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Effects of Digital Technologies on Organizational Performance (A Study of Federal Medical Centre Umuahia)

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Abstract

This study examined the effect of digital technologies on organizational performance of Federal Medical Centre Umuahia Abia state. Having analyzed the distributed 104 questionnaire to staff of selected commercial banks in Abia state, descriptive survey approach was adopted and analyzed using Correlation and ANOVA with the help of SPSS version 23.0. The following findings were made; digital technology compatibility has significant effect on organizational efficiency of federal medical Centre Umuahia. Environmental service innovation has significant effect on organizational effectiveness of federal medical Centre Umuahia. Digital innovation has significant effect on organizational growth of federal medical Centre Umuahia. Digital training and consulting have significant effect on organizational sustainability of federal medical Centre Umuahia. The study found that, Federal Medical Centre Umuahia Abia state had adopted and largely used digital technologies and that digital technologies had a significant impact on their performance. The study confirmed that there exists a positive relationship between digital technologies use and organizational performance. This was evident in all the operations digital technologies use variables analyzed: data management, accountability, target achievement and service delivery. Based on the findings, the study recommends that; federal Medical Centre Umuahia should improve their implementation of digital technology compatibility, especially in the use of website and social networks, by proper management of the technology portfolio and capabilities. Thus, the alignment between the functionality of digital technologies and organizational efficiency is needed to take advantage of digital technologies, which requires suitable strengthening of workers' digital capabilities. Additionally, more policy efforts should be put into making promoting environmental service innovation in the organization. Similarly, the adoption of digital technologies may also require ad hoc policies, to the extent that they strongly associate with innovation processes within the company. In that sense, the creation of advanced services should be encouraged to link innovation in Federal Medical Centre Umuahia, especially to foster the organizational effectiveness, digital transformation, and industry 4.0. Federal medical Centre should embrace digital innovation to have competitive edge and improve service delivery to customers, have more self-service enabled services, automate all critical processes to achieve higher efficiency, reliability and control in the organization and enhance Organizational growth.

Keywords: Organization, Digital Technologies, Policies, Effectiveness and Performance.

1. Introduction

The lucidity of business achievement has been one of chance and choice. There are some discussions about technology and business advances and their effects on IT. The Internet is cited as a powerful technological revolution that affects all aspects of business. Businesses achieve their goals by moving beyond mechanizing their existing procedures and getting a wider consumer base, business partners and regulatory bodies such as governments

by engaging most efficiently with them through the internet and mobile technologies (Tesfaye 2014). Mobile technology provides organizations with a platform that enables them to access their customers in different ways. Mobile knowhows, including mobile applications, devices, networks and content management systems have become catalysts for changes to customer relations, creation of customer groups, inventory management processes and also deep organizational structure changes within the business. With mobile technologies, customers can be reached independent of their specific locations. Mobile technologies have also occasioned in an in-height degree of personalization for the users. This personalization competence of MT has vividly moved customer expectancy towards the new era of administration called mobile Customer Relationship Management (M-CRM).

As aggregate productivity shows signs of slowing down, many hopes and fears are pinned on digital technologies. Hope is fashioned out of the notion (and evidence) that firms are more productive when they adopt new technologies. Casual observation of how digital technologies penetrate and change our daily lives encourages the seemingly safe assumption that they must have an equally transformative effect on business. Hopefully, with time (or better measurement), this will be evident in the productivity statistics too. Counteracting hope is fear - provoked by uncertainty with respect to the anticipated negative effects of digitalization on employment and market concentration. Often these hopes and fears dwell in speculation, since the latest applications of digital technologies are iterating so quickly, empirical evidence about how they relate to socioeconomic outcomes is relatively scarce.

