IMPACT OF INFRASTRUCTURE ON HUMAN CAPITAL DEVELOPMENT IN IMO STATE POLYTECHNIC, OMUMA NIGERIA

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Abstract

The study examined impact of infrastructure on human capital development in Imo State Polytechnic, Omuma. The epileptic power supply, absence of communication service providers to better communication system, transport services and the shortage of classroom and staff offices, insecurity and unfavorable government policies influencing the growth and development of human capital development in Imo State Polytechnic. The study adopted descriptive survey which involved the application of both primary and secondary data collection to obtained information for the study. The primary data collection was obtained through questionnaires administration and empirical review while the secondary sources include; literature review gotten from textbooks, journals and newspapers. The population of the study is 1353 while sample size is 318 calculated with Taro Yamane formula of 5% coefficient error estimated. Simple random probability sampling technique was used to ensure the equal participation of all the personnel. The face validity and reliability was used. The theories used in this study are A demand side economic theory of infrastructure propounded by Brett, M. Frischmann in (2005) and theory of Human Capital development by Stanley Becker (1964). The data presentation and analysis were carried out with the use of simple percentage and the statistical tables. The researchers observed that infrastructure enhances creativity, innovation, improve communication, fosters technological development and facilitates information and communication technology on human capital development on productivity in Imo State

Polytechnic. The training; education, skill acquisition and other needed abilities and capabilities including good health condition cannot be achieved without infrastructures which enable effective production and services in the organization and the inadequacy mare productivity. The recommendations include that management in collaboration with state government should as a matter of urgency ensure policy that can sustain infrastructural development and provide standard health care services to enable staff have access to routine services to enable organizational productivity. The conclusion opine that infrastructure such as electricity, buildings, class rooms, water, access roads, information and communication gadgets both hardware and software are essential for human capital development and organizational productivity in Imo State Polytechnic, Omuma.

***Key Words**: Infrastructure, Human Capital Development, Productivity, Impact, Organization*

INTRODUCTION

Etymologically, the word infrastructure was coined from the Latin word 'infra' which means "below". It is taken to mean "foundation" (Buhr, 2003). Infrastructure is the bedrock of every successful human capital development in our environment. It is the fundamental structure to which organizations are established and operates. Nijkamp (2000) opined that infrastructure is a material of public capital which include; roads, railways, airport, seaport, pipelines etc and supra-structure which means immaterial, public capital (knowledge networks, communication, education, culture etc). It is essentially material infrastructure supplied by the state and its formulation of political technocracy. Traditionally, infrastructure is the permanent installations required for military purposes. The modern general usage of infrastructure means the necessary economic and organizational foundation of highly developed economy (transport network, labour force etc (Wermke/Stubenrecht, 1997, p.359). This informs Jalilia and Weiss (2004) who studied on the impact of roads investment on poverty levels and education enrolment in secondary school to argue that the impact of roads investments on poverty levels increase by nearly thirty percent as secondary school enrolments in an area increase from 25 to 75 percent. This can be related to Imo State polytechnic where roads and transport network are in sorry state. The poor/dilapidated roads

network coupled with other network of communication experiences poor setup and malfunction affecting human capital development and productivity in the Institution. The absence of communication network services like MTN, GLO, ETISALAT network etc that should enable the promotion of viable socio-economic and Administrative system of the institution are at the bottleneck. These affect the productive service delivery in the organization. Infra-structure and info-structure are the components structure of the organization that makes possible the foundation of the organization. The importance of electricity, water supply, school, markets, hospitals, roads network, library and buildings cannot be over-emphasized as they represented infra-structure, while e-records, e-documentation, authentication, e-payments and portal are the info-structure which enables the transparent nature of organization services. These determine the quality of human capital development and the organizational productivity in Imo State Polytechnic, Omuma. The epileptic power supply within the institution mare the activities geared towards improving electronic governance in public sector.

However, in Imo state polytechnic, just like every other tertiary Institution; infrastructure plays significant roles in the actualization of greater human capital development and organizational productivity. It is worthy of note that infrastructure determines the nature of education, trainings and development thereby enhancing socio-economic, political and administrative development of the organization. Therefore, Kenny and Yang (2022) argue further that infrastructure needs human capital to generate revenues. Its investments rely on adequate stocks of human capital to create demand and revenue. This is because human capital is regarded as the force that propels economic prosperity. This informs World Bank to conclude in their survey that human capital measure accounted for about 64 percent of total global wealth, (human capital and physical plus natural resources). This made Johnsen, (1966, p.100) defines infrastructure further as the sum of material, institutional and personal facilities and data which are available to the economic agents and which contribute to realizing the equalization of the remuneration of comparable inputs in the case of a suitable allocation of resources which the complete integration and maximum level of economic activities. These considered the objectives of infrastructure as the formation of the concept for the term infrastructure, the incorporation of theoretical approaches, (for example, the theory of public goods and the description of the reality of infrastructure provision.

However, being the institution established in 1978 as the college of agriculture, Imo state polytechnic was upgraded to polytechnic status in 2007 by the then government of His

Excellency, Chief Ikedi Ohakim. The institution was upgraded to multi-campus in 2013, with the campuses across the three senatorial districts of Ehime Mbano representing Okigwe zone, Orlu Campus representing Orlu/Imo West Senatorial district and Ikeduru Campus representing Owerri senatorial district including the main campus in Omuma formerly at Umuagwo. Before the multi campus system, the institution had faced challenges of infrastructure with epileptic power supply, lack/poor recreational facilities, poor/insufficient school, hostels, absent of markets, insecurity and absent of other infrastructural facilities. The multi campus system compounded the challenges as a result of its location to rural areas such as Ehime Mbano, Amaimo in Ikeduru and local community in Orlu local government area. The challenges of providing quality roads, poor power supply, water, poor structures and high cost of transportation and poor network services becomes unimaginable to achieve quality human capital development and organizational productive performance.

