enterprises (SMEs) behaviour toward their immediate environment. Given that SMEs in Nigeria are poorly regulated, most enterprises have failed to adhere to international best practices in their operations. Thus, this study assessed the determinants of SMEs' environmental behaviour within Lagos State, chosen for its status as Nigeria's commercial nerve centre and its concentration of over 11,500 SMEs. A combination of quota, purposive, and convenience sampling techniques was employed to select the sample of SMEs that participated in the study. Questionnaires were administered to 700 SMEs, however, only 521 were properly completed and returned by SMEs. Data were analyzed using multiple regression techniques. The coefficients of determination (R^2) indicated that 48.4%, 27.9%, 63.6%, and 40.5% variations in environmental behaviour among micro, small, medium SMEs and for all enterprises combined are explained by the independent variables. Results revealed a significant relationship between SMEs' years of existence and their environmental behaviour. Across all SME categories, habit has an inverse relationship with environmental behaviour; conversely, belief, personal responsibility, individual, and Institutional factors all have a positive relationship with environmental behaviour. The study concludes that a decrease in anti-environmental habits among SMEs will enhance pro-environmental behavior, contributing to more sustainable business practices, and recommends improvement in the habits and environmental behaviour of medium enterprises in Lagos.

Keywords— SMEs, Environmental behaviour, Determinants

I. INTRODUCTION

The global demand for goods and services to satisfy the ever-increasing human wants gave rise to severe unregulated extraction and exploration of our natural environment for material resources that serve as input for producing goods and services, leading to severe environmental degradation. According to [1], rapid urbanization has placed immense pressure on the environment, accelerating demand for basic services, infrastructure, jobs, land, and affordable housing. These activities have led to severe structural changes, unquantifiable destruction, and damage to environmental resources. To create supply for global demands, business enterprises, regardless of size and location, have continued in unsustainable activities, giving rise to the challenge of environmental degradation and adverse climate conditions. While climate change is often perceived as an environmental issue, it is equally a business issue, as business enterprises, irrespective of size, play a crucial role in either mitigating or exacerbating environmental conditions.

Therefore, understanding the environmental behaviour among small and medium-sized enterprises (SMEs) is critical for mitigating environmental degradation and ensuring long-term economic sustainability. In Lagos, Nigeria, comprehending the factors influencing SMEs' behaviours is essential to promote practices that contribute to a sustainable future. SMEs in Lagos face distinct challenges and opportunities for adopting environmentally friendly practices. Therefore, this study seeks to identify the determinants of environmental behaviours among SMEs in Lagos. By elucidating these determinants, policymakers, business leaders, and regulatory agencies can devise targeted strategies to encourage greater adoption of sustainable practices within this pivotal economic sector.

Environmental behaviour refers to actions that either positively or negatively affect the environment. According to [2], it encompasses practices that aim to minimise any adverse

effects on the natural environment, while [3] defines it as any action that affects the quality of the environment. Reference [4] defined environmental behaviour as the actions that consciously protect the environment and improve its sustainability. It includes actions that benefit nature, eliminating destructive actions, and preservation activities that enhance environmental quality [5].

Predominantly, SMEs engage in activities ranging from energy to land use changes and forestry to industrial processes to agriculture, transportation, and buildings, and several of such activities not only generate externalities, but are responsible for a large share of environmental problems. Therefore, integrating social and environmental agendas with profit-making goals has become imperative for SMEs, as sustainability has become a global business concern [6]. There is pressure on business enterprises to incorporate more sustainable behaviour toward the environment [7], [8]. Environmental problems are largely the result of SMEs' behaviour, decisions, and activities that harm the environment [9].

Then the question, why should SMEs be galvanized to change their attitude, to incorporate and embrace sustainable environmental behaviour, and what are the determinants of SMEs' environmental Behaviour? There are many reasons for such a paradigm shift, which may include, firstly, the role of SMEs in the economy is huge and cannot be underestimated, due to their geopolitical spread. Secondly, SMEs have been given increasing policy attention in recent years, particularly in third-world countries, partly because of growing disappointment with the results of development strategies focusing on large-scale capital-intensive and high import-dependent industrial plants, at the expense of the environment. Thirdly, the activities of SMEs have been inimical and anti-environmental, either directly or indirectly, from sourcing raw materials to processing and managing waste from finished and semi-finished products. Furthermore, SMEs also contribute to global environmental problems, including GHG emissions.

In the past, much attention has been paid to the factors that make large enterprises sustainable, with limited research on environmental behaviour among small and medium-sized enterprises (SMEs).

Existing literature has focused more on household or individual environmental behaviours [10], [11], [12]. Study on climate change [13], SDGs [14], Student environmental behaviour in high school [15], [16] in developing countries. While studies on determinants of SMEs' environmental behaviour are few, particularly in Nigeria, e.g., [17], [18], and [19]. Therefore, this study attempted to fill the gap in knowledge on the determinants of SMEs' environmental behaviour in Lagos, Nigeria.