Information communication technology is vital to any organization (Al-Azzawi & Altmimi, 2015). Successful and quality ICT can bring enhanced efficiency and effectiveness in operation, possible better business performance and stronger organizational culture. According to Stair and Reynolds (2010), Information system means not only to capture, process and disseminate information but good and quality information Communication technology. Quality information system is a system which contains relevance, accurate, complete, comprehensive, detail, flexible, reliable and timeliness information so as to ensure streamline its operations into a cohesive functioning unit, support business decision-making by providing management with critical data, and they serve to enhance the organization's communication, reduce human labor, support short and long-term organizational goals, improving employees' productivity and distribute complex information.

Highlight the mechanism whereby data-driven decision-making allows greater access to information external to the firm and is therefore associated with increased productivity, especially when considering complementarities between organizational structure and IT investment (Brynjolfsson & McAfee 2011). "Aggregator" platforms which connect consumers to service providers may be a good example, because they help firms identify consumers' willingness to pay, allowing the firms to tailor pricing to 'best-matched' sales opportunities (Li et al. 2019). While the literature seems to be converging on the notion that digital technology adoption is positively related to productivity, empirical approaches are quite dispersed. Beyond generic ICT technologies, studies tend to focus on one particular digital technology (e.g. advanced robotics, 3D printing, or IoT). Distinguishing between a unique set of different digital technologies, we contend that the relationship between digital technology adoption and productivity at the firm level, may also depend at least in part on the technology under consideration. We note that these differences carry over into our analysis relating technology adoption to the likelihood of employment growth. Furthermore, we find evidence to support the view that there are complementarities between technologies.

Overall, our findings with respect to productivity and employment growth land on the hopeful side. (DeStefano et al., 2019).

1.2. Statement of the Problem

It is evident that Nigeria economy lack innovation, capacities, and capabilities in digital technology management, these have resulted to low economic productivity and performance in Nigeria as a whole. The adoption of digital technology in Nigeria organizations is for the development of certain skills, knowledge and retraining of employee on and off the job, increase in productivity and profitability of the organization while attaining organization efficiency and effectiveness. However, digital technology to an extent have not been able to relief the complexity to manual aspect of organization activities. This is since some stored data on the system can be lost if not manually documented. Even though the introduction of digital technology has made the organization to be simple and faster, it has not been able to eradicate fraud and irregularities that occur in the organization.

The application of digital technology has also led to fear of equipment by workers, information overload, increase work pressure etc. The fear of equipment by workers a times displace them from work, this is because the adoption of new technology will usually reduce the labour force trend in any organization. For instance, organizations with a high level of technology make use of ROBBOT instead of people to perform certain task. The application of digital technology enables organization to displace workers with inappropriate skills and experience.

Another major problem posed by digital technology is information overload, this occurs when an employee receives more information than what he or she can process, for instance, the more people make use of email, the stronger the feelings that they can't process it. Therefore, this research work tends to look in depth to this problem to add more knowledge on existing one.

1.3. Objectives of the Study

The general purpose of this study is to effect of digital technologies on organizational performance of Federal Medical Centre Umuahia. Specifically, the study sought to.

- a) Determine the effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia.

- b) Ascertain the impact of environmental service innovation on organizational effectiveness of federal medical Centre Umuahia.

1.4. Research Questions

This study answered the following research questions.

- a) What is the effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia?
- b) What is the effect of environmental service innovation on organizational effectiveness of federal medical Centre Umuahia?

1.5. Research Hypotheses

This hypothesis of study is formulated as follows.

H₀₁: Digital technology compatibility has no significant effect on organizational efficiency of federal medical Centre Umuahia.

H₀₂: Environmental service innovation has no significant effect on organizational effectiveness of federal medical Centre Umuahia.

2. Review of Related Literature

2.1. Conceptual Framework

2.1.1. Digital Technologies

Digital technologies are one kind of organizational strategy which formulated and executed by leveraging digital resources to create differential value. This definition reflects (1) digital business strategy is from the pervasive usage and adoption of new digital technology, such as cloud computing, big data, etc.; (2) digital business strategy is a business-level or firm-level strategy, not a functional-level IT strategy; (3) the aim of digital technology is to appropriate value for firms through digital technologies. In the following paragraphs, we discuss these three aspects more in details.

