African Journal of Social and Behavioural Sciences (AJSBS)
Volume 11, Number 2 (2021) ISSN: 2141-209X

EFFECT OF TECHNOLOGICAL ENVIRONMENT ON THE PERFORMANCE OF PUBLIC ENTERPRISES: EVIDENCE FROM ENUGU STATE HOUSING DEVELOPMENT CORPORATION (ESHDC), ENUGU SOUTH-EAST NIGERIA

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ABSTRACT: This study investigates the effect of technological environment on the administrative performance of public enterprises in Nigeria: Evidence from the Enugu State Housing Development Corporation (ESHDC), Enugu, South East Nigeria. This study adopted descriptive survey research in which pre-tested and well validated questionnaire was used to collect data from respondents who were selected from all the staff of the Enugu State Housing Development Corporation (ESHDC) under investigation. The population of the corporation was 875 and from this population, a sample of 268 was drawn using Cochran's finite population correction factor technique. The questionnaire comprised 15 closed-ended items set on the 5-point Likert-type scale. Results of the reliability test of the questionnaire showed it has a Cronbach'sAlpa index of 0.84. The respondents were selected using purposive sampling method, which allowed selection of only the senior management staff of the parastatal who had good knowledge of the issues concerning technological environment of their organization. Descriptive statistics that consists of frequency, counts, tables and percentages was used to analyze the data as Multiple Regression Analysis was used in testing the hypotheses of the study. Both the analysis and tests were done with the aid of SPSS software. The findings of this study reviewed that technological invention and innovation have significant effect on the profit margin of ESHDC, Enugu; that automation has significant effect on the sales growth of ESHDC, Enugu; and that technological changes have significant effect on the number of beneficiaries of houses constructed by ESHDC, Enugu. The study recommended that manufacturing firms particularly public owned construction firms in Nigeria should always strive to align with the trend and pace of technological inventions and innovation in society. Again, the study also recommended that publicly owned enterprises, particularly those in the construction sub-sector should address the two problems of lack of funds and poor technical know-how among their employees which are prevalent in Nigeria. Finally, the study also advised government to address the issue of poor power supply currently ravaging the Nigerian business environment, as no technology however sophisticated or readily available can produce the desired effect without adequate energy supply upon which it depends.

Key words: Technology, environment, public enterprises, administrative performance, innovation

INTRODUCTION

Since the present modern economy and governance displaced the old primitive order, business organizations have been organized into two distinct broad forms: private sector organizations and public sector enterprises/entities. Initially in Nigeria, the private sector was largely entrusted with the responsibility of economic development as is evident from the industrial policy resolutions and plan documents. This strategy, however, failed to bring about the required innovation in commercial and industrial enterprises, as the private sector is solely guided by selfish motives like commercialism, profit-maximization, exploitation and autocratism (Nwizu, 2013). Besides, it has not been able to match economic development with social justice.

In order to remove the limitations of the private organizations, the public enterprises were established to develop the needed infrastructure of the economy. These enterprises work as economic multipliers to generate employment, help in expansion of ancillary industries, raise the standard of living and increase the Gross National Product. However, the experience of the last three decades has revealed that the Public Sector has failed to live up to the expectations of the policy-makers and planners in generating economic development on the principles of social justice. Besides, due to under-utilization of installed capacity, recurring loses, rigid bureaucratic control and unwanted governmental interference etc, it has not been able to achieve the desired results.

In the wake of the on-going debate on public sector, the public enterprise today stand at cross-roads, calling for a compelling review of the policy, its objectives and application of principles of autonomy and accountability. The limits of political dictation and bureaucratic interference need to be clearly drawn. Absence of corporate spirit, less professionalized management, under-utilization of installed capacity, over-staffing, over-unionization, inter-union rivalries, low productivity, high rewards and low punishments are some of the ailments that lead to poor performance (Nwizu, 2013). Only very few undertakings have done well, while others lag behind. The entire issue of public sector along with its various managerial dimensions needs to be subjected to an intensive critical examination (Hazary, 2017). The idea of government's involvement in business through incorporation of its own enterprises is, therefore, aimed at breaking the myth and monopoly of the private sector in economic activities as well as providing the society, particularly the common people, social welfare facilities (Olewe, 2015).

Business organizations the world over, be it private or publicly owned, are largely environment-dependent and environment-serving because they do not exist in a vacuum. They depend on their environment for plethora of issues ranging from input resources such as information, ideas, raw materials, finance and labour, among others, to the consumption of finished goods or services by the environment. Besides, their activities are also influenced and shaped by such environmental force as social, economic, technological, competitive, and regulatory forces. Therefore, to succeed and achieve organizational objectives, business organizations adopt strategies that align them properly with their operating environment, the aim of which is to avoid any mismatch between the organization and its environment, So. For business firms in general and manufacturing firms in particular to succeed in their operating environment they need to formulate and adopt appropriate policies and marketing programmers. In order for a manager to remain useful and relevant, he/she must be able to help shape and implement new strategies and new managerial processes and activities by understanding the political-legal, economic, technological socio-cultural and other farces at work (Aluko et al., 2014; Dauda & Ismaila, 2013).

Therefore, no organization survives by being complacent and no organization folds its hands thinking of a well thought-out marketing strategy. Little wonder that organizations are now intensifying their marketing efforts to be market leaders by bringing out new products (Arenu, 2014). Hall (2015) observed that it has been generally accepted or assumed within strategy literature that strategy type impacts on performance. Also, the environment of business and the strategy to adopt have been hypothesized and demonstrated empirically to have significant impact on organizational performance (Porter,2013; Schever,2013).