II. Materials and Methods

A. Study population, sample size, and techniques

The Study area is Lagos, Nigeria, since environmental behaviour is often conceptualized as multidimensional, a cross-sectional survey is most appropriate to collect data from SMEs.

The population of this study was SMEs registered in the directory of SME in Lagos state, Nigeria, and limited to SMEs only. The study population is 42,067 (small-37135, and medium-4932) SMEs domiciled in Lagos [20]. Though the terms Small" and „medium" are relative and differ from industry to industry and from country to country [21], all forms (Sole Proprietorship, Partnership, Private and Public Limited Companies, and so on) and kinds (Services, Manufacturing, Processing, Oil & Gas, Educational, retail outlets, and so on) of business enterprises.

The samples were selected using cluster, purposive, and convenience sampling methods. The sampled SMEs were represented by any member of staff, but preferably the manager or a top-ranking member of staff. A total of 700 questionnaires were administered to select SMEs, however, only 521 were properly completed and returned by SMEs. The survey used the random cluster sampling method for the size of enterprises (micro, medium, and large) and volume of activities, regardless of the type of activity. Such that the sizes and distribution of samples did not deviate from the actual structure of SMEs.

A questionnaire was the instrument used for collecting the desired data for the study. References [22], [23] and [24] recommended the use of an interview or questionnaire as the best instrument to measure environmental behaviour, using direct self-report or implicit measurement techniques. The questionnaire was structured to collect information on SMEs' socio-demographic variables, the Pro-environmental behaviour of SMEs, and the determinants of environmental behaviour among SMEs. In line with the approach employed by [25], questionnaires were administered using an online survey tool and email to a random sample of targeted SMEs in Lagos. SMEs' participation was voluntary, and they were assured that information would be used for research purposes only. Participants were also informed that the questionnaire would be available for fifteen weeks. The choice of using an electronic self-completion survey was also based on the fact that it is relatively cheap, convenient, and fast compared to other media [26].

The questions in the questionnaire were adapted from various previously established studies to ensure the content validity of the scale. The questionnaire was also designed to facilitate the collection of unbiased and accurate data, while all variables used were aligned to a 5-point Likert-scale rating (1 = Strongly Disagree to 5 = Strongly Agree; 1= absolutely not ready to 5 absolutely ready and 1 = Major effect to 5 = No effect).

B. Specifications of the Models

$$Y = \alpha + \beta_1 x_i + \beta_2 x_i + \beta_3 x_i + \varepsilon_i \qquad (1)$$

Where:

Y = Dependent variable; X = Independent variable, α = Constant, β = Coefficient, ε = Error term

Equation 1 (regression equation) can be translated to fit the research purpose as:

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$$EVB_i = \alpha + \beta_1 FRM_i + \beta_2 ATT_i + \beta_3 CON_i + \varepsilon_i \qquad (2)$$

Where: EVB = Environmental Behaviour of SMEs, FRM = Firm Characteristics, ATT = Attitudinal Factors, and CON = Contextual Factors

Equation 2 is further expanded to form equation 3:

$$EVB_i = \beta_1 BIZ_i + \beta_2 ORG_i + \beta_3 YRS_i + \beta_4 HAB_i + \beta_5 BEL_i + \beta_6 PRS_i + \beta_7 IND_i + \beta_8 INS + \varepsilon_i \qquad (3)$$

Where: EVB = Environmental Behaviour of SMEs, ESTAB = year of establishment, ORG = Nature of Organization, YRS = Years of Existence, HAB = Habit, BEL = Belief, PRS = Personal Responsibility, IND = Individual, and INS = Institutional.

C. Method of Data Analysis

The collected data were sorted, cleaned, and analysed with the Statistical Package for Social Science (SPSS) software. Inferential statistics, such as multiple regression, and descriptive statistics were used, such as the frequencies and percentages of the socio-demographic variables: nature of business, year of operation, and number of employees, among others.

III. RESULT AND DISCUSSION

This section presents the socio-economic characteristics of sampled SMEs. These features are arranged according to the nature of SMEs, years of operation, and organizational size.