Based on the above analyses, that the researchers asked the related questions; what are the constraints of infrastructure to human capital development in Imo state polytechnic, Omuma? What is the importance of infrastructural to human capital development in Imo state polytechnic, Omuma? What are the need of infrastructure to security of lives and properties in Imo state polytechnic, Omuma? How does infrastructure contributes to the human capital problems of Imo state polytechnic, Omuma? What are the problems of infrastructure to productive performance in Imo state polytechnic, Omuma? Based on these questions, that the researchers adopted descriptive research approach for the study in order to unravel the problems of the institution and cushion the negative effect to engender human capital development which is a precondition to improve organizational productivity and capacity building. So, when infrastructure is bottleneck, it rapidly rises up the list of critical issues for business surveys of manufacturing enterprises worldwide suggesting that electricity is the single biggest obstacle to business (Kenny and Yang, 2022). Epileptic power supply is responsible for both administrative and productive performances in the organization. It is based on the above issues that this study was conducted to address the infrastructure challenges in the polytechnics especially, Imo State Polytechnic, Omuma. So, the research questions include the followings:

Research Questions

1. What are the impacts of infrastructures on human capital development and organizational productivity in Imo state polytechnic, Omuma?
2. What are the remedies?

Objectives of the Study

1. To examine the impacts of infrastructures on human capital development in Imo state polytechnic, Omuma
2. To articulate the remedies of poor infrastructures on human capital development in Imo state polytechnic, Omuma

2. LITERATURE REVIEW

Infrastructure: Frischmann (2005) states that certain important resources should be governed not by a property regime but a regime that incorporates open and nondiscriminatory access. Infrastructures are essential social amenities that necessitate socio-economic development in our organizations. It is an essential aspect of social services that enhances human capital development and organizational growth and development. Infrastructure includes the followings: Road network, Transport services, electricity, provision of water supply, Stocks, building and equipments. Infrastructures are amenities that help to facilitate socio-economic, administration and political development. According to Kenny and Yang (2022), Infrastructure is a central component of modern economies and need human capital to generate revenues that help organizational development. Its investment relies on adequate stocks of human capitals to create demand and revenues over the long term due to the fact that human capital is the underlying force behind economic prosperity compared to 31 percent for produced capital (infrastructure, building and equipments). In the technological aspect, infrastructure is the gadgets use to facilitate information and communication service between and among organizations and institutions that share similar interests, have business association and share organizational philosophies in the pursuit of common interest. Technology is a hardware mechanisms, equipments, devices and electronic gadgets use to spur the electricity and internet to access electronic government in public service delivery. It is a hardware electronic transformed with internet and electric connection for online service delivery in the organizations. Maittamo, (2008) posits that government is working on broadband connection to schools refurbishment of computers then delivered to schools and training of teachers and administrators on e-learning.

Based on the above exposition, it is observed by Kenny and Yaung study that 31 percent of capital infrastructure obtained in productivity. Going by the study, it is clear that infrastructures have great impact in determining the extent to which human capital achieved organizational productivity. Is that related issue in Imo state polytechnic? The question can

be asked;" what are the impacts of infrastructures on human capital development in the productivity of Imo state polytechnic? How do the skills, knowledge, creativity, competency and experiences gathered through the series of trainings and development of staff engendered organizational productivity and capacity building under unlimited government influence in Imo state polytechnic, Omuma? It is upon this development that this study was conducted and also no initial study known by the researchers on this topic about Imo State Polytechnic was conducted ab initio. This left the institution with many unsolved problems to examine, and evaluate the degree to which infrastructures have impacted to human capital development and organizational productivity in the institution. The empirical studies questions poor infrastructure and environmental instability purported by government negligence, insecurity and poor funding. The poor motivation, short change of staff in salaries payment and nonpayment of pension and gratuities to pensioners. The financial dependency where every payment of the institution activities and services come directly from government is an ideal situation. These affect socio-economic and administrative systems and capacity building of the organization. Ogohi, (2019, p. 95) opined that the productivity of workers is falling resulting to low performance of the organization. This is due to lack of funds needed to realize projects in the organization. Therefore, it is important to rationally investigate what significant infrastructures have to human capital development and organizational productivity under high unemployment rate among the graduates. However, it involves: **Info-structures**: The United Nation Public Administration network acknowledged the requirement of infrastructure towards achieving effective e-governance development. The fundamental implementation of this electronic governance system is information related infrastructure which is known as "info-structure". There are four info-structures necessary for e-governance implementation and development in our organizations. They are:

i. Electronic Records (e-records) ii. Authentication and Digital signature iii. Electronic payment (e-payment) and iv. Portal

However, the basic Infrastructures include the followings: i. Access to electricity, ii. High speed internet connectivity with huge digital divides. iii. E-records: This, include infra and info-structure for e-government. Government information infrastructure according to United Nations Public Administration network for e-records aligns with a government existing communications infrastructure with the implementation of the government wide data network (GDN) establishment of government information infrastructure (GU). This leads to the plans on how national information infrastructure can be built to enhance e-governance. Therefore,

stake holders, institution and government require consultative effort and committement to improve the knowledge of the people, infrastructure and capacity building.

