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A STUDY OF THE IMPACT OF SMEs ACTIVITIES ON HUMAN HEALTH AND THE ENVIRONMENT IN OYO STATE, NIGERIA

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Abstract

The study examined the nature, type and factors influencing SMEs activities in Oyo State. This is with a view to determining the effect of such activities on human health and on the environment. Questionnaire were administered to major actors within the Environmental Management System in order to elicit appropriate response on the objectives of the study. Data obtained were analysed using appropriate descriptive and inferential statistical tools. Results from the study showed that SMEs activities were influenced by inherent operational and socio-economic variables. Also the nature and type of the existing SMEs in the state include wood and food-based enterprises, construction and metal works, palm oil/kernel plants, water packaging and cassava processing plants. These SMEs generated wastes such as saw dust, ashes, wools, dust, pellets, noise among others which were poorly disposed. Consequently, these wastes caused severe health and environmental problems. The study concluded that appropriate measures be put in place to reverse this trend.

Key words: Small and Medium Scale Enterprises, Environmental Management System, Oyo State, Human Health, Environment.

Introduction

Nigeria, since independence, has been spending huge amount of money for entrepreneurial and small business development programmes. Hence, the rapid proliferation of SMEs which incidentally are mainly located in the urban centres.

SMEs are regarded as growth drivers that can make any nation a viable economy and they contribute immensely to the economic, industrial and social development of any nation. They bring about several benefits to the inhabitants of areas where they are located such as infrastructural facilities; improvement in the standard of living and stimulation of trading/economic activities. Despite the aforementioned benefits, they pose great danger to the environment because pollution, for instance, emanating from SMEs are reported to cause visible damages to the environment (Starkey, 1998; Hillary, 2000. Khoa, 2006; Olayemi, 2006; Fallen, 2006; Fakiyesi, 2006; Fatusin, et al, 2008).

Generally, business activities often have substantial impact on the environment. Starkey (1998:12) defined environmental management as 'the management of activities of firms that have or can have an impact on the environment. The environment is a global issue which should be of utmost concern to both individuals as well as corporate organizations. Yakhou and Dorweiler (2004:12) posited that "with .increasing social focus on the environment, accounting fills an expectation role, to measure environmental performance". Osemene (2010) also noted that a highly degraded environment can impact negatively on health and lead to pollution of different forms. The quest for economic development especially in Nigeria, seem to have, push environmental matters to the background (Fakiyesi, 2006; Olayemi, 2006; Owolabi, 2007). The environment has been greatly devastated by social wastes, pollution, flooding, and the likes, especially in the urban centres where SMEs are highly concentrated (Olayemi, 2006; Fallen, 2006).

Since SMEs constitute majority of companies, they are bound to have the greatest environmental impact. However, the extent to which this happens may relate to the age of SMEs, qualification of the workers in the SMEs; experience of the workforce, funding of SMEs; the organizational culture of the SMEs, training received by SMEs workforce, SMEs size and perhaps the state of SMEs infrastructure (Adeline, et al, 2003).

The increase in the number of small scale enterprises causes a corresponding increase in population of the areas where the SMEs are located. Consequently, more environmental problems, or challenges occur, leading to health hazard as a result of inhalation of harmful smokes, emissions and noise emanating from SMEs activities. For instance, an increase in the number of cassava milling machines will promote noise pollution. Air pollution resulting from increased cassava waste which naturally have offensive odour may cause cyanide toxicity due to leakage of this chemical into surface water. The consequences on people's health as a result of such pollution can not be over--emphasised.

Imerito (2006) observed that when a nation fails to account for the value of its natural resources and environment, it definitely promotes taking the environment

for granted and retarding the development of such a poor nation, The entrepreneurial skills to manage environmental matters often seem to be lacking among SMEs. Hence, attending to challenges arising from the environment may rather be slow (Newberry, 2006).