Porter (2013) also examined the linkage between environment and organizational performance and discovered that environment is the primary determinant of organizational performance. Observers of Nigerian business environment stress that in spite of government's effort to promote core strategic industries in the country, the efforts have been confronted with a myriad of environmental factors which explains why the public business sector has performed below expectation (Mustapha, 2015; Oviemuno, 2012; Oshodi, 2014). Firms are vulnerable to changes in their operating environment in many ways and have great consequences on their operations. As a result of this vulnerability, public enterprisers are required to be proactive firms, that is; to formulate and adopt appropriate marketing strategies as this will enable them to withstand their vulnerability to environment risks such as changes in consumer needs, technological advancement, economic factors, political factors, socio-cultural factors and competitors" activities. This present study examines effect of technological environment on public enterprises in Nigeria.

Statement of the Problem

It has been abundantly stated that a typical business organization is in mutually interdependent interaction with its environment. It can therefore, thrive or blossom when its environment desires its output of goods and services or is prepared to approve or endorse its activities. More specifically, success or failure of any business organization depends on how it responds to changes in its technological environment. The problem is that most firms have gone down as a consequence of the negative, non-prompt or inappropriate responses to changes in their technological environments. In most cases, such problem has emanated from lack of sufficient funds to procure new, modern or up-to-date technology that constantly pervades the business environment and lack of requisite technical know-how and skills on the part of the organizations workforce. Again, even where the funds and technical skills to procure adequate quantity of technology and operate same efficiently are available, the problem of inadequate and epileptic electricity supply or energy constitutes another problem all together.

Despite the potential benefits of ICT and e-commerce, there is debate about whether and how their adoption improves public enterprises performance. Use of and investment in ICT requires complementary investments in skills, organization and innovation and investment and change which entail risks and costs as well as bringing potential benefits. The impact of ICTs and e-business strategies on firms' performance are positive overall, but that ICTs are not a panacea in themselves.

Again, although there are empirical studies in Nigeria that have assessed the impact of environmental factors on the administrative performance or strategic decision of business organizations in general, these studies are too broad in scopes as the focus of their investigations is all the environmental factors put together. As such, these studies have not adequately assessed the influence of technological environmental factors on the performance of business organizations. Hence, this study fills this gap by investigating the influence of technological environment factors only on the administrative performance of public enterprises in Nigeria.

Since business makes demand on the society and the society makes demands on the business, managers in any organization must interact with and respond to environmental factors internal or external to their organizations. The sum of these interrelationships within the business and between the business and the society is what is regarded as "business environment" in management.

Organizations' survival and success depend on the appropriate adoptions to a complex and ever-changing environment. It is pertinent for top management of organization to identify opportunities and threats in the external environment. Internal environment should focus on strengths and weaknesses, potential and existing ones. It should respond swiftly, in order to know where it can have competitive advantage over its rivals. Therefore, any organization should look out or search its environment continuously (Oghojafor, 2013).

The administrative performance of public enterprises in Nigeria is generally poor resulting in the privatization and commercialization of some enterprises and outright bankruptcy and collapse of others.

Over the years, the government has pumped in a lot of money into public enterprises in Nigeria. However, instead of providing their services, most of them seemed to be retrogressing and became drain-pipes on the economy.

The performance of public enterprises is not in any way reflective of the resources they draw from the government and elsewhere. Others summarized their performance thus:

1. Economic inefficiency in the production of goods and services, with high cost of production, inability to innovate, and costly delays in the delivery of the goods produced, ineffectiveness in the provision of goods and services such as failure to meet intended objectives, diversion of benefits to elite groups etc;
2. Poor financial performance reflecting a history of huge financial looses, overstaffing and burden of excessive debts.
3. Lack of adequate technical skills and competencies on the part of their staff.
4. Reluctance to embrace emerging technology.

Objectives of the Study

The broad goal of this study is to examine the effect of technological environment on the administration of public enterprises in Nigeria with evidence from the Enugu State Housing Development Corporation (ESHDC), Enugu. The study, however, pursued the following specific objectives:

1. To investigate the effect of technological innovation or invention on the profit margin of ESHDC, Enugu
2. To find out the effect of automation on the sales growth of the ESHDC, Enugu
3. To assess the effect of technological changes on the number of beneficiaries of the houses constructed by the ESHDC, Enugu

Research Questions

1. What is the effect of technological innovation or invention on the profit margin of ESHDC, Enugu?
2. What is the effect of automation on the sales growth of the ESHDC, Enugu?
3. What is the effect of technological changes on the number of beneficiaries of the houses constructed by ESHDC, Enugu?

Research Hypotheses

1. Technological innovation or invention has no significant effect on the profit margin of ESHDC, Enugu.
2. Automation has no significant effect on the sales growth of ESHDC, Enugu.
3. Technological changes have no significant effect on the number of beneficiaries of the houses constructed by ESHDC, Enugu

Conceptual Clarifications

- **Technological Environment**

Technological environment which comprises technology and its associated components is part of a business organization's general environment. It refers to the method of converting resources into finished products and services by using new machines. The technology, which is applied within an organization, comes from general environment. It includes inventions and improvement of existing methods, machines and materials. This could mean the vast storage of organized knowledge of doing things mechanically rather than manually. The result of technological influence is on the methods of work, design of production as well as machine and improved services. Technological environment, in fact, consists of technological invention or innovation which is the organization's process with computer and machines, technological changes, diversity of technology, and technological incentives (Adebisi, 2012). It also includes use of new equipment and implementation of new process (Kotler and Armstrong, 2005).