Infrastructures include; road network, electrification, pipe borne water, bridges, schools, libraries, houses, buildings and equipments. It is the availability of standard markets, hospitals that help to improve socio-economic and political development of the state.

2.2.THEORETICAL FRAMEWORK

The two theories used for the study are, "A demand side economic theory of infrastructure and commons management propounded by Brett, M. Frischmann in (2005) and human capital theory propounded by Garry Stanley Becker in (1964). However, a demand side economic theory according to Brett, Frischmann provides a better means for understanding and analyzing societal demand for infrastructure resources. The theory showcases the important citizens attached and obtain access to infrastructure resources, be it traditional and modern infrastructure. The individuals desires to value and the societal aggregated desires to value (utility). The values people created on the demand for infrastructure enable one analyze and compare provisional mechanisms (supply system such as markets, Government, community, family etc) and institution aimed at optimizing these mechanisms(laws, norms, subsidies, taxes etc.). This is because the critical aspects of the comparative analysis concern the relative effectiveness of those mechanisms to generate, communicate, process, and respond to demand signals. In the study, Frischmann described infrastructure resources as a public goods, network goods and natural monopolies etc stating that markets will fail one way or the other to efficiently provide the society with infrastructure, and government is obliged to pay significant role in the provision of the infrastructure for government intervention and proceed to analyze the regulatory options by supplying resources directly or contracting directly providers on behalf of the citizens. However, Brett developed a general definition of infrastructure which comprises of three demand side criteria common to traditional and nontraditional infrastructure. The section A of the theory explores the key economic characteristics necessitate the demand side analysis of infrastructure. The section B develops a general definition of infrastructure comprised of three demand side criteria common to traditional and nontraditional infrastructure resources while section C, develops an infrastructure typology to distinguish between commercial, public and social infrastructure based on the nature of the productive activities facilitated by an infrastructure resources and the potential for these activities to generate positive externalities. Section D compares infrastructure and network effects. Both types of economic effects have the potential to

generate demand side externalities but the externalities attributable to network effects are more likely to be internalized by network providers than the externalities that are attributable to infrastructure effects. Section E evaluates the economic arguments for managing different types of infrastructure resources in an openly accessible manner. Section F addresses how price discrimination affects the demand side concerns raised.

However, A demand side theory of infrastructure begins by reviewing traditional economic concepts used in welfare analysis of infrastructure goods and deepening the understanding of societal demand for infrastructure resources. Brett Frischmann opined that demand side theory of infrastructure explain human desire to realize value (utility) and societal aggregated desires on infrastructure resources and also how human beings created and realized the desires for the acquisition of infrastructure to better its socio-economic and political development, stability and the capacity building. The understanding of the analysis and comparative nature of the provisional mechanisms (supply system such as markets, government, community, family) and institutions optimizing mechanisms (laws, norms, subsidies, taxes) and how effective the mechanisms to generate, communicate, process and respond to demand signals and analyse different infrastructure resources as public goods, network goods and natural monopolies and combination.

Therefore, the impact of infrastructure in both in individuals and in societal stability and development complement human capital development in realizing organizational/institutional stability, growth and development and also enhance capacity building. However, Frischmann in his argument stated that certain important resources should be governed not by a property regime but a regime that incorporates open and nondiscriminatory access.

Human Capital theory was propounded by Gary Stanley Becker in (1964). This theory was used as the second theoretical framework of analysis in this study. Human Capital theory is fundamentally rooted from macro-economic development theory captured in Becker's classic book captioned "Human Capital: A Theoretical and Empirical Analysis of Education". The theory assumes that the composition of the employee in form of skills, knowledge, and abilities is the key to organizational performance. It went on to state that investing in skills and innate values promote organizational productivity. Human capital is also a concept that recognizes labour capital and posits that human beings can increase their productive capacity through greater education and skills training. Therefore, human capital development however, is the employee knowledge, skills, good health and education that enhances

personal and organizational productivity. Organizations invest in its citizens through expenditures on education, training, research and health that enhance their productive capacity. Therefore, human capital is the added value that people bring in an organization.

Strengths of the theories in Education and Policy Making

1. The theories are used in education research and policy making. They help the policy makers and researchers to evaluate the relationship between the educations and training as inputs and economic and social benefits as outputs. Since the assumption stated that increase amount of schooling will bring growth and higher individual wages, Gross domestic product and increase in citizens participation, crime reduction and adequate healthcare services. Therefore, these enable the policy makers evaluate relatively the efficiency of public programs that encourage education
2. They provide useful avenue for understanding how policy can be developed to promote individuals investment in their education. They review that embarking in further education (schooling) involves both cost that is spending (sacrificing at present and benefiting through higher wages in future) within individual level. Therefore, adopting infrastructure theory of Brett Frischmann and Garry Stanley Becker human capital theory in this study will help the policy makers develop rational policies geared towards providing avenues for students' loan and enrolment programmes to change individual costs and benefits calculation by reducing the short costs in order to encourage the likelihood of pursuing education increasingly and improve the knowledge geared towards the provision of infrastructure resources in the society.
3. The economic theory of Infrastructural can be used to address deficiency occasioned by lack of infrastructure in organization, While human capital theory also can be used to address individual social investments in education, such as the quality knowledge/investment in education that are productive and the best time for education and policy development aim at reducing the costs of education.
4. The theories are meant to help increase the creative and innovative knowledge and how to utilize the knowledge to further productivity, investment, growth and development of the society.

