

RESEARCH ARTICLE

EFFECT OF EMPLOYEE'S ICT SKILLS ON THE PERFORMANCE OF MANUFACTURING FIRMS IN SOUTHEAST NIGERIA

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Manuscript Info Abstract

Manuscript History Received: 18 December 2021 Final Accepted: 20 January 2022 Published: February 2022

*Key words: -*Employee, ICT Skills, Production, Information Management, Performance, Manufacturing Firms The manufacturing firms are among the relevant sectors that contribute positively to the growth and development of the Nation's economy. Perhaps, one of the major concerns of the manufacturing firms is to maximize performance and compete efficiently in the market. However, there is growing intimation on the poor performance of many manufacturing industries in the South-east region of Nigeria. Thus, the current study aimed to investigate the performance of manufacturing firms based on the ICT skills of the employees. One hundred and nine employees from different departments in various manufacturing firms responded to the research instrument designed to measure ICT competence and two performance domains. A simple linear regression was conducted on the data, and the result indicated a statistically significant association between employees' ICT skills and increased performance of the firms. The finding, implications, and conclusions are discussed.

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Introduction:-

Information communication technologies have become a universal trend in the business environment. The use of information and communications technology offers the potential for massive cost savings and productivity increases (Sorce & Issa, 2021). It is critical to effective knowledge management (Lecerf & Omrani, 2020). The advances in the ICT industry have significantly impacted business dynamics in the twentieth-first century (Shaukat & Zafarullah, 2009). The growing technological innovations have prompted a transformation in how business is done, and the trend is well observed in manufacturing industries. Accordingly, (Heine et al., 2003) have pointed out the relationship between technology and performance at the organizational level. Indeed, extensive literature exists that highlights the role of ICT in the world of work (Abdullahi et al., 2021; Adila & Ahmad, 2020; Anab, 2017; Catinat, 2013; Chege et al., 2020; Demestichas & Daskalakis, 2020; Ibrahim & Jebur, 2019; Jameel, 2017; Saleem et al., 2019; Solomon & van Klyton, 2020). There is a common conception that ICT remains the key to business development and sustainability across the globe. The European Commission (2010) reports that information technology is the primary critical driver for innovation in work. The report contends that the improvement in ICT and related advancements are enduring processes that combine business developments, structures, proficiencies, hardware, and software, including human resources, personal skills, knowledge, and other components of an organization. Digital innovation addresses business issues and creates platforms that lead to achieving sustainability.

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Over the years, the manufacturing sector has relied on technology for producing the many needs of humankind. Thus, ICT has allowed the manufacturing process to be less cumbersome and more automated. The advances in ICT have a

significant effect in delivering seamless innovation for implementing new-age solutions. The growing Internet of Things (IoT) trend has dramatically impacted the manufacturing sector. It describes how the internet is used to communicate, and artificial intelligence programs compile massive amounts of data for intelligent machine learning. These advancements have improved manufacturing systems and efficiencies and are well-received in the sector. However, the improvements in the technological models are still an emerging opportunity in developing countries. Nevertheless, it is difficult for less developed countries to isolate themselves from the changes occurring due to ICT developments in the global village (Gholami et al., 2004). Hence, the need to develop competency in ICT skills. The effect of information and communication technology (ICT) on firm performance has been the subject of many studies in the Nigerian context (Adeyeye et al., 2013; Akanbi & Adewoye, 2012; Ayatse, 2012; Binuyo & Brevis-Landsberg, 2014; Florence, 2018; Moruf et al., 2014; Nwosu et al., 2015; Olurinola et al., 2021; Osang & Longe, 2021).

Firm Performance denotes the probable abilities of a business to efficiently utilize the available resources to accomplish targets in line with the set plans of the company, keeping in mind their relevance to the users (Taouab & Issor, 2019). Organizational performance has been measured in many ways: profitability performance, growth performance, market value performance, customer satisfaction, employee satisfaction, environmental audit performance, corporate governance performance, and social performance (Selvam et al., 2016). Although, firm performance is a complex and multidimensional concept related to numerous organizational factors (Herciu & Serban, 2018). The present study is concerned with performance in production and information management. Production performance denotes the consistency, speed, and efficiency in production. On the other hand, information management entails sourcing, handling, and feedback. Thus, the study assumes that ICT skilled employees would significantly impact manufacturing firm's production and information management performance indicators.