Despite the importance of SMEs to socio-economic development of all countries, it is quite shocking that only a handful quantitative data exist to determine impacts of SMEs on the environment. Many small businesses do not think that their activities have significant environmental impact unlike large enterprises. Collectively, if not individually, their impact on the environment is vast (Hillary, 2000; Bezanson et: al., 2000, Tilley, 2000). Various authors such as Groundwork (1998); Tilley, (1999); Hillary, (2000); Khoa (2006) have observed that the SMEs total environmental impact is yet unknown, though 70 percent is been bandied around as the sub-sector's contribution to pollution levels and it has taken on mythical status;

It was reported by Bartone and Benvides, (1993) in a survey carried out by them on small-scale and cottage industries in India, Mexico, Peru and Zimbabwe that SMEs are primarily not the main polluters in their respective industrial sector. This is connected to their small share/percentage of the entire output. Also, that SMEs only pollute more per unit of output due to the usage of obsolete or cheap equipment and technology, inefficient production, inadequate finance, poor house keeping, lack of experienced and qualified personnel.

This study is therefore, carried out to reveal the hazards associated with SME activities, not only on their operational environment but also on human health. Hence the general objective of the study is to characterize the nature and types of environmental accounting and management activities in SMEs with a view to determining their effect on the health of SMEs operators, neighbours as well as the entire operating environment. The specific objective however, is to evaluate the environmental accounting factors that influence SMEs' activities within their operating environment.

Literature Review

SMEs Activities and their Effects on the Environment

Environmental matters are a top priority issue among companies in the developed nations of the world (El Serafy and Lutz, 1996; Jaggi and Zhao, 1996). Whether a firm is large or small, their activities have effect on the environment (Gerstenfeld and Roberts, 2000), which invariably may likely have negative effect on SMEs operators and people living close to the premises in which they operate. Hutchinson and Chaston (1995) averred that the smaller business sector have not been able to change their practices and embrace management solutions offered. These solutions are the standardized approach by European Union (EU) Eco-

Management and Audit Scheme (EMAS) and the Environmental Management System (EMS) standard of the International Organization for standardization (ISO), ISO 14000 series which appear to be at home with the large organizations.

Gerstenfeld and Roberts (2000) opined that SMEs disinterest in environmental management may be as a result of their strong belief that it can not offer anything to them, or secondly, lack of awareness of environmental management concept. SMEs tend to place environmental issues as secondary, while they focus on immediate and initial incidence situation management. But Smith (2003) observed that environmental costs and obligations continue to grow due to the entire world becoming more conscious of having a healthy environment. Organisations, either large or small therefore ought to be responsible and accountable to be good environmental citizens.

Additionally, SMEs may perhaps find it difficult to measure; their activities effect on the environment which apparently will make them not to have the desire to change their mode of operation. Gerstenfeld and Roberts (2000) averred that SMEs require additional assistance to increase their uptake of environmental management. Such assistance according to Hillary (1995) includes how to address company environmental matters; finance to initiate environmental management actions; gap-bridging mechanisms between SMEs and available support systems.

Most of the developed countries that gave prime attention to the SMEs sector have been experiencing significant reduction in unemployment, increased quality in the standard of living, reduction in crime rate, increased per capital income, rapid growth in GDP, substantial local capital formation, high levels of productivity and a means of achieving equitable and sustainable industrial diversion and dispersal (Asaolu, 2004; Khoa, 2006).

However, in Anglada's (2000) interview conducted on SMEs managers, the managers expressed the view that SMEs alone are not responsible for environmental destruction. The entire societies with all the individual members were held responsible. On the other hand, overpopulation and poverty which is severe, especially in the less developed countries are blamed for pollution and environmental destruction and degradation (Jimoh and Olorunfemi, 2005).

Nigeria is blessed with great natural wealth, but yet, very poor with limited social development. In the quest for social and economic development, little regard has been given to waste management and pollution control.

Activities of SMEs in Oyo State

Environment is essential to life of all living organisms, most especially to man, animals and plants. According to OYSEEDS (2006), without a good and healthy environment, various policies of the state government aimed at improving

the citizens welfare may be in vain.

The urban areas of the State are facing environmental challenges emanating from the activities of industries. OYSEEDs (2006) noted that improper management of wastes being generated from several companies is responsible for this. The State Government therefore empowered the State's Ministry of Environment and Water Resources to ensure all industries operating in the State comply with the rules and regulations set by the Federal Ministry of Environment. The State, through the OYSEEDs seeks to address industrial pollution, waste recycling, industrial monitoring, sampling problems, creating awareness on the dangers associated with environmental pollution and appraisal of environmental impact assessment of industries.