- **Organizational Performance**

Organizational performance or effectiveness is the concept of how effective an organization is in achieving the outcomes it intends to achieve (Mitchell, 2013). According to Richard *etal.* (2000), organizational effectiveness captures organizational performance plus the myriad internal performance outcomes normally associated with more efficient or effective operations and other external measures that relate to considerations that are broader than those simply associated with economic valuation (either by shareholders, managers or customers).

Performance refers to the degree of achievement of the mission at the workplace that builds up an employee job. Different researchers have different thoughts about performance. Mostly, researchers use the term performance to express the range of measurements of transactional efficiency and input and output efficiency.

Organizational effectiveness is the concept of how effective an organization is in achieving the outcomes it intends to (Mitchell, 2013). When organizations come into existence, the likelihood is that there is a reason for its existence and there is at least a desired future state that the organization attempts to realize. How well the organization fares with regards to its goal attainments is its performance (Stoner et al., 2016). The authors are of the view that organizational performance is the manure of how an organization does its job. In other words, the organization attempts to assess how well it achieves its appropriate objectives. Corporate performance is the ability of an organization to achieve results and attain its goals by making effective use of resources available to it (Wokoma and Iheriohanma, 2010). The concept of performance cuts across all spheres of operation within and outside the organization. In business, the analysis of performance whether financial, production, marketing, managerial, or in general activities, is very necessary because the outcome of the present decision lies in the project of the future (Oparanma, 2010).

For many organizations, the measurement of performance is a constant, on–going activity. The use of business performance dashboard are increasingly being used as a way for executive to keep track of key performance matrices as sales in relation to target, number of products on back order, or percentage of customer service calls resolved with specified time periods (Bartholomew, 2005). The author suggests that dashboards when deployed through an organization for each employee will help to track progress towards goals to spot performance gaps and device innovative strategies to get back on course. Ojo (2015) identified empirical studies on corporate performance as coming from discipline such as industrial economics, strategic management, accounting and finance. Thus the focus in each situation appears to depend on who is carrying out the evaluation and the purpose. Corporate performance is a firm's ability to obtain favourable outcomes in terms of its level of productivity, profitability, rate of employee turnover, innovativeness, sale volume or growth, product success, employ productivity, return on equity and return on capital employed (Kotler, 2013).

- **Administrative performance**

Administrative performance is an ongoing process of communication between a supervisor and an employee that occurs throughout the year, in support of accomplishing the strategic objectives of the organization. It is the process of ensuring that a set of activities and outputs meets an organization's goals in an effective and efficient manner. Performance management can focus on the performance of an organization, a department, an employee, or the processes in place to manage particular task. The administrative performance highlights training needs, boosts morale, helps with identifying the right employees for promotion, supports workforce planning, increases employee retention and delivers greater employee autonomy.

- **Public Enterprises**

Public enterprises have been a form of government involvement in the economic activities in a given country. Sometimes, owing to some conditions, government enters into the production of goods and services that are too expensive for private sectors to go into except monopolies like big multi-national companies, and to provide them at affordable prices. According to Ozor (2014), monopolies charge such high prices that if not controlled by government, their products may become too exorbitant for the average citizen in the society to afford and hence consume. Government then must come in, either to provide the legal framework to regulate monopoly pricing or to produce those goods and services itself, and in the process make their consumption within the reach of the low-income earners in the society.

There are also other business due to its security and political implications (like production of currencies) only government can engage in them leading, therefore, to the establishment of public enterprises. The Nigeria's Second National Development Plan (1970-74) cited in Ezeani (2016:211) puts it succinctly that their primary purpose is to stimulate and accelerate national economic development under conditions of capital scarcity and structural defects in private business organizations. There are also basic considerations arising from the dangers of leaving vital sectors of the national economy to the whims of the private sector often under the direct and remote controls of foregoing large scale industrial countries.

Accordingly, Ezeani (2016) noted that the foregoing is the reason why public enterprises became active in key sectors such as manufacturing, construction, finance, services, utilities, transportation, agriculture, natural resources, etcetera. They are not there primarily to make profits but to provide essential goods and services to the citizens.

Deutsh (2004) defines public enterprises as comprising all organizations run by employees of any government in which the government has a majority of the equity holdings. This definition connotes that government employs all the staff of public enterprise and thus has the control and majority interest in those organizations.

In a United Nations publication (1974 cited in Ezeani, 2016), public enterprises are defined as those enterprises in which the government has majority interest of ownership and or management. It further demonstrated that public enterprises are industrial, agricultural and commercial concerns which are owned and controlled by the government.