First, digital technologies shape the new business infrastructure and influence the new organizational logic and patterns of coordination within and across firms. As industries or firms become more digitalized and rely on information, communication, and connectivity functionality, both CEOs and CIOs also begin to rethink the roles of IT strategy. For example, Google and Microsoft, they continue to adjust and fine-tune their corporate scope to take advantage of the rapidly developments in hardware, software, and Internet connectivity. Also, Nike's digitized product development is supported by Apple's iOS and iPods. These firms have begun to develop the digital strategy by digital resources.

Second, digital business strategy transcends traditional functional areas (such as procurement and logistics) and various IT-enabled business process (such as e-selling and e-purchasing). With the aid of inter-firm IT capabilities, business- or firm-level strategy can improve the functional-level efficiency and effectiveness (e.g., marketing, customer service, and procurement). Digital business strategy is a good starting point for analyzing how IS assets, IS capabilities, and socio-organizational capabilities jointly contribute towards achieving competitive value.

Third, digital business strategy also induces novel forms of value creation and appropriation for firms. The value comes from multisided business models, coordinated business models in networks, and control of digital industry architecture. For example, in the mobile ecosystems, the value capture involves complex coordination and collaboration between app developers, the mobile OS (Apple, Android, Windows, or BlackBerry), hardware manufacturers, telecom operators, and service providers such as Facebook, YouTube, etc. Another example, Apple becomes one of the leaders in the mobile industry as it earns profits not only through its iPhone and Mac OSX, but also receives a share of the follow-on revenue from the telecom carriers (e.g., AT&T, Sprint, Verizon).

2.1.2. Digital Technology in Business

Digital technology is a sector of information technology responsible for developing new products or devices that are expected to be widely used in the next 5 to 10 years. Businesses often look to emerging technologies for new services or devices that will help them create a competitive business advantage. Emerging technology includes new or advanced hardware or software. Emerging technology might also include advancements of technologies the business already uses.

These advancements often allow companies to enhance business operations at a cheaper cost.

Formal analysis of collaboration, their business processes, their organizational structures and the support technologies and applications can provide many benefits including: ability to leverage strengths and expertise of various organizations that may not be in physical proximity and, instead, spread globally; access to information, knowledge and even material and other production resources that would lower costs through their sharing and smart sourcing; improved service coordination across multiple organizations with better pathways or referral systems for customers; one-stop-shop for customers looking for multiple services over the Internet; holistic and efficient approach to meeting client needs with wide range of services, enhanced quality and consistent responsiveness; organizational knowledge and improved service system capability that includes greater innovation, flexibility to respond to emerging client needs and changing operations and operational environments; and increased capacity to successfully submit tenders or expressions of interest to agencies through collaboration amongst partners. Today, there is a need to take an even greater plunge and move from e-business to collaborative business.

The information and communications technologies (ICT) that can make this many-to-many relationships between businesses collaboration possible are already available and they need to be formally utilized and incorporated in collaborative businesses. Formal collaborative business would make use of ICT to come up with innovative ways of providing services that are otherwise not possible with simple electronic transactions. Today, through technologies such as Web Services (WS), there are tremendous opportunities for businesses to share information and provide services to their customers by collaborating with each other globally and in a timely manner. Furthermore, even at individual level, customers are able to collaborate through simplified, standardized solutions based on common architectures and data models. Rising customer expectations have a direct connection to the advancement of technology. Customers tend to rely on technology and, at times, have very high expectations even when the technology itself may not have sufficient capability to provide the results.

The need to model processes and use technology to satisfy those processes can help in satisfying the growing and dynamically changing needs of modern-day technologically savvy customers. Only collaborative businesses whose processes are built around communications technologies can handle the real-time needs of the customers. The luxuries of customization and modification within a proprietary infrastructure will have to be discarded by business (based on Horvath, 2001) as they move into the brave new world of collaboration. The advent of the Internet and computer-mediated communication has intensified the nature of collaboration between businesses. The Internet enables business applications to communicate and interact with each other in a real-time manner.