The Ministry of Environment and Water Resources in conjunction with the Ministry of Commerce and Industries encouraged SMEs to take the issue of environment seriously. With the size of the State, according to Oyo State: Past and Present (2002), Oyo State has rich cultural tradition, vibrant economic climate and an intimidating political landscape. It is the fountain of Nigerian civilization and the hub around which other states of the Nigerian nation revolved. This is a very good reason and argument for industries settlement in or near the state capital which is Ibadan. This urban settlement somehow, leads to a disproportional environmental stress. A great number of environment -polluting industries are situated in the urban centres. Such industries include food processing, juice processing, furniture, printing, sachet/bottle water, dry cleaning, metal working and finishing, business centres, leather works, dry gin, among others.

Businesses are mostly found and located in residential areas and designated industrial centers/zones are near living areas. Many SMEs are operating in residential buildings. This side-by-side of home, industry, shops, trade and service is seen as a form of urban lifestyle. This seems to cause a high environmental impairment on the one hand in a densely populated area. On the other hand, SMEs concentration in urban centres pose challenges, such as environmental pollution complaints by neighbours in the form of air, water and noise pollution, sky-rocketing rent, environmental, health and safety controls, higher supply and disposal costs, competition from businesses located outside urban areas, etc.

Most SMEs operating in Oyo state are located in Ibadan (State capital) and they have contributed immensely in polluting the State's environment. Ibadan is known to be one of the districts cities in West Africa, unfortunately, it is also regarded as very, dirty. Though the SMEs are important to the economic development of the city, but little is desired of their apparent non-challant attitude towards keeping the environment clean and livable. According to Green Buzz

(2008), environmentally friendly practices can be successfully combined with traditional business practices.

Carney (2006) observed that Nigeria is increasingly becoming the world's personal computer (PC) dumping ground. Up to 50 million tonnes of old PCs thrown away each year on waste dumps pose a pollution threat to both the environment and the people. Such wastes build up in huge piles in a city like Lagos. Children and young men scavenge for the contents, thereby putting their health at a high risk. Basic components such as lead are recovered and smelting of lead can lead to lead poisoning. Lead affects red blood chemistry, delays normal physical and mental development in babies and young children. It equally causes slight increase in blood pressure in some adults. The old computers contain mercury, nickel cadmium and chromium. Mercury targets the kidneys and can cause nervous system disorders.

Methods of Improving the Environment

Waste minimization and environmental improvement could be achieved through:

1) Recycling: Items that could be recycled include but not limited to aluminum, iron, plastics, inkjet cartridge, pure water sachet, paper, cartons, glass, breakable plates, flexible collapsible tubes (for packaging toothpaste), etc. Recycling raises valuable funds for the collectors of such items, while at the same time, will act as anti-litter engine to create a healthy and clean environment.

2) High quality building materials can be salvaged and re-used.

3) Litter Prevention shows: Litter prevention and recycling shows can be organized from primary school to the tertiary institutions. This is to inculcate in the minds and hearts of citizens the importance of a clean environment.

Environmental Management of SMEs and the Issue of Industrial Zones

The essential social infrastructure is neither adequate nor functional in virtually all the States of Nigeria. This has been posing serious challenges to SMEs growth and development. This infrastructural inadequacy may likely have negative effects on the well-being of SMEs operators and neighbours. Lal (2007) noted that while SMEs are thriving, flourishing and contributing tremendously to the economies of countries like China, Japan, South Korea, United Kingdom, USA, reverse has been the case for SMEs in Nigeria.

Though most States in the country have designated industrial zones, Oyo state inclusive, but many SMEs are located within residential areas. Only few

industries are located in industrial zones. With SMEs known to have the highest pollution intensity (Hillary, 2000; Smith, et al, 2000), they have contributed in no small measure to environmental damage in the State. Hence, chemical oxygen demand (COD) discharges from both SMEs and large scale industries have been on the increase.