In his own contribution, Irukwu (2007) defined a public enterprise as any organization, institution or enterprise, which is operated under the auspices of the state, either as a commercial concern or as an instrument for social welfare and services, and are ultimately responsible to the state. This definition underpins two factors correctly as reasons for the establishment of public enterprises by the government, namely for commercial and social welfare purposes. Ozor (2014) aptly defined public enterprises as institutions wholly or partly owned by the government, created outside the framework of civil service, to perform some vital developmental functions which the deficiencies of public bureaucracy rendered incapable of undertaking. Public enterprises are defined here as organizations legally established by government, run by government employees and appointees and with government having a majority interest for the purposes of providing essential services primarily for the citizens welfare and for making profits. Public enterprises could be categorized into the following:

i. Industrial and commercial corporations: Here, the main aim is money or profit maximization. In Nigeria, examples of commercial corporations are the Nigerian Ports Authority, the Nigerian Airways, Nigerian Coal Corporation, Transport Corporations to name but a few. When this type of corporation was established in Nigeria, the expectation was that it should be able to stand on its own without any financial subvention from the government. They should make profits and generate revenue for the benefit of the public.
ii. Social Service or Welfare Corporations: These corporations cater for the welfare and social needs of the community. Unlike the industrial and commercial corporations, social services or welfare corporations are non-profit making. The primary motive is not profit making, but to render Social Service. A good example is Housing Corporation. However, the price charges by this type of public enterprises for goods and services are expected to cover the cost of production. It is the principal objective for it to break even in the long run. Policy legislation is essential to regulate the socio-economic activities of public enterprise.

Empirical Review

The survey of the extant empirical studies on the subject matters reveals that there are limited studies that have specifically investigated the influence of technological environmental factor on the performance of business organizations in Nigeria. Many of these studies have very broad scope looking at the totality of the environmental factors which denied the studies adequate and specific analyses. Besides, none of the studies looked at the specific effect of technological factors on the performance of organizations.

For instance, Tuanmat and Smith (2016) investigated the effects of changes in competition, technology and strategy on the performance of manufacturing companies in Malaysia and discovered that companies now recognize that advanced manufacturing technology have impact on organizational strategic behavior as their study’s model shows a positive relationship between advanced manufacturing technology and organizational strategy.

Also, the study conducted by Adeoye and Elegunde (2012) examined the impact of external business environment on organizational performance in the food and beverage industry in Nigeria. It investigated the influence of economic and political environments on organizational performance. It utilized questionnaire instrument to collect information from the respondents based on a sample of 3 companies with 150 sample size. Data collected were analyzed using multiple regression analysis. The findings of the analysis show that the external business environment with such proxies as political, economic, socio-cultural and technological factors among others have impacted on organizational performance measured as effectiveness, efficiency, increase in the sales and achievement of corporate goals.

In the same vien, Mustapha and Ekpunobi (2016) measured the extent of the effect of each environmental factor on the performance of depressed textile manufacturing firms in Kaduna State and found that technological factor ranked first among other environmental factors in terms of its negative impact on the performance of the depressed manufacturing firms operating in Kaduna State.

Dauda and Ismaila (2013) also carried out a study that examined the influence of technological environmental factors on the strategic choice of quoted manufacturing firms in Nigeria's food and beverage industry in Nigeria. The study used survey research to collect data from 159 management staff of six (6) companies. The study also used multiple Regression Analysis to test the hypothesis put forward as a guide to the study. It is the finding to the study that technological environmental factors prompted quoted manufacturing firms in the food and beverage industry to adopt multi-product strategies. It also recommended that responsible managers in the Nigerian food and beverages industry desirous of success in their operating environment should pay particular attention to technological, factor dynamism such as technological invention, advancement in technology availability of the state-of-the-art technology, nature of technology, changes and diversity of technology in the manufacturing firms operating environment.

Ikemefuna and Abe (2015) in another study used a methodology that combined both review of related literature and survey research to examine the effect of technological environment on the performance of selected manufacturing industries in Enugu State, Nigeria. 198 staff were randomly selected from ten (10) manufacturing firms and used as target respondents in the study. The statistical tool used in the study was Pearson's product moment correlation. In the study, it was found that technological environment has significant influence on the growth and performance of the manufacturing industries in Enugu State. Finally, it was the recommendation of the study that manufacturing firms' operators in Nigeria should strive to always mobilize adequate funds for purpose of heavy investment in technology hardware, ICT, and training (skill upgrading).

General Impact of Technological Environment on the Performance Organizations

Technology is the process of transforming scientific discoveries into realities. According to Kotler and Armstrong (2005), every new technology replaces an older technology and that technological environment is highly dynamic as new technology render old ones obsolete, while it also creates new markets and opportunities. Thompson & Martin (2015) pointed out that technology in one respect is part of the organization and it is used for the creation of competitive advantage. Technological breakthroughs can create new industries which might prove a threat to existing organizations whose products or services might be rendered redundant, and those firms which might be affected in this way should be alerted to the possibility. Equally, new technology could provide a useful input, perhaps in both manufacturing and service industries, but in turns its purchase will require funding and possibly employee training before it can be used (Thompson & Martin, 2015).

In the views of Babatunde and Adebisi (2012), technological factors include technological aspects such as research and development activity, automation, technology incentives and the rate of technological change. They can determine barriers to entry, minimum efficient production level and can influence outsourcing decisions. Furthermore, technological shifts can affect costs, quality, and can lead to innovation. Specifically, this study investigates how technological invention, advancement in technology, availability of the state-of-the-art-technology, nature of technological changes and diversity of technology affect the performance of banks in Nigeria. A technological innovation can have a sudden and dramatic effect on the environment of a firm. Firstly, technological developments can significantly alter the demand for an organization's or industry's products or services (Barnat, 2015; Business Teacher, 2012). According to Barnat (2015), technological change can decimate existing business and even entire industries, since it shifts demand from one product to another. Moreover, changes in technology can affect firms operations as well as its products and services. He further said that these changes might affect processing methods, raw materials and service delivery. Therefore, managers should keep track of the advancement and invention in technology, nature of changes in technological environment as well as the diversity in technology in their operating environment.