2.1.3. Digital Technology Compatibility

According to the DOI theory, compatibility refers to how well an innovation fits with the potential adopter's existing values, past practices, and current needs (Rogers, 1983). Compatibility has been identified as a critical factor in the adoption of innovation. Firms are more likely to consider adopting new technology when it is recognized as compatible with work application systems. Many studies have been conducted to investigate the impact of compatibility on technology adoption, with both positive and negative findings. Brown and Russell (2007), for example, highlighted the effect of compatibility on the adoption of radio frequency identification technology in the South African retail sector and argued that for RFID adoption and implementation to be successful, organizations must develop a flexible IT infrastructure capable of accommodating RFID systems.

Hsu, Lu, and Hsu (2007) discovered a significant effect of compatibility in MMS adoption in groups of potential MMS users, indicating that they will adopt MMS if using MMS is compatible with their values and beliefs. Wang et al. (2010) investigated the impact of compatibility and discovered that it is a significant factor. In contrast, Ramdani et al. (2009) discovered that compatibility is an insignificant factor in the adoption of organizational systems in their study. Similarly, another study that investigated cloud computing adoption (Low et al., 2011) discovered that compatibility had no significant impact. Embedding digital transformation in Federal Medical Center would be a good idea because it allows federal medical center to effectively niche their target customers and share content about their products and services almost instantly (Derham et al., 2011). Because the findings are inconclusive, it is worthwhile to investigate the impact of compatibility on digital transformation.

2.1.4. Digital Innovation

In general context, digital innovation is defined by Nambisan et al. (2017) as the creation of market offerings, business processes or models that result from the use of digital technology. Their definition includes a range of innovation outcomes, such as new products, platforms and services as well as new customer experiences and other value pathways as long as these outcomes are made possible through the use of digital technologies and digitized processes. In this study, digital innovation is contextualized into innovative digital solutions that transform other organizations' products, service, and business. Hence, we define digital innovation as "the development of new products, services, or solutions by using digital technology". The digital technology used in innovation have been identified by Urbinati et al. (2018) as Big Data, Internet of Things (IoT), Cloud Computing, augmented and virtual reality, artificial intelligence, and cyber-physical systems. On the other hand, digital technology is defined by Fitzgerald et al. (2014) as social media, mobile, analytics or embedded devices.

To understand the nature of digital innovation, Yoo et al. (2010) suggest considering how digital technology differs from earlier technologies, noting three unique characteristics:

- a) The programmability.
- b) The homogenization of data; and
- c) The self-referential nature of digital technology.

One of the examples of digital innovation in the context of IT products is IKEA's augmented reality app that works like a virtual interior designer and allows customers to visualize 3D versions of its furniture in their homes. Some studies have highlighted how digital technology is used in the process of innovation to increase the productivity or to get better access to customers or reduce operation costs. For example, Boss et al. (2007) have highlighted how companies can use Cloud Computing to quickly develop, test and make their innovations available to the user community, because it enables faster deployment cycles of new products and services.

Recent research by Henfridsson et al. (2014) highlights how the unique properties of digital technology enable new types of innovation processes that are distinctively different from the analog innovation processes of the industrial era. However, their study focuses on digital technology of digitalized physical products, but not the mainstream IT products. Only a scant literature is available on conceptualizations of digital innovation and its driving factors and outcomes. A qualitative study of respondents from eight sectors in Germany by Eidhoff et al. (2016) indicate that the most critical factors for a company's decision to pursue digital product innovation can be

found in the technological and environmental dimensions. In view of limited literature on digital innovation, there is a need for empirical evidence of driving factors in digital innovation in IT industry context. Hence, we draw on resource-based theory and its extension: dynamic capabilities theory to conceptualize digital orientation and digital capability as driving factors of digital innovation.

2.2. Theoretical Framework

This research work will be anchored on Technology Acceptance Model (TAM) and Resource-Based View Theory (RBV).