Therefore, adopting infrastructure theory and human capital theory as well as its associated principles in Imo State Polytechnic, Omuma, will enhance infrastructural development, knowledge; skills and education which provide sustainability and development thereby

providing opportunities for future generation of staff and students. It will go on to provide good opportunities for education and trainings among individual staff and the institution in general, thereby promoting economic growth and productivity. This is because; long term economic growth depends to greater extent on the improvement on infrastructure and human capital. A good education, creativity or innovative workforce fosters labour productivity and economic growth and development. Furthermore, building upon the human capital theory and a demand side economic theory of infrastructure enable knowledge and trainings that can lead to provision of quality employment and promotion in the institution. This is because the acquisition of high skilled and creative workforce will increase opportunities for higher promotions in the Polytechnic. Finally, adopting the principles associated with these theories will enable the beneficiaries of the abilities to utilize their skills and knowledge in order to ensure better development of Polytechnic community.

2.3.EMPIRICAL REVIEW

The impacts of infrastructure on human capital development and organizational productivity determine the positive/negative effects to productivity in any organization. However, infrastructures are amenities that help to facilitate socio-economic, administration and political development. It includes; electricity, provision of water supply, standard road network, standard class rooms, library, Hostels, Provision of Information and Communication Technologies and other ICT networks and Broad bands to facilitates digital services.

Kenny and Yaung (2022), In their studies “Should Infrastructure Investors Care About Human Capital” defined infrastructure as a central component of modern economies and need human capital to generate revenues that help organizational development. Its investment relies on adequate stocks of human capitals to create demand and revenues over the long term due to the fact that human capital is the underlying force behind economic prosperity and infrastructure capital (infrastructure, building and equipments). Therefore, the role of human capital as compared to physical capital as the fundamental underpinning for progress can be illustrated by occasions on which the stock of physical capital including infrastructure was considered diminished by war. Based on this definition and analysis of requirement of infrastructure resources, Imo state polytechnic need also need human capital to generate revenue for the institution and even beyond. The available ones still requires more practical training and development including discipline and moral reorientation to perform creditably for better. However, Hasler et al cited in Kenny and Yang (2022) stated that when energy

prices tripled in the 1970s, the energy input share in US production tripled as well. The quality of energy inputs remained largely unchanged. At least in the short term, a given level of transport and electricity services is simply essential to sustaining output. It is similar worldwide and over the long term. In the bottleneck of infrastructure, it is worthy of note that electricity is the single biggest obstacle to business management. This report came from reasonable numbers of firms in South Africa that about 54% of firms in South Africa, 45% in Pakistani, 28% in Bangladeshi, 27% in Nigeria are affected by poor electrification and this affects the employment by constraining the launch of new busses, reducing the output and the productivity of existing firms and negatively affecting the trade and export competiveness of firms. Electricity becomes the major factors that affect productivity. However, similar case is observed in the tertiary education especially Imo state polytechnic where poor electrification contributed greatly in challenges in education and learning. It mares the operation of ICTs, reduces earnings and productivity in Imo state polytechnic. The study has; however, contend that many tertiary institutions especially in the polytechnic subsector seem to have demonstrated poor commitment to the development of the human capital which should be inherent in their human resources. There is no doubt, that this has the capability of dragging the productivity of such institutions to the mud. World Bank (2018) stated that human capital measure counted for about 64% of total global wealth (human and physical capital plus natural resources). However, Kenny and Yaung, continue that it's unsurprising that a range of studies suggest strong positive macroeconomic returns to infrastructure investments. One broad based studies literature review of statistical studies which suggested that 63% of the analyses surveyed found a positive and the significant link between infrastructures assets directly increased GDP per capita by 0.7 to 1percent. The relationship between infrastructures and human capital development have been seen in increase electric power consumption, when the capital stock and private capital stocks are higher in countries with high human capital as measured by average years of education, electricity consumption and the physical stocks and when strongly correlated with income levels. There are relationship between electricity consumption and human capital controlling for private investment in electricity, income, population and the measure of the regulation. The regression is based on 4 years times periods between 1998-2018 (Kenny and Yaung, 2020). The analysis states that a more highly educated population is associated with greater electricity consumption. An extra year of average education in the adult population at a given income is associated with an increase in electricity consumption opinion is that there is positive relationship between health and

electricity consumption. This is quite different in Imo state polytechnic where there is clear relationship between electricity, ICTs and productivity.

Kurcharcikova in (211) in Alika & Aibieyi (2014, p, 58) studied human Capital-Definition and Approaches: In his analysis opined that '' the new theories of economic growth characterized the human capital as the sum of the individual congenital and acquired skills, knowledge and experiences of individuals. However, he argues that often time writers omit 'commitment' in their list of the characteristics of human capital such as knowledge, skills, experience, etc One may possess, but without the spirit of 'commitment' to perform, the individual may still not perform as expected unless there is the 'commitment' to perform credibly the given task or job. In the forgoing analysis, Alika & Aibieyi, (2014, p. 58) opined that an organization can be said to be 'sick' if it is not the setup per se but a reference to the employees of the organization for lack of performance. That's the picture where the top employees set their standard of administrative operation instead of public service operational standard in the system. For instance in promotion where public service rule considers the year approved by employees who embarked on training/education graduated for upgrading/promotion in the institution, internal arrangement by committee adjusted the policy on their own considering the year an employee's evidence of the training/education is registered in their internal administrative arrangement, setting back some hardworking staff whose effort need growth to be struggle in the system. However, Bitsch, et al analyzed that the investment funds supported by the European Bank for reconstruction and development suggests that infrastructures deals outperform non infrastructure deals despite low default risk.