It is this aspect of business environment, that is, external or uncontrollable environment which is of interest of this study. Indeed, the study specifically investigated how happenings in the technological environment of Enugu state housing development corporation in South-East Nigeria.

In line with this, Osuagwu (2015) argued that firms that stand their vulnerability to these environmental factors must possess many uncommon characteristics including ail adaptive and flexible managerial style, a balanced portfolio of products, and a well-developed intelligence and information system designed to monitor and anticipate environmental changes. Furthermore, Ansoff (2016) suggests that the more turbulent the environment is, the more aggressive the firm must be in terms of competitive strategies and entrepreneurialism or change orientation if it is to succeed.

Influence of Technological Environment on the performance of Manufacturing and Construction Firms

Mustapha and Isamaila (2013) cited in Machuki and Aosa (2017) identified four ways technological environment of a manufacturing or construction firm can influence its organizational effectiveness. They include investing in ICT (e-business facilities), investment in skill upgrading, investment in technology hardware, and technological collaboration with foreign firms.

Investment in ICT (E-business facilities): Investment in ICT is an important factor that has enabled the competitiveness of many successful economies in recent decades. However, while Nigerian manufacturing firms still lag behind in the use of ICT in production process Nigerian firms are beginning to employ ICT in operations management and other e-business activities. Adeoti (2011) defines e-business to encompass the application of ICTs in all business processes such as office automation production processes, coordination with other plants, customer relations management, supply chain management, and management of distribution network.

Investment in skills upgrading: For the purpose of this study, we conceive investment in skills upgrading to entail investment in training activities that enable better and efficient operation of machines and equipment. However, skills upgrading is generally reckoned as the outcome of learning mechanisms that enable firms improve their technological capability endowment. Shrivastava (2014) observed that such upgrading fosters cross-fertilization of knowledge, and thus enhances technological innovation and health-friendly manufacturing processes.

Investment in technology hardware: This variable represents firm's implementation of a programme of re-engineering that brings in new production equipment/machines or re-engineering that improves re-existing production equipment/machines. Many Nigerian firms are known to use second-hand machines and equipment due to capital constraints, and some even use production equipment that is obsolete. It is assumed that an immediate challenge that faces firms would be the necessity to embark on a re-engineering programme that would replace obsolete or inefficient machines/equipment in order to significantly improve production performance (Ikemefuna & Abe, 2015).

Technological collaboration with foreign firm(s): Lal (2014) observed that technological collaboration between local and foreign firms can have positive impact on performance of firms. Technological collaboration in this respect comes in the form of foreign direct investment in a subsidiary of a multinational firm, technology licensing, technical agreements, trademarks, etc.

The State of and Challenges Facing Public Enterprises

In countries like India, Mexico and Nicaragua, PE accounted for 80 percent or more of the value-added in manufacturing (World Development Report, 1997). Nigeria was not exception in terms of the belief that the state and public enterprises have a role to play in the country's development efforts. The oil boom of the 1970s enabled the government to venture into "ownership" and control of economic activities. The Nigerian Enterprises Promotion Decree of 1972 set the basis for the government's extensive participation in the ownership and management of banking, insurance and industry, (Onwioduokit, 2009). The seriousness of expansion of PEs and virtually the policy shift which allowed the public sector to take the commanding height in Nigeria cannot be overemphasized.

In spite of the huge investments in PEs in Nigeria, their services could not meet the demand aspirations of the populace. The Report of the Onosode Presidential Commission on PEs (1984) revealed that most of the PEs were infested with some problems which related to:

i. Defective capital structures resulting in heavy dependency burden on national treasury.
ii. Mismanagement of funds and operations
iii. Misuse of monopoly powder culminating in corruption; and
iv. Bureaucratic bottlenecks within the PEs/Supervisory ministerial linkage.

These problems according to the Commission (1984), resulted in ill-conceived investments, political interference in PEs' decision-making processes, costly and inefficient use of scarce resources, growing budgetary burden and the diversion of credit and other resources meant for other sectors of the PEs sector. (Ayodele, 2014).

The performance of most public sector enterprises has been the source of worry to both the government that established them and to the general public the enterprises are supposed to serve.

Ushiagaiale (2000) argues that although government established PEs to create jobs, spread development and provide social services, experience has shown that these lofty deals could not be achieved as a result of corruption, mismanagement, dependence on treasury funding, poor services, arrogance,ethnicism, parasitism and inequities.

Odiaka (2000) corroborates the above view and contends that poor administration and lack of skill in the application of resources management have been the worst problems bedeviling public sector enterprises in Nigeria.

In the words of Ogbamgba (2016) the problems of PEs such as ill-conceived investments, political interference in decision making, costly and inefficient use of public resources are the factors responsible for the decadence of public companies. According to Ukwu (2015), PEs flounder under the weight of political boards, poor management and demoralized staff. He further states that the organization of PEs has been a matter of grave public concern and that this is attested to by the number of public enquiries and government reforms that has characterized these enterprises.