A. Nature of SMEs

Results from Figure 1 show the nature of Organizations. 56.2% of the SMEs are Private Limited Companies, while 15.9% and 15.5% are Sole proprietors and Partnerships, respectively. 10.0% of the respondents are family-owned businesses, and 2.3% of the SMEs are public limited companies. This reveals that the nature of the organization in Lagos state is predominantly private limited enterprises, followed closely by sole proprietorship and partnership.
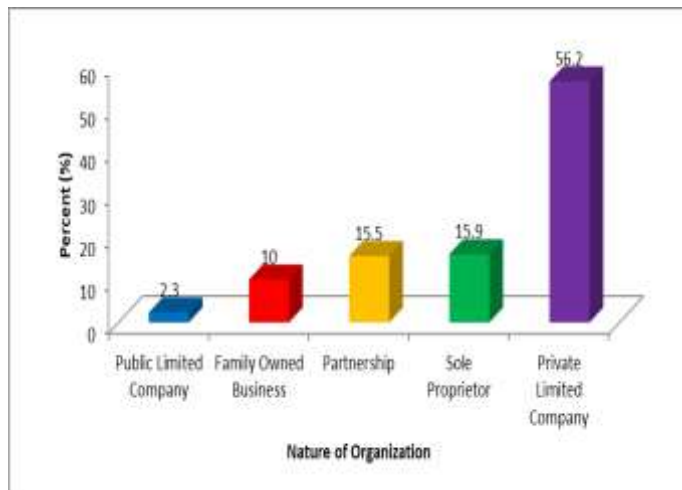

Fig. 1: Nature of Organization
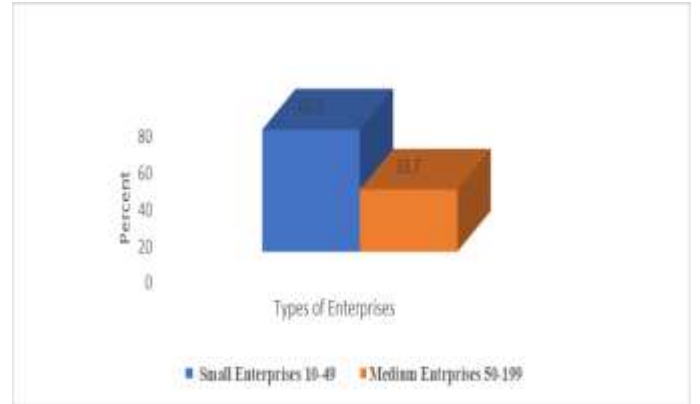Source: Author's Field Survey, 2025

Fig. 2: Number of Employees by SMEs
Source: Author's field survey, 2025

Figure 4.2 shows the number of persons employed by the participating SMEs in Lagos. 66.3% are small enterprises and employed between 10 - 49 employees, while 33.7% of SMEs are medium enterprises with employees between 50 – 199, comprising Sole Proprietorship, Partnership, Private and Public Limited Companies. This implies that Lagos State has a higher number of small enterprises than medium enterprises.

B. Determinants of SMEs' Environmental Behaviour

Table 1 presents the multiple regression results on the determinants of environmental behaviour among SMEs. In this table, column A reveals the factors determining environmental behaviour among micro-SMEs, while columns B and C show the determinants of environmental behaviour among small and medium SMEs, respectively. While column D shows all SMEs' approaches by revealing the determinants of environmental behavior for the SMEs reviewed in the study.

The study applies the [26] review on the determinants of Pro-Environmental Behaviour. This further groups the questions into three categories, namely: SMEs Socio-Demographic characteristics, Attitudinal Factors (Habits, Belief and Personal Responsibility), and Contextual Factors (Individual and Institutional).

TABLE I.   DESCRIPTIVE FOR REGRESSION ANALYSIS

	N	Minimum	Maximum	Mean	Std. Dev
Attitude	521	10.00	35.00	16.5797	5.00018
Personal Responsibility	521	14.00	26.00	21.0653	1.83543
Individual Factors	521	11.00	20.00	17.4184	1.48375
Institutional Factors	521	21.00	40.00	34.2591	3.67999
Belief	521	10.00	25.00	20.9040	2.09082

Source: Author's Field Survey, 2025

TABLE II.   DETERMINANTS OF ENVIRONMENTAL BEHAVIOUR AMONG SMEs

	A	B	C	D
	Micro	Small	Medium	All Firms
(Constant)	18.684***	18.236***	20.009	17.936***
FIRM CHARACTRSTICS				
Age of Firms	-0.002	0.088**	0.296**	0.034**
Nature of Organization				
Private Organization	-0.720	1.677	-4.418	1.451**
Partnership Organization	-1.239	1.802	-4.363	1.285*
Sole Organization	-0.843	1.470	-5.214	0.974
Family Organization	-1.112	0.759	-5.189	0.713
Years of Existence (Ref. Categoryy:15-20 Years				
Below5 Years	1.781**	1.647**	2.802	0.905**
5-10 Years	2.173***	1.577**	3.439*	1.190***
11-15 Years	1.375	1.338**	0.371	0.852*
Above20 Years	2.602*	-0.286	-2.983	0.588
ATTITUDINAL FACTORS				
Habit	-0.229***	-0.066	-0.264**	-0.137***
Belief	0.128*	0.167*	0.345	0.123**
Personal Responsibility	0.063	0.039	0.773**	0.072
CONTEXTUAL FACTORS				
Individual	0.305***	0.199	-0.166	0.301***
Institutional	0.265***	0.158***	-0.046	0.200***
R^2	0.484	0.279	0.636	0.405
Adjusted R^2	0.456	0.219	0.317	0.388
F	18.416	4.663	1.995	24.561
Prob.	0.000	0.000	0.093	0.000

Source: Author's Field Survey, 2025

Note: Attitudinal and Contextual Factors were computed by summing respondent scores on all the corresponding items. ***, ** and * represents the significance level at 1%, 5% and 10% respectively.