Methodology and Research Design

The research design used in this study includes survey research design. The major survey instrument for this study is a structured questionnaire and interview. The methods were designed to reflect the research questions used in the study. The population is made up of entire staff of the polytechnic which includes the academic and non-academic staff of the polytechnic is 1353.Sampling method was adopted to adequately manipulate the enormous population. In determining the sample size of the study, the researcher drew the population from both academic and non-academic staff of the Institution. The population of 1350 was gathered and the sample size was calculated with Taro Yamane formula as follows:

n = Sample size 1 = Constant

N = population E = coefficient error by 5%

$$n = \frac{N}{1+N\ x\ (e)^2} n = \frac{1353}{1+1353\ (5)^2} n = \frac{1353}{1+1353\ (0.05)^2} n = \frac{1353}{1+1353 x\ 0.0025} n = \frac{1353}{1+1353 x\ 0.0025} n =$$

$$\frac{1353}{1+3.375} n = \frac{1353}{4.375} \quad n = 318 n = 318$$

The researchers used simple random probability sampling technique in the research study. This technique gives equal opportunity for all respondents to participate in the research study. The equality of chance given to every member of the population distinguished the simple random sampling technique from others.

The researchers used two methods in data collection: The primary data collection methods and the secondary data collection methods. In the primary data collection, the researchers administered questionnaires to the respondents to gather information. The questionnaires were accompanied by letter addressing the respondents to assist by responding to questionnaires administered. The letter explained the purpose of the study and request for information to accomplish the study. The respondents were assured the anonymity and confidentiality of their responses. The questionnaires were designed to achieve a high rate of response from the respondents to the survey. It was divided into two. The section A handles the background information such as sex, age bracket, qualification, designation of the respondents and the marital statuses of the respondents, while section B handles questionnaire option. The researchers carried out interviews to staff members of the polytechnic who are also called the respondents and observations were made. The secondary data collection was used: In that case, the researchers gathered information through the existing literature such as; journals, extraction from textbooks and internet explorer materials respectively.

The researchers adopted face/content validity and construct validity to measure the extent to which the data for the study are reliable. In the face validity, well-structured questionnaire instrument were carried out by the researchers. The researchers also ensured that the items in the questionnaire were in conformity with the items in the objectives of the study, research questions and research hypothesis which are the representativeness of sampling adequacy of the content {the substance, the topic, the issue}.The researchers also constructed instrument of responds for the respondents in a four (4) likert scale. This questionnaire was assumed to have covered what it appears to test participants.

The test-retest methods were used to confirm the reliability of the study. It could be observed in the consistency and dependability of the result given by the respondents while responding

to the questionnaires and hypothetical studies. The result of the study is adjudged to be consistency, dependable and credible when questionnaires administered and the responses given by the respondents agreed majorly with and disagreed with the research questionnaires, objectives and hypotheses of the study. Here, the instrument has produced consistency the same result over time. In the first test, the researcher distributed hundred and fifty (150) questionnaires to the public (Imo state polytechnic staff) and in return, hundred and forty (140) were recovered and recorded. While analyzing the questionnaires, it is observed that the respondents' maintained consistent views over time. Retest method, two months later, hundred and fifty nine (168) questionnaires were distributed to the public (Imo state polytechnic staff) and in return, hundred and forty five (145) were recovered and recorded. While analyzing the questionnaires recovered, it is observed that the results are correlated with the earlier test results, which implies that there is high coefficient of correlations between the two results hence the used of SPSS was made paramount in calculation of mean of the scores, standard deviation and Pearson correlation coefficient which give room to conclusion that the results of the tests are reliable. The data collected were analyzed using the descriptive approach. The study used Arithmetic mean, standard deviation, Pearson correlation coefficient and statistical tables to analyze the questionnaire. Pearson correlation was used to test hypotheses. The data were obtained from questionnaire administered to the respondents.

4. RESULT AND DISCUSION OF FINDINGS

The data presentation, analysis and interpretation are done with the use of simple percentage, mean and standard deviation and Pearson correlation regression analysis. The study starts with the analysis of the sex of the respondents, designation, and marital status, age bracket of the respondents and educational qualification of the respondents. Others are the data presentation, analysis and interpretation with hypothetical analysis of the study. Bellows are the tables:

Table 4.1 Demographic Representation of the Respondents

Parameter	Category	Frequency	Percentage
Sex	Male	140	49.1
	Female	145	50.9
	Total	**285**	**100**

Age	18-25	3	1.1
	26-35	107	37.5
	36-45	142	49.8
	46-55	31	10.9
	56-65	2	0.7
	Total	285	100
Educational Qualifications	PhD	10	3.5
	M.Sc	123	43.2
	B.Sc/B.ED	96	33.7
	HND	38	13.36
	Others	18	6.3
	Total	285	100
Designation	Academic Staff	136	47.7
	Non-Academic staff	149	52.3
	Total	285	100
Marital Status	Single	15	5.3
	Married	256	89.8
	Separated	12	4.2
	Widowed	2	0.7
	Total	**285**	**100**

Source: field study, 2024

Base on questionnaire administered, out of 285 respondents; 140 respondents representing (49.1%) are male while 145 respondents representing (50.9%) are female staff respectively.