Enugu State Housing Development Corporation, (ESHDC) Enugu, Nigeria

The Enugu State Housing Development Corporation (ESHDC), Enugu rose out of the ruins of the defunct Eastern Nigerian Housing Development Corporation that was established in 1965. As a matter of fact, ESHDC, Enugu was established by ESHDC Law cap 58, Law of Enugu State Government 2004. The Corporation was wholly owned by the Enugu State Government as one of its parastatals. Since it came into being, the corporation has built many houses of different types and quality for various classes in a good number of housing estates it has established across many parts of Enugu State. For instance, within the last one year, the corporation as part of its drive to make houses available to citizens and inhabitants of Enugu State established seven housing estates, namely, Heritage, WTC, Transparency, Rangers, Pinacle, Liberty, and Valley Estates in Enugu.

Methodology

This study adopted descriptive survey research in which pre-tested and well validated questionnaire was used to collect data from respondents who were selected from all the staff of the Enugu State Housing Development Corporation (ESHDC) under investigation. The population of the corporation was 875 and form this population, a sample of 268 was drawn using Cochran's finite population correction factor technique.

The questionnaire comprised 15 closed-ended items set on the 5-point Likert-type scale. Results of the reliability test of the questionnaire showed it has a Cronbach'sAlpa index of 0.84. The respondents were selected using purposive sampling method, which allowed selection of only the senior management staff of the parastatal, who had good knowledge of the issues concerning technological environment of their organization. Descriptive statistics that consists of frequency, counts, tables and percentages was used to analyze the data collected. Inferential statistics known as Multiple Regression Analysis was used in testing the hypotheses of the study. Both the analysis and tests were done with the aid of SPSS software.

Results

Results of the analysis showed that out of the 268 questionnaires distributed, 253 (94.4%) were returned well completed. 11(4.1%) were not returned at all, while 4(1.5%) were retuned but rejected owing to inappropriate completion. It was the responses borne by the 253 well completed questionnaires that were extracted and coded into data that were used for both the subsequent analysis and test. In this section, the results of the Multiple Regression Analysis based on the model earlier specified above by the study are presented below. As earlier stated, the hypotheses of the study are tested using Multiple Regression Analysis. The test was carried out using the primary data generated from the field survey. As part of the test procedure, the said data were fed into the SPSS software according to each of the four hypotheses. The results of the test are displayed in tables 1,2, and 3 below.

Table 1: Model Summary

Model 1	R	R Square	Adjusted R Squared	Std Error of Estimate	Durbin Watsun stat.
1	0.547	0.229	0.698	0.91487	2.614732

a. **Dependent variable:** profit margin, sales growth, number of beneficiaries of houses constructed.
b. **Predictors (constants):** Technology innovation or invention, automation, technological changes.

Source: Field Survey, 2018; SPSS output

Table 2: ANOVA Model

Source of difference	Sum of squares	Df	Mean square	f_o	Sig
Between Groups	8.111	3	2.7923	10	.000
Within Groups	37.306	347	0.270		
Total	45.415	350			

a. **Dependent variable:** profit margin, sales growth, number of beneficiaries of houses constructed.
b. **Predictors (constants):** Technology innovation or invention, automation, technological changes.

Source: Field Survey, 2018; SPSS output

Table 3: Co-Efficient

	Unstandardized Coefficients		Standardized coefficients	T	Sig
	B	STD Error	Beta		
Constant	1.659	0.242		6.85	0
Technological invention or innovation	0.83	0.07	0.097	1.189	0.002
Automation	0.22	0.065	0.279	3.41	0.001
Technological change	-0128	0.05	0.203	-2.532	0.012

a. **Dependent variable:** profit margin, sales growth, number of beneficiaries of houses constructed.
b. **Predictors (constants):** Technology innovation or invention, automation, technological changes.

Source: Field Survey, 2018; SPSS output

The results of the Multiple Regression Analysis as displayed in tables 1 and 2 are interpreted below. Table 1 shows that the Adjusted R Squared has the value of $r^2 = 0.698$ which indicates that when all the variables are combined, the multiple linear regression model could explain for approximately 70% of the variation in performance of the ESHDC. In Table 2, it is shown that the calculated F-values is 10.0, which shows that the recession model is very significant and well specified at the probability of 0.000. Table 3 shows that the four independent (predictors) variables have the following beta and probability values: mentoring (B = 0.097; P = 0.002) (B = 0.279; P=0.001) technological innovation or invention, automation.

Fromtable 3,we can easily construct the prediction equation of the relationship or model as follows:

Performance of ESHDC = 1.659+0.097 (technological innovation or invention)+ 0.279 (automation) +0.203 (technological changes).

When interpreted, the equation tells us that when technological innovation or invention goes up by 0.097 or 10%, the performance of ESHDC. When automation increases by 1, the dependent variable (the performance of ESHDC) goes up by 0.279 or 28%.When technological changes increases by 1, the dependent variable (the performance of ESHDC) goes up by 0.203 or 20%.

Test of Hypotheses

The three hypotheses are tested by using the primary data generated from the field survey. The test of the hypotheses is based on the results of the Multiple Regression Analysis as contained in Table 3 above.

Hypotheses No. 1:

i. Technological innovation or invention has no significant effect on the profit margin of ESHDC, Enugu.

Table 3 shows that the beta value is 0.097, while the probability is 0.002, which is less than the critical probability of 0.05.This means that there is very low probability that the statement overall model was insignificant was true.

Decision

The probability of the model (0.002) is less than the critical probability of 0.05 and the model found to be significant with a calculated F-value of 10.0. Based on the decision rule for this study as specified, the null hypothesis should rejected, and the alternate hypothesis accepted. We, therefore, conclude that technological innovation or invention has significant effect on the profit margin of ESHDC in Enugu, Nigeria.