Accordingly, numerous studies abound that support ICT integration and firm performance (see., Amoako et al., 2021; Forth & Mason, 2006; Gërguri-Rashiti et al., 2017; Houqe et al., 2019; Huang et al., 2021; Iacovone et al., 2017; Noor et al., 2017; Seth & Xiaofang, 2021; Siahaan & Tan, 2020; Sundram et al., 2020). The growing competition in the manufacturing industries has prompted firms in Nigeria to adapt to the dynamics of contemporary society through investment in ICT infrastructures. However, the major constraint in the ICT-performance relationship is the employee's ICT skills.

Due to the significant role of ICT in the firm's production process, most studies have dealt with ICT skills as a production factor (Benešová & Hušek, 2019; Hagsten & Sabadash, 2017). ICT skills relate to the knowledge and application of various computer programs, software, and other applications, including word processing, spreadsheets, databases, power points, search engines, and data manipulations. Competencies in the use of ICT infrastructures are the key to the demands of the consumers. For instance, the upsurge in technology has made many consumers want to stay in their homes and get what they want. Also, contemporary society is filled with consumers with many questions regarding their preferred products.

On the other hand, higher demand entails consistent production, hence, the need for complete automation of the production process. However, even though technology has amplified how the Nigerian manufacturing industries can be more productive and competitive, many industries still don't run as efficiently as others. An observation of the manufacturing industries in the Southeast region of Nigeria suggests that most of the manufacturing industries lag in performance attributable to poor ICT compliance. Practical ICT skills in the manufacturing sector would contribute significantly to the satisfaction of the consumers. Thus, there is a growing need to incorporate ICT skilled employees in manufacturing firms. For instance, employees who can perform their duty digitally are assumed to perform better than their counterparts with little or no ICT knowledge. Thus, the presence of ICT skilled employees in the manufacturing industry in Nigeria could serve as a vehicle to increase business performance.

Accordingly, Poutziouris et al. (2002) stated that the utilization of ICT in manufacturing ensures that products are seamlessly distributed, thus enhancing business performance across social and manufacturing boundaries. However, researchers have argued that effective utilization of ICT investment in business depends on integrated human potentials (Adeleke & Adeniyi, 2011). Concern in recent times is that investing in technological innovation with less technical know-how results in underperformance. Employee technical compliance is a key to the efficient utilization of many modernized tools. Thus, only ICT skilled employees could effectively handle digitalized tools (Nwosu et al., 2015), especially production, storage, distribution, and information management. Perhaps, attention is shifted to competence in information and communication technology for leveraging the success of the manufacturing business.

So, this study aimed to assess the performance of the manufacturing industries in South-East Nigeria based on the employee's ICT skills.

Hypothesis:

Manufacturing firms with high ICT skilled employees will have better performance outcomes than counterparts with low ICT qualified employees.

Method:-

The current research adopted a cross-sectional design. Employees, including males and females from different organizational departments, were randomly drawn from manufacturing firms in South-East Nigeria. Mostly, the participants were sampled from the machine handling and information designations. The participants were approached between August and October 2021 and were asked to participate in the study. They were briefed on the study's aim and were equally informed that participation is voluntary and that they could pullout at their convenience. Those who consented were given the study instrument to fill and return on the spot. In all, one hundred and eighteen (118) employees filled out the questionnaire. However, nine copies were discarded due to improper filling. Hence, the correctly filled questionnaires (109) were subjected to statistical analysis.

Measures:-

ICT skill was measured with ICT Skills Scale initially developed by (Wilkinson et al., 2010). The original 28items Linkert type scale comprising three sub-dimensions, namely "Information technologies," "Communication technologies," and "Mobile technologies," was modified to fit the current research context. Thus, the 15 items modified version measures employee's information and communication technology skills on a 5-point Likert type scale scored as "strongly disagree"(1), "disagree"(2), "undecided" (3), "agree" (4) and "strongly agree" (5). A high score suggests a higher ICT skill. The Cronbach's α reliability coefficient for the scale was 0.79 in the current study.

Firm performance was assessed using a structured questionnaire designed to ascertain the firm's production and information management performance. Thus, the instrument measures production consistency, speed, and efficiency. Also, it assesses information gathering, dissemination, and social responses. The questionnaire was completed by relevant individuals in the firms apart from the participants.