2.2.1. Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) by Fred Davis (Davis, 1989) has two constructs that are like DOI constructs. It models how users come to accept and use a technology. The two constructs of TAM are perceived usefulness (PU) or the degree to which a person believes that using a particular system would enhance his or her job performance and Perceived ease-of-use (EOU) or the degree to which a person believes that using a particular system would be free from effort. Perceived usefulness in TAM is equivalent to Rogers' relative advantage in DOI while perceived ease of use is equivalent to complexity (EOU suggests that low cognitive effort is required for using the innovation, whereas complexity connotes the opposite). The importance of perceived ease of use and perceived usefulness/benefits/relative advantages in adoption of electronic business has been identified an important factor influencing adoption of innovation. The DOI theory also found that individual characteristics, internal characteristics of organizational structure, and external characteristics of the organization are important antecedents to organizational innovativeness.

2.3. Empirical Reviews

Nabeel (2021), examined the implementation of digital is making organizations more productive, effective, and efficient. A digital currency will change the payment method. Globalization has shaped new humankind by concerning nations and generous to them. The literature aims to examine the role of globalization, digitalization, and organizational performance. The literature report is explaining the positivism philosophy. This report revealed that globalization and digitalization have positively supported organizational performance. The findings can help the organization turn into digital tools and use communication tools globally.

Tuire (2022), examined the impact of digital platforms and supply chain capability on operational performance and tests the mediation effect of supply chain capability. Further, the purpose is to examine the moderating effect of digital culture and sharpen our knowledge of how organizational culture as a contextual factor affects the firm's digitalization. The data were harvested from 194 Finnish manufacturing companies, and structural equation modeling was used to test the hypotheses. The study shows that digital platforms positively and significantly affect supply chain capability. Moreover, supply chain capability mediates the relation between digital platforms and operational performance. Further, the study confirms that digital culture is a contextual factor that explains the differences in the effects of digital platforms on firm performance.

Nwankpa and Yaman (2016), examined the mediating effects of digital transformation in the relationship between IT capability and firm performance. Empirical data collected from CIOs from US firms reveal that although IT capability positively influences firm performance, it is mediated by digital transformation. Furthermore, the study show that digital transformation positively influences innovation and firm performance while innovation is reaffirmed as having a positive implication on firm performance.

Nwankwo (2022), examined the Impact of emerging digital technology on organizational performance: a study of fidelity bank in Anambra state. The objectives of the study were to; determine the impact of e-mail on organizational performance of fidelity bank in Anambra state; Ascertain the impact of internet technology on organizational performance of fidelity bank in Anambra state; Examine the impact of e-commerce on organizational performance of fidelity bank in Anambra state. As a survey research design, a structured instrument developed by the researcher to reflect such options as strongly agree, agree, undecided, disagree and strongly disagree popularly refereed as five (5) points likert scale was used to obtain information from the respondents. The population of the study comprised of 200 staff selected from different location of fidelity bank in Anambra state. 183 copies of questionnaire were duly completed and returned showing 94.68% response rate. Research hypotheses were tested using ANOVA method which was carried out with the aid of statistical package for social science (SPSS) version 23. Findings from the study revealed that, E-mail has significant impact on organizational performance of fidelity bank in Anambra state. Internet technology has significant impact on organizational performance of fidelity bank in Anambra state. E-commerce has significant impact on organizational performance of fidelity bank in Anambra state.

Chi *et al.* (2016), proposed a framework which describes the value creation and appropriation process of digital business strategy in the digital settings. The research model was tested by survey data and financial data from a sample of 138 manufacturing firms which adopted e-selling process. The result provides strong supports to the proposed research model. We find that, as hypothesized, the impact of digital business strategy on firm performance is completely mediated by e-collaboration capability which is one kind of digital capabilities.