Hypothesis No. 2

ii. Automation has no significant effect on the sales growth of ESHDC, Enugu.

Table 3 also shows that the beta value of the model is 0.279 as it pertains to automation at a probability of 0.001, which is less than the critical probability of 0.05.

Decision

Since the probability of the regression model as it pertains to automation is 0.001, which is less the 0.05 critical probability threshold and the model significant at a calculated F-Value of 10.0, we reject the null hypothesis and accept its alternate one going by the decision rule of the study. We, therefore, conclude that automation has significant effect on the sales growth of ESHDC, Enugu.

Hypothesis 3

iii. Technological changes have no significant effect on the number of beneficiaries of the houses constructed by ESHDC, Enugu

Table 3 shows that the beta value of the model with regard to technological changes is 0.203, while its probability is 0.012, which is less than the critical probability of 0.05.

Decision

Given the fact that the probability of the model as it pertains to technological changes is 0.012, which is less than the critical probability of 0.05, we should reject the null hypothesis and accept the alternate one. We have no other option, therefore, than to conclude the technological changes has significant effect on the number of beneficiaries of the houses constructed by ESHDC, Enugu.

Discussion of Findings

Results of this study as it pertains to the first research question to objective No. 1 show that technological innovation or invention had significant effect on the profit margin of ESHDC, Enugu ($B = 0.097$; $P= 0.02<0.05$). This finding is in line with the earlier finding of Smith (2011), who concluded that technological innovation had significant effect on the performance of the manufacturing companies he surveyed in Malaysia.

According to the results of the study that pertain to the research question to objective No. 2, automation had significant effect on the sales growth of ESHDC, Enugu ($B=0.279$; $P=0.001< 0.05$). This result is corroborated by the earlier opinion of Mustapha &Ekpunobi (2011), who had concluded that lack of automation featured as the most technological factors that had significant effect on the performance of the depressed textile companies they surveyed in Kaduna State, Nigeria.

Results of the study as it pertains to the research question to objective No.3 show that technological changes had significant effect on the number of beneficiaries of the houses constructed by ESHDC, Enugu ($B= 0.203$; $P= 0.012< 0.05$). The foregoing finding is in agreement with the earlier conclusion of Adeoye&Eleguade (2012) that technological changes and diversity in technology have significant effect on the number of customers of the food and beverage industries they duo surveyed in Ibadan, Nigeria.

Conclusion

From the findings of this study, it could be concluded that generally technological environment of any business organization has significant impact on the performance of such organization. Specifically, technological invention or innovation, automation of processes, changes in technology, availability of state-of-the-art technology, and diversity in technology have had significant impact on the performance of manufacturing firms and construction firms in Nigeria.

There is indeed no doubt that majority of organizations including the construction firms have taken the advantage of IT to enhance their operations. Today, most of them have websites on the internet in order to extend their market globally, provide executive services and promote quality of products and services beings severed. The foregoing has set in motion a revolution construction firms in Nigeria.

Recommendations

First and foremost, managers of manufacturing and construction firms in Nigeria, should appreciate the fact that the technological environment of their business outfits has significant influence on the profitability and return on equity levels of their organizations. Thus, these managers should strive to always be proactive in dealing with the pace trend of invention and advancement in technology as well as diversity and nature of changes in the technological environment

Secondly, construction firms in Nigeria should strive to address squarely the two problems of lack of funds and poor technical know-how that have been standing on the way of survival and success of most organization, particularly as it affects the demand of technological environment on housing construction firms in Nigeria can tackle these problems by way of attracting external capital including going to the capital market and investing in training and human resource development.

Government, on its own and as part of its statutory responsibility of providing the enable environment for smooth operation of the private sector, should ensure that the problem of inadequate and epileptic supply of electricity in Nigeria is squarely addressed. Doing so will ensure that the technology that is available to business organizations, particularly housing construction firms in Nigeria always has the badly needed adequate electricity for effective functioning or operation.

REFERENCES

Adeoye, A. O. & Elegunde, A. F. (2016). Impacts of External Business Environment on Organisational Performance in the Food and Beverage Industry in Nigeria, *British Journal of Arts and Social Sciences,* 6 (2), 119-233.

Aluko, M., Odugbesan, O., Gbadamasi, G. & Osuagwu, L. (2014), *Business Policy and Strategy.* Lagos: Purnark Nigeria Limited.

Ansoff H. (2016). *Strategic Change and the Strategic Marketing Process*, Oxford: Black well.

Ansoff, H. & McDonnell (2014). *Implanting Strategic Management.* (2nd ed.), New Jersey: Prentice Hall

Anugwom, G. (2015), *Strategic Management and Issues in Business Policy: Concepts, Illustrations and Case.* Enugu: CIDJAP Press.

Aremu, M. A. (2014). New Product Planning and Development: A veritable tool for Competitive advantage. *Ilorin Journal of Business and Social Sciences.* 3(1 & 2), 103- 111

Ayodele, A. S. (2014). Issues in Privatization of Public Enterprises in Nigeria, *Bullion,* CBN Publication (Privatization Strategies), 23, N0.3.

Babatunde, B.O. & Adebisi, A.O. (2012). Strategic Environmental Scanning and Organisational Performance in a Competitive Business Environment, in *Economic Insight -Trend and Challenges, LXIV (1).*

Baker, M. J. (2012). *Marketing Strategy and Management*. London: Macmillan Press Ltd.