Environmental management is somehow seen as secondary since the quest for development and industrialization is paramount to the State (Oyo) in particular and the nation (Nigeria) in general. The resources required for an effective, efficient and comprehensive environmental management system such as human, material, technological and financial seems inadequate. Aside these, environmental planning methods of government appear to be slow in comparison to the large number of SMEs. Though government has institutions and agencies saddled with the responsibility of environmental management, enforcement of environmental regulations and laws seem to be weak. The importance of environmental management to proprietors, workers and management personnel of SMEs appears vague. The desire to maximize profit has pushed the need for cleaner environment to the background, so it seems.

Unlike in the developed worlds wherein consumers are willing to pay higher price for product's of companies that are environmentally friendly (El Serafy, 1996), consumers in Nigeria, ditto Oyo state appears to have little awareness of the importance of environmental management. Even where, there is awareness, poverty that has bedeviled the land has made consumers to close their eyes to how vital environmental management is. This of course has made industries to have less concern about improving environmental management. According to Adelegan (2004), a cleaner environment may involve costly measures and controversial political decisions, which poor communities and enterprises view as a luxury too expensive for them to bear.

Notwithstanding the above scenario, the FEPA Act (1991) stated regulations which are part of regulatory mechanism systems and standards for industries operating in Nigeria. The Ministry of Environment in each State of the Federation adapted FEPA regulations in their own territories. For instance, it is expected that all industries install anti-pollution equipment for detoxification of effluent and chemical discharges emanating from their industry. The installation is expected to be based on the Best Available Technology (BAT), the Best Practical Technology (BTP) or the Uniform Effluent Standards (UES),

It is also expected of any industry discharging effluent to treat such to a uniform level to assumes assimilation by receiving water into which the effluent is discharge. No industry or facility is expected to release hazardous or toxic substances beyond approved limits into the environment. All industries are expected to have pollution monitoring unit within their premises; have pollution

control in their sites and assign pollution control responsibility to a person or body corporate accredited by the Agency (Federal or State as the case may be).

Solid, gaseous and liquid waste discharges from any facility or industry are to be analysed and reported to the Ministry of Environment monthly through a Discharge Monitoring Report (DMR). Industries are held liable for clean-up; remediation or restoration connected with the waste generated by them, and even to compensate affected parties. All industries are expected to adopt in-plant waste reduction and pollution prevention strategies and dispose of solid wastes generated by them.

Methodology

The study which was restricted to Oyo State covered all SMEs and other major actors within the Environmental Management System (EMS) in the thirty three local government areas of the state. These major actors are the Ministries of Environment and Water Resources, Commerce and Industry, and people leaving within the areas where SMEs are located (SMEs neighbours). The above parastatals were selected because the impact of environmental activities by SMEs could be better assessed by studying their roles through their various supervisory ministries.

SMEs, Ministries of Environment and Water Resources, Commerce and Industry and SME neighbours constituted the population of the study. A total of one thousand two hundred and fifty (1250) respondents were randomly drawn for the study. These respondents were drawn from 700 SME operators in 400 selected SMEs, 350 SME neighbours and 200 workers from SMEs supervisory ministries. However, only one thousand two hundred (1200) questionnaires were retrieved and used for analysis.

The list of all the registered SMEs operational in the area of study constituted the framework for the study. The list was obtained from Ministries of Environment and Water Resources and Commerce and Industry.

The nature and types of environmental accounting and management activities of SMEs in Oyo state were determined by a group of operational variables such as the state of SMEs infrastructure, frequency of maintenance of such infrastructures, SMEs funding, degree of technical and human development, government policies guiding SMEs operations, types of operation undertaken by SMEs, and the nature of SMEs.

Respondents were asked to rate the above dimensions on a 5- Point Likert Scale ranging from 'strongly disagree' (1), 'disagree' (2), 'fairly disagree' (3), 'agree' (4), and 'strongly agree' (5), on the basis of their relative importance to SMEs operations.