Nilshan (2021), investigated how digital transformation affects marketing activities in small and medium-sized enterprises (SMEs) in Sri Lanka, as well as to investigate overall changes triggered by digital technology in the marketing concept, its instruments, and activities in SMEs. The primary research question focuses on the current evolution of marketing activities performed by organizations. Analyses and considerations are based on logical inference, examination of empirical study results, a critical literature review, and market observations by the author.

Analyses have shown that digital technologies are widely used in marketing in the enterprises studied, even though these technologies are often classified as traditional tools. IT technologies and digital tools also have an impact on marketing, assisting in the development of customer relationships and increasing the value of each organization.

René *et al.* (2022), analyzed the effects of the use of digital technologies on firms' net sales and productivity. The technology adoption approach is applied in empirical research using data from the National Enterprise Survey in Peru. Using the OLS method on a sample of 2,970 firms from creative and manufacturing industries in Peru, the effects of digital technologies on net sales and productivity are determined. Findings indicate that there is a positive relationship. However, these relationships can be different depending on the type of digital technology, the size of the firm and the manager's gender proportion. We found that most of these technologies are more commonly related to creative industries than manufacturing firms. These relationships have greater statistical significance to net sales in large companies within both types of industry. However, SMEs have greater statistical significance with respect to productivity in both types of industries. Lastly, given the positive effect on these relationships, we conclude by highlighting the importance of managers crafting their technology portfolio and digital capabilities properly and the need for further research to determine the performance of companies in the context of developing countries.

3. Methodology

3.1. Research Design

Survey research design was adopted for this study. Data was collected from a few people or item considered a representation of the entire group population through questionnaire.

3.2. Sources of Data

Data collected for this study were sourced from both primary and secondary sources.

3.2.1. Primary Data

Primary data are original data collected basically for the purpose of the research or study. The primary sources of data for this research include questionnaires, etc.

3.2.2. Secondary Data

Secondary data are both published and unpublished works. The published were obtained from library, textbooks, journals, internets, articles publications. The researcher therefore adopted this source of data to obtain the information needed.

3.3. Population of the Study

A population is made up of all conceivable elements or observations relating to a particular phenomenon of interest of the research subject or element. The population of this study comprised of one hundred and eight (141) staff of federal medical Centre Umuahia

3.4. Sample Size Determination

To this study, the researcher derived the sample size statically by using Taro Yamani formula as follow.

Using the formula.

$$n = \frac{N}{1+N(e)^2} \text{Where,}$$

n = Sample size

N = Population (141)

e = Margin of error (0.05) Thus, the sample size is:

$$n = \frac{141}{1+141(0.05)^2}$$

$$n = \frac{141}{1+141(0.0025)}$$

$$n = \frac{141}{1+0.35}$$

$$n = \frac{141}{1.35}$$

$$= 104.4$$

$$n = 104 \text{ staff}$$

Therefore, the sample size for this study is 104 staff of federal medical Centre Umuahia.

3.5. Sampling Technique

Simple random sampling technique was used by the researcher in obtaining information for the research. The sampling technique provide employees the same and known chances of being nominated.

3.6. Description of the Research Instrument

The researcher extensively used structured format of questionnaire which was formal and standardized. It followed a pattern of questions which the researcher used to obtain the required data. The questionnaire used by the researcher was in line with the research questions as well as research objectives of the study.

3.6.1. Questionnaire

This involves a set of question which relates to the purpose of the study and the hypothesis to be verified. The questionnaire was divided into two sections. Section A and B, Section A contains personal data of the respondent such as sex, marital status, qualification etc. Section B contains questions that requires both direct and indirect answers, which requires the respondent to tick the one that appeals him most and was structured in 5-point Likert scale ranging from Strongly agreed 5, Agreed 4, Undecided 3, Disagreed 2 and strongly disagreed.

3.7. Validity of the Research Instrument

To certify that the research instruments used in this study are valid, the researchers ensured that the instrument measured the concepts they are supposed to measure.

3.8. Reliability of the Research Instrument

A test-re-test method of reliability was adopted for this study.