Result:-

The table below shows the result of a simple linear regression analysis conducted to test the relationship between employees' ICT skills and manufacturing firms 'performance. The result showed a significant regression equation F (1, 106), = 221.83, P<.05), with an R^2 of .412 indicating that the employee's ICT skills contributed 41.2% of the variation in the manufacturing firm's performance. Thus, the study's outcome confirms the hypothesis that manufacturing firms with a high number of ICT skilled employees would perform more elevated than their counterparts with a low number of ICT qualified employees.

Table 1:- Table showing regression analysis conducted to determine the effect of ICT skills on manufacturing firm's performance.

	В	Std. Error	β	t	Sig.
(Constant)	1.82	.089		20.52	.000
Employee ICT Skills	87	.059	877	-14.89	.000
R ² F	412 221.83				

Discussion:-

The current study aimed to investigate the effect of employees' ICT skills on the performance of the manufacturing firms in South-Est Nigeria. The result of the study revealed that ICT skills significantly predicted manufacturing firm's performance. This means that manufacturing firms with a significant number of ICT competent employees would perform better in production and information management performance measures than the manufacturing firms with

fewer or no ICT skilled employees. The outcome of the present finding could be described in two dimensions: firstly, the result describes individual input based on ICT competence, which means that the IT competence employee commits to job designation in an elevated performance ratio than less competent IT counterpart. The probable explanation for this outcome could be attributed to the relationship between ICT competence and job performance (Oyovwe-Tinuoye et al., 2021) and job commitment (Martin, 2011). Accordingly, Kucharska and Erickson (2020) IT competency predicts information sharing and job satisfaction. Perhaps, the result of the study reflects the relevance of competence in the use of computer technologies and improvement in the job roles.

Secondly, the result implicates employee IT competence in organizational performance outcomes. Accordingly, manufacturing firms are characterized by the production of physical materials. Thus, advancements in science and technology have led to the digitization of machinery and equipment. Automated machines are the basis of production in the modern-day manufacturing sector. Nevertheless, the effective utilization of these machines depends on technical know-how. Thus, the present finding revealed the ICT skills of employees as a scarcely explored variable that could increase the production and information management performance of the manufacturing firms. The result supports the findings of Imran et al. (2014), who found a significant relationship between technological advancement and employee performance, and (Olanrewaju, 2016), who implicated IT know-how of organizational profitability. For instance, ICT experienced machine operators, mechanics with digital skills, and sales employees with e-distribution capacity can advance the market position. The ICT competence enables an employee to complete more work tasks independently and handle the customers' relations. Perhaps, firms with fewer ICT compliance employees could find it difficult to perform optimally amid the e-competitive world of work.

Implication

The result of the present study is implicated in the role of ICT competence in information communication technology in fostering the performance of the manufacturing industries. Also, the study reveals a lack of ICT skilled employees as a determinant of decreased production and information management performance of the sector. Perhaps the ubiquity of information communication technology in work has blurred the boundaries between skilled and unskilled ICT employees. Similarly, using personnel with competence in information technology in manufacturing may lead to integration and increasing interface of various entities relating to efficiency and increased output.

Limitation of the study

Although, the present study revealed the relevance of ICT skills on the performance of the manufacturing firms in southeast Nigeria. It is essential to state the challenges associated with the investigation. For example, data relating to the performance domain (production and information management) was based on subjective information gathered from managers or key informants. Perhaps, this method is fraught with challenges as the informants may overstate or understate the performance of their organizations. Nonetheless, despite this limitation, subjective assessments have been a popular method for assessing firm performance amongst researchers (Camps & Luna-Arocas, 2012; Ndofor & Priem, 2011). Also, the sampling method may pose a limitation to the generalization of the study finding. However, the present research provides the basis for further investigation relating to IT competence and a firm's performance.

Conclusion:-

The present study was conducted to determine the predictive role of employees' ICT skills on the production and information management performance of the manufacturing firms in southeast Nigeria. The findings indicated a statistically significant relationship between employees' ICT skills and the manufacturing firms' production and information management performance. Thus, the requisite skills of employees relating to information communication technologies in the manufacturing sector are a significant variable in the performance outcome. Therefore, it is concluded that the ICT skills of employees contribute positively to the variation in the performance indicators (production and information management) of the manufacturing firms in the South-east region of Nigeria. Accordingly, the study recommends a robust training of employees in ICT and the adoption of modern IT infrastructures.

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