Socio-economic variables

To evaluate the environmental accounting factors influencing environmental management activities among SMEs, the following Socio-economic variables were identified namely, the age of the SMEs (Xj); experience of the workforce (X2); qualifications of the workforce (Xs); degree of funding (X4); availability of infrastructural facilities (Xs); training of the workforce (Xe); size of SMEs (X?); organizational culture of SMEs (X_8); public perception towards the quality of products of SMEs (Xg); and the extent to which valuable accounting information in environmental management is obtained by SMEs (Xio). The variables mentioned above were measured on a 5- Point Likert Scale of 'Not at all' (1); 'Slightly strong' (2); 'Fairly strong' (3); 'Strong' (4) and 'Very strong' (5) in order to determine the degree of influence the variables had on environmental management activities in SMEs.

To evaluate the environmental accounting factors (EAF) influencing SMEs activities (SMEA), the latter was modeled as a function of 10 identified relevant variables as

SMEA = f(X_h, X* X_3, X_4, X_5, Xfi, X_7, X_8, $X_{9>}$ X_{10}.) + Ut (1)

Where,

SMEA = Small and Medium scale Enterprises Activities. While the environmental accounting factors (EAF) were represented by the following variables namely,

X1 = age of SMEs in years

X_2 = experience of workforce

Xs = qualifications of workforce

X_4 = funding of SMEs

X_5 = state of SMEs infrastructural facility

X_6 = training of workforce

X_7 = size of SMEs

X_8 = organizational culture of SMEs

X_9 = public perception of quality of SMEs production and process

x10 = availability of environmental information to management

U_t = stochastic error term.

The influence of these explanatory variables on SMEA which is the dependent variable was estimated using the linear form of multiple regression expression represented below as:

$$SMEA = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + U_1 \text{.................................(i)}$$

Where

X = Independent Variables

B_1=Regression coefficients of the variables

a_0 =Constant term/slope or intercept

U_1 = stochastic error term

The equation was selected based on the value of R^2, Adj R^2, standard of regression, t-test of each independent variable in the function, F-test of overall equation, appropriateness of sign on the regression coefficients; as -they conform to economic implications and number of statistically significant variables. Durbin Watson dw statistics was used to establish the level of autocorrelation that exist between the dependent and independent variables. The above model is based on the thinking that it satisfies OLS assumptions.

Symbolically, the F-test distribution is expressed as

$$F = \frac{R^2 / k - 1}{(1 - R^2) / n - k}$$

Where R^2 = Coefficient of determination (a measure of fit of the regression line).

Discussion of Findings

In characterizing the nature and types of SMEs activities in Oyo State, the table below was obtained from harvested questionnaire administered to SME operators and SME neighbour. These results were generated one type of waste or the other which invariably may have potential of not only polluting the environment but also could be hazardous to health. Also, most of the disposal techniques employed by the various SMEs only succeeded in recycling the generated waste. Even the ability to effectively handle complex process like waste management by SMEs is suspect sequel to low capacity building or ill-equipped labour force and lack of adequate infrastructural facilities (Newberry, 2006).

Majority of the SME operators, 311 (47.12%) opined that the infrastructural facilities used for combating environmental hazards were grossly inadequate. On oral interview, it was revealed by the respondents that most of the equipment were in varying state of decay.

Nature and types of SMEs activities

Nature	Type	Waste generated	Disposal techniques
1. Wood based Enterprises	Sawmills Furniture industries	Saw dust, fumes and smoke, wood wastes, noise	Burning, burying, evacuation

2. Food based enterprises	Bakeries Other food industries	Waste foods, ashes, packaging wastes ashes	Recycling Burning
3. Textile/clothing	Weaving and tailoring firms	Waste dresses, wools	Recycling
4. Construction materials	Blocks and bricks Making Industries (Quarries)	Discarded cement, broken blocks, dust, packaging material affluents	Recycling
5. Water packaging	Pure water and table water industries	Nylon satchets, plastic bottles	Recycling Burning
6. Cassava processing plants	Garri and cassava flour industries	Pollution of sewage, air	Recycling Burning
7. Palm oil/kernel plants	Palm kernel cake, oil and shell	Effluents, noise	Recycling
8. Metal works	Blacksmithing and welding firms	Scrapped metals, ashes, pellets, wastes	Recycling

Source: Field Survey, 2009.