The coefficients of determination (R^2) values (0.484, 0.279, 0.636, and 0.405) indicate that about 48.4%, 27.9%, 63.6%, and 40.5% variations in environmental behaviour among micro, small, medium SMEs and for all enterprises combined are explained by the independent variables. The F statistics (prob) values, which are estimated to be 18.416 (0.000), 4.663 (0.000), 1.995 (0.093), and 24.561 (0.000), indicate that all the explanatory variables are jointly significant in influencing the different categories of SMEs.

The result further showed a significant relationship between the years of existence of firms and their environmental behaviour. Specifically, firms below 5 years, between 5 to 10 years, and above 20 years are positively and significantly (coef. = 1.781, 2.173, and 2.602 with p-value at 5%, 1%, and 10% respectively) related to environmental behaviour in Micro SMEs. This implies that firms existing below 5 years, between 5 – 10 years, and above 20 years are more likely to change their behaviour towards the environment compared to 15 – 20 years in micro-SMEs. This principle applies to the small firm category, where organizations existing below 5 years, between 5 – 10 years, and 11 – 15 years are more likely to influence environmental behaviour when compared with organizations existing between 15 – 20 years.

Conversely, all the categories have a negative relationship with Habit as related to environmental behaviour. This means that a decrease in the anti-environmental habits of SMEs will increase pro-environmental behaviour. However, other factors (belief, personal responsibility, individual and Institutional factors) all have a positive relationship with environmental behaviour for all categories of SMEs. However, habit, belief, individual, and institutional factors are significant in Micro SMEs and all firms' categories. In contrast, belief and institutional factors are significant in small SMEs, medium SMEs show significance in habit and personal responsibility only.

IV.   CONCLUSION

This study examined the determinants of environmental behaviour among SMEs in Lagos. The SMEs were divided into their natural clusters of micro, small, and medium, from which individual samples were drawn. Findings on the characteristics of sampled enterprises revealed that most SMEs are privately owned and have been in operation for at least ten years, with an average staff strength of between one and ten employees. The study deduced that SMEs that have existed and been in operation for about ten years have a higher compliance rate with environmental behavioural standards. In other words, the older the SME, the higher the level of positive environmental beheviour. Similarly, based on the years of existence, SMEs with operations below 10 years displayed a positive and significant relationship. This implies that at the early stage of incorporation, SMEs are willing to adhere to most, if not all, environmental regulations and standards.

In conclusion, considering all firms in the study, the determinants that may likely influence environmental behaviour are the nature of organizations, years of existence, and attitudinal factors like habit and belief. Contextual factors like individual and institutional factors are significant at 1%, 5%, or 10%. This result is in line with [7]. In addition, it can be concluded that 48.4%, 27.9%, 63.6% and 40.5% of the total variations in environmental behaviour among micro, small, medium and all enterprises respectively are explained by the nature of SMEs, year of existence, SMEs habits, belief and responsibilities, individual and institutional factors.

All categories of SMEs have an inverse relationship with Habit as related to environmental behaviour. This means that a decrease in anti-environmental habits of SMEs will increase pro-environmental behaviour, as submitted by [8]. Although other factors (belief, personal responsibility, individual and Institutional factors) all have a positive relationship with environmental behaviour for all categories of SMEs. However, habit, belief, individual, and institutional factors are significant in micro enterprises and all SME categories. In contrast, belief and institutional factors are significant in small enterprises, as medium enterprises show significance in habit and personal responsibility only.

The study recommends improvement in medium enterprises' habits and environmental behaviour as their behaviour is not significant, compared to micro and small enterprises in Lagos state. The nature of the business, type of enterprises, year of operation, attitudinal and contextual factors could only explain 48.4%, 27.9%, and 63.6% of, determinants of environmental behaviour in micro, small, and medium. This means that these variables are not a sufficiently strong estimate of the environmental behaviour of SMEs, with a coefficient below 70%. There is a need for further examination of the indicators of environmental behaviour among SMEs in Lagos State. SMEs should have a change of attitude on how they perceive business activities, by internalizing environmental costs to promote environmental friendliness.

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