Considering the age distribution of the respondents above, 285(Two hundred and eight five respondents who responded to the questionnaires options articulated above, the respondents between 18years and 25years old with (1.1%) rate were 3 persons. The respondents between 26 and 35years old were 107 persons with percentages of (37.5%), while the respondents between 36years old to 45years with percentages of (49.8%) were 142 persons making it the highest number of respondents among the groups. The age between 46 to 60years with percentages of (10.9%) were 31 persons while the range of age between 61 and 70years with percentage of (0.7%) is 2persons making it the lowest numbers of respondents within the age bracket of the respondents

It is worthy that out of 285 respondents who responded to the questionnaires distributed. Ten (10) respondents were PhD holders with (3.5%) frequency percentage rate. While 123 respondents representing (43.2%) were M.Sc/MA/M.Ed holders. In the same vein, 96 respondents representing (33.7%) of the frequency rate were B.Sc/BA/B.Ed holders degree. Meanwhile 38 respondents representing (13.3%) percentage rate were the holders of HND (Higher National Diploma) while is respondents representing (6.3%) were the holders of WAEC, NECO, ND and NCE etc.

Note, that out of 285 respondents in the research study, 136 respondents representing 47.7% were academic staff of the Polytechnic, while 149 respondents representing (52.3%) were non-academic staff of the Polytechnic respectively

It is very clear that out of 285 respondents who responded on the research studies, 15 respondents representing (5.3%) respondents were single person (staff), while 256 respondents representing (89.8%) percentages rate of the population were married persons (staff). Meanwhile 12 respondents representing (4.2%) percentage rate were separated in their marriage, while 2 persons (respondents) representing (0.7%) were widowed respectively

Research Question 2: What are the impacts of infrastructures on human capital development and organizational productivity in Imo State polytechnic, Omuma?

Table 4.2 Relationship between the impacts of infrastructures to human capital development and organizational productivity in Imo State polytechnic, Omuma

S/N 1	The impacts of infrastructures to human capital development and organizational productivity in Imo State polytechnic, Omuma are as follows:	Strongly Agreed	Agree	Strongly Disagree	Disagree
1	Inadequate knowledge and experience necessary for communication and information dissemination, hiring and retention of the staff in the organization	190(67%)	81(28.4%)	5(1.8%)	9(3.2%)
2	Absence of infrastructures affect creativity and innovative skills in the organization	118(41.4%)	154(54%)	7(2.5%)	6(2.1%)

3	It affects effective information and communication in the organization.	185 (65%)	88(31%)	2(0.7%)	10(3.5%)
4	Poor/absence of infrastructures affects quality productive output and investment attitudes in both public (Institution) and private sectors of the economy.	71(25%)	99(35%)	20(7%)	95(33%)
5	Inadequate trainings and development of human resource management in the organization	68(24%)	151(53%)	15(5%)	51(18%)
6	Inadequate skill acquisitions, creativity and innovation in the organization	59 (21%)	103(36%)	19(7%)	104(36%)
7	Unemployment and appointment of ill experienced personnel from one subsector to another in the organization	76(27%)	149(52%)	14(5%)	46(16%)
8	Inadequate incentives for workers motivation in the organization	79 (28%)	102(36%)	43(15%)	61(21%)

Source: field study, 20224

In research question one option one articulated that absence of infrastructures influence human capital development through the provision of inadequate knowledge and experience necessary for communication and information dissemination, hiring and retention of the staff in the organization/Imo state polytechnic. In the research studies, 190 respondents represented {67%} strongly agreed that lack of infrastructures affects human capital development by the knowledge and experience necessary for communication and information dissemination, hiring and retention of the staff in Imo state polytechnic. Then 81 respondents represented {28.4%} agreed on the notion above, while 5{1.8%} of respondents and 9{3.2%} strongly disagreed and disagreed respectively. Meanwhile 271{95.4%} respondents representing (95.4%) sounded positive; while 14(5%) respondents responded negative to that effect

In research question one option two articulated that the absence of infrastructures affect creativity and innovative skills in the organization. The combination of the infrastructures with creativity and innovation skills enhances result oriented attitudes among the staff

members of the organization and this influences output quality in Imo state polytechnic. Therefore, 118 respondents representing (41.4%) strongly agree to the effect. 154 respondents representing (54%) agree, while 7 respondents representing (2.5%) and 6 respondents representing (2.1%) strongly disagreed and disagreed respectively. Meanwhile 272 represented with {95.4%} sounded positive that lack of adequate infrastructures affect creativity and innovative skills thereby ensures result oriented attitudes among the staff members of the organization in Imo state polytechnic while 13 respondents represented by {4.6%} sounded negative to the effect.

In research question one option three assert that inadequate infrastructures affect effective information and communication in the organization. Based on this, 185 respondents representing {65%} strongly agreed that lack of infrastructures affect information and communication in the organization. 88 respondents representing (31%) agree on the notion above; while 2 respondents representing (0.7%) strongly disagreed and 10 representing (3.5%) disagreed respectively. Meanwhile 273 respondents representing (96%) sounded positive that inadequate infrastructures affect the provision of information and communication in the organization such as Imo state polytechnic.