About 196 (29.7%) SME operators opined that their equipment were inadequate while 101 (15.3%) of the SME operators revealed that theirs .were fairly adequate. Only 33 (5.0%) of the SME operators agreed that they have very adequate facilities 'for their operations that could minimize the level of environmental hazards. Also 19 (2.9%) of the SME operators agreed that they had just adequate facilities for their various operations. All together, 507 (76.8%) averred that their firms facilities for combating environmental matters, were inadequate.

The views of SMEs supervisory ministries showed that 14 (7%) of the respondents were of the opinion that the SMEs had very adequate facilities for handling environmental issues while 4 (2%) believed that the SMEs had adequate facilities to combat environmental hazards. Also 17(8.5%) of the respondents from SME supervisory ministries believed that the SMEs had fairly adequate facilities for their various operations. However, about 165 (82.5%) of the respondents from the supervisory ministries were of the opinion that the SMEs did not have adequate facilities to operate with. Consequently, the views of the SME operators and the respondents from SMEs supervising ministries corroborated the assertion of Adelegan (2004) who opined that resources such as human, material and infrastructural facilities were some of the reasons advocated by Ugwu (2006) for the massive importation of costly equipment by the government in the quest of assisting the SMEs in Nigeria.

The inadequacy of infrastructural facilities may increase the inability of SMEs to address environmental pollution that may arise from solid, liquid and

gaseous wastes generated by their activities. Since most SMEs in Nigeria according to Lai (2007), are located within residential areas unlike in advanced countries where they are mostly found in industrial zones, the environmental impact on the environment could be indeed very high. More so, when it has been discovered that SMEs are known to have the highest pollution intensity and have contributed in no small measure to environmental damage (Hillary, 2000; Smith, et al; 2000),

In view of the foregoing, the importation of pollution-abating facilities to make-up for the inadequacy of infrastructural facilities in SMEs may not necessarily offer lasting solution to the challenges posed by dearth of infrastructural facilities. This is so because the necessary skill to manage and manipulate such facilities must be in place. Unfortunately the SMEs were dominated by low-skilled workers who may not be capable of putting such facilities to effective use.

SME Neighbours Assessment of the Effects of some SMEs Activities on Health and the Environment

Parameters	Very Low	Low	Fairly High	High	Very High	Mean
Scale:	1	2	3	4	5	
Air, water and land pollution						
1. Degree of gaseous discharges	24	18	45	61	192	4.11
2. Rate of indiscriminate and open burning of waste	14	22	27	93	184	4.21
3. Noise from SME operations	102	65	8	25	140	3.11
4. Degree of emissions from SME generators	22	30	87	103	98	3.66
5. Rate of discharge of industrial effluents organic wastes and domestic sewage discharges into the environment	19	26	51	84	160	4.00
Health-related problems						
6. Rate of manifestation of skin related diseases	57	29	102	98	54	3.19
7. Degree of manifestation of respiratory problems	11	6	14	120	189	3.79
8. Degree of disturbances in sleeping	9	37	148	49	97	3.55 9
9. Manifestations of other health problems such as diarrhea, typhoid fever etc from resulting poor hygiene occasioned by SME activities.	40	23	97	78	102	3.53
10. Cost of treatment of the above health related problems emanating from SME Activities	20	48	50	12	210	4.01

N = 340

Source: Field Survey, 2009. Last column: Author's Computation, 2009

Assessment of the effect of SME activities on SME neighbours health and their environment

In the above table, majority of the SME neighbours revealed that the rates of indiscriminate and open burning of wastes, the degree of gaseous discharges, industrial effluents, organic wastes and domestic sewage to the environment by SMEs are very high. This implies that the activities of the SMEs potentates the danger faced by the inhabitants of such areas to air pollution and its attendant consequences. Other parameters such as emission from SME generators and noise emanating from SME operations were high. These findings corroborate the assertions of Bartone and Barrides (1993), Tilley (2000) that many SMEs cause local pollution and constitute a great nuisance to their environment due to the release of bad smell, dust, harmful smoke and toxic wastes into the air water/river and soil. Furthermore, the cost of treatment of SME- induced health problems was rated high. These health-related problems were identified by SME neighbours as fairly high and they include respiratory diseases (3.79), sleep disturbances (3.55), diarrhea and typhoid fever (3.53) and skin diseases (3.19). This finding is in line with the views of Tilley (2000) who opined that environmental degradation from SME activities heightens the incidence of many disease states in human beings which could affect the skin, respiratory system and even other vital organs of the body.