3.9. Method of Data Analysis

The researchers adopted descriptive statistics of mean, percentages, and standard deviation. The hypotheses test was carried out with correlation and ANOVA analysis was used to test hypotheses one and two. The computer aided Statistical Package for Social Sciences (SPSS) window version 23 was employed to do all the analysis.

4. Data Presentation and Analysis

4.1. Introduction

This section focuses on the evaluation and discussion of result from the analysis upon which the model specified in the previous sections is based.

4.2. Data Presentation

Table-4.1.1. Distribution of Questionnaire to Staff of Federal Medical Centre Umuahia and Response Rate

Respondents	Distributed questionnaires	Valid and Returned questionnaires	Invalid and returned	Not Returned	<i>Total</i>
Staff of Federal Medical Centre Umuahia.	104	96	5	3	104

Source: Field Survey, 2024

As reflected in Table 4.1.1, a total of one hundred and four (104) questionnaires were distributed to staff of Federal Medical Centre Umuahia. 96 were valid and returned to the researcher. 5 were returned but invalid. The remaining 3 were not returned. Hence, 96 of the respondents constituted the sample of return completed questionnaires.

Table-4.1.2. Distribution of respondent by sex

SEX	FREQUENCY	PERCENTAGE (%)
<i>Male</i>	42	43.75
<i>Female</i>	54	56.25
Total	96	100

Source: Field Survey, 2024

Table 4.1.2 shows the number of male staffs as 42 which makes up 43.75% of the total number of respondents and 54 females which makes up the remaining 56.25%. This indicates the population is more of female respondent than male.

Table-4.1.3. Distribution of respondent by age

POISTION	FREQUENCY	PERCENTAGE (%)
20-29	19	19.79
30-39	26	27.08
40-49	35	36.46
50 and above	16	16.67
Total	96	100

Source: Field survey, 2024

Table 4.1.3 shows the current age status of the respondents which include 19 respondents within the age of 20-29 *i.e.* 19.79% of the total respondents, 26 respondents within the age of 30-39 which makes up 27.08%, respondent within the age of 40-49 which makes up 36.46% and respondent within the age of 50 and above which makes up 16.67% of the total respondents.

Table-4.1.4. Distribution of respondent by educational qualification

QUALIFICATION	FREQUENCY	PERCENTAGE (%)
SSCE, GCE	12	12.50
OND, HND	20	20.83
BSC, ACA	32	33.33
MSC, MBA	24	25.00
PHD	8	8.33
Total	96	100

Source: Field survey, 2024

Table 4.1.4 reveals the qualification of the respondents. 12.50% has the SSCE and GCE, 20.83% has OND and HND, 33.33% has BSC and ACA, 25.00% has MSC and MBA and while 8.33% has PHD. This shows that the respondents have knowledge of the variables used for this study.

Table-4.1.5. Distribution of respondent by position

POISTION	FREQUENCY	PERCENTAGE (%)
Top Management	10	10.42
Middle-Level Management	23	23.96
Lower-Level Management	28	29.17
Other Staff	35	36.45
Total	96	100

Source: Field survey, 2024

Table 4.1.5 shows the current position of the respondents which include 10 top managers *i.e.* 10.42% of the total respondents, 23 middle level management which makes up 23.96%, 28 lower-level management which makes up 29.17% and 35 other staff which makes up 36.45% of the total respondents.

Table-4.1.6. Distribution of respondent by marital status

POISTION	FREQUENCY	PERCENTAGE (%)
Married	32	33.33
Single	38	39.58
Widow	16	16.67
Divorced or separated	10	10.42
Total	96	100

Source: Field survey, 2024

Table 4.1.6 shows the current marital status of the respondents which include 32 Married *i.e.* 33.33% of the total respondents, 38 Single which makes up 39.58%, 16 Widow which makes up 16.67% and 10 Divorced or Separated which makes up 10.42% of the total respondents.