In research question one option four, 71 respondents representing (25%) strongly agree that poor infrastructures to human capital development affect quality productive output and investment attitudes in both public (Imo state polytechnic) and private sectors of the economy. 99 respondents representing (35%) agreed on the notion above. At this juncture, 20 respondents representing (7%) and 95 respondents representing (33%) strongly disagreed and disagreed respectively. Meanwhile 170 respondents represented {60%} sounded positive that poor infrastructures affect human capital development and quality productive output and investment attitudes in both public (Imo state polytechnic) and private sectors of the economy.

In research question one option five, 68 respondents representing ((24%) agreed that Inadequate trainings and development of human resource management in the organization affect human capital development in Imo state polytechnic. 151 respondents representing (53%) strongly agreed on it while 15 representing (5%) and 51 representing (18%) disagree and strongly disagree on the notion respectively. Meanwhile, 219 (77%) said that Inadequate trainings and development of human resource management affect human capital development

and organizational productivity in Imo state polytechnic, Omuma while 66 (23%)\ disagreed on the notion.

In research question one option six, 59 respondents representing (21%) agreed that Inadequate infrastructures affect education, skill acquisitions, creativity and innovation in the organization thereby hamper human capital development. 103 respondents representing (36%) strongly agreed on it while 19 respondents representing 7% and 104 representing 36% disagree and strongly disagree on the notion respectively. Meanwhile, 162(57%) said that poor infrastructures lead to inadequate skill acquisitions, creativity and innovation in the organization while 123(43%)\ disagreed that inadequate infrastructures affect human capital development and organizational productivity in Imo state polytechnic Omuma.

In research question one option seven, 76 respondents representing (26%) agreed that lack of infrastructures may lead to unemployment and appointment of ill experienced personnel from one subsector to another in the organization thereby affect human capital development in Imo state polytechnic. 149 representing52% strongly agreed while 14 representing 5% and46 respondents representing (16%) disagree and strongly disagree on the notion respectively. Meanwhile, 225(79%) said that poor infrastructures affect employment and appointment of personnel from one subsector to another in the organization thereby undermine human capital development and organizational productivity in Imo state polytechnic, Omuma while 60(21%) disagreed to the effect.

In research question one option eight, 79 respondents representing (28%) agreed that poor infrastructures lead to inadequate incentives for workers motivation in the organization thereby hamper human capital development in Imo state polytechnic.102 respondents representing (36%) strongly agreed while 43 representing 15% and 61 representing 21% disagree and strongly disagree on the notion respectively. Meanwhile, 181(64%) said that poor/absence of infrastructures lead to poor incentive to workers motivation in the organization of human capital development and organizational productivity in Imo state polytechnic, Omuma while 104(36%) disagreed with the notion that poor infrastructures demotivate workers thereby affect human capital development and organizational productivity in Imo state polytechnic Omuma.

ANALYSIS

The research looked forward on 2007-2025 to determine the positive impacts of infrastructures to human capital development as follows:

1. Economic growth development, enhances training; education and skills acquisition, it helps in risk management, enhances creativity and Innovation, it facilitates productivity and service delivery, organization effectiveness and efficiency, employment and empowerment creation and sustainability, attainment of goals and the objectives of the organization

The impacts of human capital development to infrastructures are as follows:

2. Manufacturing and creation of machines, equipments and buildings, sustaining the productivity in the organization, risk management and Reduction, goal realization and sustainability, employment and Productivity, provision of electrification, information and communication technology etc to ensures effective service delivery,

RESULT AND SUMMARY OF FINDINGS

Summary of Findings

The study observed that poor infrastructure lead to inadequate knowledge and experience necessary for communication and information dissemination, hiring and retention of the staff in the organization. Based on this, 271{95.4%} respondents representing (95.4%) sounded positive to the above; while 14(5%) respondents responded negative to that effect.

It is worthy of note that absence of infrastructures affects creativity and innovative skills in the organization thereby hamper human capital development and organizational productivity. However, based on the above, 272 represented with {95.4%} sounded positive that lack of adequate infrastructures affect creativity and innovative skills thereby affect result oriented attitudes among the staff members of the organization in Imo state polytechnic while 13 respondents represented by {4.6%} sounded negative to the effect.

Poor Infrastructures affects effective information and communication in the organization thereby undermine human capital development. However, 273 respondents representing (96%) sounded positive that inadequate infrastructures affect the provision of information and communication in the organization/Imo state polytechnic thereby undermine the human capital development and organizational productivity in Imo State Polytechnic

Poor/absence of infrastructures affects quality productive output and investment attitudes in both public (Institution) and private sectors of the economy. 170 respondents represented {60%} sounded positive that poor infrastructures affect human capital development and quality productive output and investment attitudes in both public (Imo state polytechnic) and private sectors of the economy.

The study observed that poor infrastructure give room to inadequate trainings and development of human resource management in the organization: 219 (77%) said that absence of infrastructures lead to inadequate trainings and development of human resource management thereby affect human capital development and organizational productivity in Imo state polytechnic, Omuma while 66 (23%)\ disagreed on the notion.

The study observed that inadequate skill acquisitions, creativity and innovation in the organization are the product of poor infrastructures in Imo state polytechnic. However, 162(57%) sounded positive that poor infrastructures lead to inadequate skill acquisitions, creativity and innovation in the organization while 123(43%)\ disagreed that inadequate infrastructures affect human capital development and organizational productivity in Imo state polytechnic Omuma.