The influence of the independent variables that constitute the environmental accounting factors on SME activities are presented in the linear equation below.

Regression results

The following regression result was obtained from the linear functional form. The linear function was chosen as the lead equation based on a priori expectation of the R^2, standard regression estimates and the f-values of the overall equation. The linear regression results obtained is as follows:

$SMEA = 1.873 + 0.212Xi + 0.158X_2 - 0.256X_3 + 0.228X4 + 0.257X_5 +$

Se(0.21) (0.08) (0.06) (0.08) (0.09) (0.037)

(8.764) (2.617) (2.617) (-3.148) (2.441) (6.867)

$0.482X_6 + 0.375X7 + 0.358X_8 + 0.279X_9 + 0.432X_{10}$

Se (0.035) (0.08) (0.06) (0.08) (0.13)

t(13,954) (4.448) (6.14) (3.457) (3.298)

$R^2 = 0.806$ $R^2 = R^2adj = 0.649$ Dw= 1.51 IF = 68.356**

Regression Results of SME Activities and Environmental Accounting Factors

Items	Linear	T
Constant	1.873**	8.764
X_1	.212**	2.617
X_2	.518**	2.622
X_3	-.256**	-3.148
X_4	.228*	2.441
X_5	.257	6.857
X_6	.482**	3.954
X_7	.375**	4.448
X_8	.358**	6.14
X_9	.279**	3.457
X_{10}	.432*	3.298
R^2	0.806	
R^2adj	0.649	
F	68.356**	
DW	1.511	
Standard error of regression	0.684	

Source: Author's Computation, 2009. *Sig. at 0.01 level, ** Sig. at 0.05 level.

The output obtained from the multiple regression analysis, showed that all the parameter estimates except (X3) the qualification of the SME workforce (-0.256), had positive coefficients. The negative coefficient signifies that most SMEs in Oyo State were dominated by workers who had low qualifications. This may have caused the lack of entrepreurial capacity witnessed in SMEs. In fact, this finding corroborates the findings of Sanusi, 2002; Asaolu, 2004 who averred that low level of education among SME workforce, remains major constraint facing SMEs. All the parameter estimates except state of SME infrastructure (0.257) were significant at 1% and 5% levels because standard error tests revealed that their standard error values were less than half of the values of the parameter estimates.

Conclusion

SMEs activities had tremendous impact on human health and the environment in which they operate. However, the extent of such impact largely depends on a variety of operational and socio-economic variables.

Policy Recommendations

a. Training of SMEs' workforce: Majority of SME operators has Secondary School Certificates; the sector is dominated by low-skilled manpower. This could pose a serious challenge in this era of industrialization and globalization where modern but complex machines are used in production. The empowerment of SME operators is therefore germane in terms of knowledge, skill acquisition and entrepreneurship. These could be done through incessant training of SME workforce both locally and abroad. Higher education which incidentally forms the bedrock of the innovative process should be vigorously pursued. The government through its agencies should advocate for compulsory knowledge acquisition to at least a first degree level or its equivalent before they are qualified to set-up small and medium scale enterprises. This would increase the critical mass of SME workforce and perhaps reposition them to handle modern but complex tasks.

b. Provision of infrastructural facilities: Government at all levels should endeavour to address the issue of inadequate basic infrastructural facilities such as water, electricity and good roads. Inadequate infrastructural facilities in SMEs accounted for their sub- optimal performance because majority of the SMEs could not address environmental problems from solid, liquid and gaseous wastes generated by their activities. Infrastructural problems in SMEs have been posing a lot of challenges to Nigerian government. Over the years not, much has been done to eliminate this problem. Litter bins could also be provided and supplied to every street in each of the 33 local governments of the State. Constant monitoring of all road sides for litter presence and removal should be carried out on daily basis.

The quest for economic development should not lead to continuous degradation and destruction of our environment and human lives. New and improved technologies could be adopted by SMEs to minimize effusions from their activities on the environment.

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