Barnat, R. (2015). *Strategic Management,* New Jersey: Prentice Hall.

Business Teacher (2012) Business Environment Retrieved from http://www.businessteacher.org.uk/businessenvironments/global-factors-strategy.php#ixzz2KI5QmYvXon23rd April,2012

Cochran, W. G. (1977). *Sampling Techniques*. (3rd ed). New York: John Wiley

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16. 197- 334.

Danda, A. & Mustapha, Y. I. (2013). Influence of technological environmental factors on the strategic choice of quoted manufacturing firms in Nigeria's food and beverage industry, *International Journal of Business and Technology,* 3 (8), 159-169.

Ezeani, E. O. (2006). *Fundamentals of Public Administration.* Enugu: Snaap Press Ltd.

Hall, E. H. (2015). Corporate Diversification and Performance: An investigation of Causality, *Australian Journal of Management*, 20 (10) pp 25- 42.

Hazary, N. M. (2017). Public Enterprises in India: Problems and Prospects, *Journal of Institute of Public Administration*, 3. (5) 1-4 April.

Hicks, H. G. & Gullett, C. R. (1981), *Management of Organisation: A Systems and Human Resources Approach,* New York: McGraw-Hill.

IIe, N. M. (2000). *Comparative and International Management,* Enugu: Ochumba Printing and Publishing Company.

Ikemefuna, I. & Abe, A. (2015). Technological environment and some selected manufacturing industries in Enugu State, Nigeria, *Journal of Global Economics,* 3 (2), 149-158.

Kotler P. & Armstrong G. (2005). *Principle of Marketing* (6th edition), New Jersey: Prentice Hall.

Kotler, P. & Keller, K. L.(2009). *Marketing Management.* (13th ed.). New Jersey, Prentice Hall

Kotler, P. (2003). *Marketing Management.* (11th ed.).New Delhi: Prentice Hall

Mustapha, Y. I. & Ekpunobi, G.N. (2011) Assessing the Effect of Environmental Factors on the Performance of Depressed Textile Manufacturing Firms in Kaduna State, *Advances in Management. Journal of Department Business Administration* University of IIorin, Nigeria, 9 (1), 21-44.

Nwizu, G. (2013). *Management of Public Enterprises and Co-operatives: An Interdisciplinary Approach*, Enugu: John Jacob's Publishing Co. Ltd.

Olewe, B.N. (2015). *Development Administration,* Aba: Grace Books.

Oluyede, P.A. (2015). *Nigerian Administrative Law*, Ibadan: University Press PLC.

Onuoha, B. C. (2008). *Fundamentals of Business and Management in Nigeria*, Onitsha: Avan Global Publications.

Onuoha, B.C. (2007). *A Handbook for Successful Management of Organisation,* Enugu: Educational Books and Investment Limited publishers.

Onwioduokit, E.A. (2009), Privatization in Nigeria: Options for the next millennium, *Bullion* (C.B.N Publication), Privatization Strategies. 23.

Osuagwu, L. (2015). Environmental Perception in Bank Marketing Strategies, *Journal of Marketing Research*, 8 (3), 99-141.

Oviemuno, A.O. (2012). Impact of Energy on Manufacturing Sector in Nigeria. *Journal of Marketing Research*, 8 (3), 161-184.

Ozor, E. (2004). *Public Enterprises in Nigeria: A study in Public Policy making in a Changing Political Economy*, Ibadan: University Press Plc.

Porter, M. E. (2013). *Competitive Strategy.* New York: Free Press.

Porter, M. E. (2015). The Contribution of Industrial Organisations to Strategic Management, *Academy of Management Review,* 6, 609 - 620.

Schever, F. M. (2013). *Industrial Market Structure and Economic Performance.* Chicago: Rand McNally.

Sharma, M. L. & Sadana, B. L. (2014). *Public Administration in Theory and Practice,* Allahabad: Kitab Mahal.

Stoner, J. A. F., Freeman R. E. & Gilbert, Jr. D.R. (2011) *Management* (6^{th} edn), New Delhi: Prentice-Hall

Technical Committee on Privatization and Commercialization (1993), The Presidency: *TCPC Report,* 1 (Main Report).

Tevfik, A. & Oktay, F. (2008). Diversification and Firm Performance in an Emerging Market: The Turkish Case. *Journal of Global Strategic Management.* 3. 131-137

The Report of the Onosode Presidential Commission on Public Enterprises, 1984.

Thompson. J. & Martin. F. (2015). *Strategic Management: Awareness and Change* (5^{th} ed.): New York: Thomson Press.

Tuanmat, T. Z. & Smith, M. (2011) The Effects of Changes in Competition, Technology and Strategy on Organizational Performance in Small and Medium Manufacturing Companies. *Asian of Accounting,* 19 (3), 208 - 220

Ukwu, I. U. (2015).*Managing National Development: Essays on Public Management in Nigeria,* Enugu: Institute for Development Studies Publications, University of Niger-a, Enugu Campus.

Ushiagiale, J. (2000). Economy: FG Loses N265 Billion Annually from Public Enterprises, *This Day Newspapers,* Vol. 6 No. 1850, May 16th.

Wilson, R. S., Gllingan, C. & Pearsin, D. J (2014). *Strategic Management: Planning. Implementation and Control,* Oxford: Butterworth Heinemann Ltd.