The study observed that unemployment and appointment of ill experienced personnel from one subsector to another in the organization is caused by poor infrastructure. Based on the above, 225(79%) agreed that poor infrastructures affect employment and appointment of personnel from one subsector to another in the organization thereby undermine human capital development and organizational productivity in Imo state polytechnic, Omuma while 60(21%) disagreed to the effect.

The study observed that poor infrastructures give room to inadequate incentives for workers motivation in the organization. However, 181(64%) agreed that poor/absence of infrastructures lead to poor incentive to workers motivation in the organization thereby undermine human capital development and organizational productivity in Imo state polytechnic, Omuma while 104(36%) disagreed with the notion that poor infrastructures demotivate workers thereby affect human capital development and organizational productivity in Imo state polytechnic Omuma.

Recommendations

Based on the summary of findings; the following recommendations were made:

1. Both government of Imo state and private sector should partner to provide adequate infrastructural facilities such as; uninterrupted power supply/electricity, ensure standard roads network, quality classroom buildings and library, adequate water supply, good markets, schools, ICT equipments and Hostels where necessaries that will provide adequate and contribute towards human capital development
2. Provision of autonomy/semi-autonomy to the Institution to distant it from undue interference by sub-national actors/states.
3. The government of Imo state should ensure adequate and regular motivation and remuneration of staff (human capital) by ensures regular payments of salaries, wages, bonuses and other remuneration packages and also ensures routine training, skills acquisition, knowledge building capacity and development. This will improve morale capacity to work hard, committed spirit of service and effective and efficient service delivery among the staff of the institution and organizations in general.
4. Provision of More Funds: Government should help the Management of Imo state polytechnic to provide adequate health care services by providing more health equipments, materials and well trained personnel that will facilitate the effective and efficient health care services and capacity building in the organization (Imo state polytechnic).
5. Government of Imo state and private sectors should ensure environmental stability capable of fostering mental, social, emotional, intellectual and spiritual development and also reduce insecurity and related cases within the institution in particular and other tertiary institutions in Imo state.
6. More investment on Infrastructure to enable human capital trainings and capacity building in the institution.

Conclusion

It is worthy to note that infrastructure and human capital development were adjudged as the panacea for organizational productive performance particularly in Imo State Polytechnic. This is as a result of the increasing skills, knowledge, system thinking, creativity and innovative skills, leadership and management abilities, strategic thinking, decision making and problems solving skills, its research ability and diligence effort towards human and material development, problems solving and capacity building. The study focuses on

infrastructure and human capital development in Imo state polytechnic. Base on empirical study (evidence), the study concluded that infrastructures and human capital development have socio-economic and political effects; such as improves knowledge and skills, education and health care services, leadership and management of the organization, information and communication technology, infrastructural development and performance evaluation. Others include; the tendency towards increasing gross domestic products and national income, unemployment and joblessness, increase economic growth, organizational productive performance, professionalization and specialization of the personnel at work place. It also improves on the job and off the job training and development. It improves behavioural and human relation trainings and managerial competency. It however reduce poverty and increase self-employment opportunity, industrial performance and revolution, monetization of productive equipment, infrastructural development, effective administrative planning, and knowledge of maintaining machines and equipment, effective utilization of materials and non-materials resources on organization (Imo state polytechnic) . It provides motivation to personnel and enhances capacity in the organization.

However, the choice of human capital development and organizational productivity in Imo state polytechnic is based on the critical impact of this variable to socio-economic development and the overall determination of input quantity and output quality of the polytechnic. Also the choice of 2007- 2025 was born out of the need of establishing the impacts of infrastructures on human capital development in determining organizational productivity in Imo state polytechnic. The choice of 2007 was when the polytechnic was upgraded from monotechnic to polytechnic. These added more strength and power to the newly upgraded institution. The studies acknowledge that human capital development enhances organizational productivity and efficient performance of the employees in the Institution. Education and training are the panacea for skills acquisition; creativity, innovation, knowledge building and experience in Imo state polytechnic but due to poor/absence of infrastructures the reverse is now the case.

The study has academic contributions, practical contributions and theoretical contributions. The academic contributions opined that this study is essential for academic development because of its tendency of adding more knowledge and creativity into existing literature. It has capacity to close gap incurred by previous scholarly writing and production because of the creative approach to problems identification and solution provision. It can as well help to improve education, healthcare and knowledge building, creativity, skills acquisition and

outputs production. The knowledge of this will reduce deficiencies occasioned by lack of knowledge, skills, experiences and creativity including poor management and administrative governance.

Practical contributions: It addresses the problems that affect human capital of the organization confronting productivity of the institution in particular and Nigeria state in general. It shows the impacts of the human capital to employees and how it improves organizational productivity. It becomes paramount owing to its relevance to socio-economic and political development of both individuals and the organization in terms of building skills, knowledge, and creativity and making positive ways of utilizing it for efficient productive performance in both public and private. It will help the policy makers, leaders, managers and administrators of Imo state polytechnic, Omuma to be able to identify the human resources of the society, its utilization by exploring, exploiting, harnessing and galvanizing and also improve the organization productive performance.

The theoretical relevance of the study states that this study improves the existing literature on four areas: First, It identified the constraints of human capital development to organizational productivity in Imo state polytechnic, Omuma. Secondly, it articulates the effects of human capital development to organizational productivity. Thirdly, it examined the indices and parameter for measuring human capital performance of the organization/institution

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