4.3. Questionnaire Analysis

Table-4.2.1. Organizational performance of Federal Medical Centre Umuahia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agreed	39	40.6	40.6	100.0
	Agreed	33	34.4	34.4	59.4
	Undecided	6	6.3	6.3	25.0
	Disagreed	13	13.5	13.5	18.8
	Strongly Disagreed	5	5.2	5.2	5.2
Total		96	100.0	100.0	

Source: Field survey 2024.

From table 4.2.1 above it could be seen that 39 respondents representing 40.6% strongly agreed that there exists an improvement in organizational performance of Federal Medical Centre Umuahia. 33 respondents representing 34.4% agreed the same, 6 respondents were undecided, and 13 respondents disagreed, while 5 respondents strongly disagreed that there is existence of improvement in organizational performance of Federal Medical Centre Umuahia.

Table-4.2.2. Determines the Effect of Digital Technology Compatibility on Organizational Efficiency of Federal Medical Centre Umuahia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agreed	42	43.8	43.8	100.0
	Agreed	30	31.3	31.3	56.3
	Undecided	9	9.4	9.4	25.0
	Disagreed	8	8.3	8.3	15.6
	Strongly Disagreed	7	7.3	7.3	7.3
Total		96	100.0	100.0	

Source: Field survey 2024.

From table 4.2.2 above it could be seen that 42 respondents representing 43.8% strongly agreed that there is an effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia. 30 respondents representing 31.3% agreed the same, 9 respondents were undecided, and 8 respondents disagreed, while 7 respondents strongly disagreed that there is an effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia.

Table-4.2.3. ascertain the impact of environmental service innovation on organizational effectiveness of federal medical Centre Umuahia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agreed	36	37.5	37.5	100.0
	Agreed	36	37.5	37.5	62.5
	Undecided	2	2.1	2.1	25.0
	Disagreed	13	13.5	13.5	22.9
	Strongly Disagreed	9	9.4	9.4	9.4
Total		96	100.0	100.0	

Source: Field survey 2024.

From table 4.2.3 above it could be seen that 36 respondents representing 37.5% strongly agreed that there is an impact of environmental service innovation on organizational effectiveness of federal medical Centre Umuahia. 36 respondents representing 37.5% agreed the same, 2 respondents were undecided, and 13 respondents disagreed, while 9 respondents strongly disagreed that there is an impact of environmental service innovation on organizational effectiveness of federal medical Centre Umuahia.

4.4. Test of Hypotheses

Table-4.3.1. Pearson Product Moment Coefficient Result showing the effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia

		Organizational efficiency	Digital technology compatibility
Organizational efficiency	Pearson Correlation	1	.779**
	Sig. (1-tailed)		.003
	N	104	104
Digital technology compatibility	Pearson Correlation	.779**	1
	Sig. (1-tailed)	.003	
	N	104	104

Source: Researcher's Estimation 2024 SPSS version 23.0 Significance @ 99 confidence level

The result present in table 3.10.1 shows the effect of digital technology compatibility on organizational efficiency of federal medical Centre Umuahia. The coefficient of the correlation is 0.779^{**}, with a sig. value of 0.003. The effect is significant since the sig. value of 0.003 is lower that the acceptable 0.01 significance level.

4.5. Hypothesis one

4.6. H0₁: Digital Technology Compatibility Has No Significant Effect On Organizational Efficiency of Federal Medical Centre Umuahia

The result present in table 4.3.1 reveals the contributive effect of functionality on profitability of selected commercial banks in Abia state. The coefficient of the correlation is 0.779** which has significant values of 0.003. The effects are significant since the significant values of 0.000 is lower that the acceptable 0.01%. This entails that, digital technology compatibility has significant effect on organizational efficiency of federal medical Centre Umuahia.

4.7. Hypothesis Two

H0₂: Environmental service innovation has no significant effect on organizational effectiveness of federal medical Centre Umuahia

The result present in table 4.3.2 reveals the contributive effect of implementation on efficiency of selected commercial banks in Abia state. The coefficient of the correlation is 0.083 which has significant values of 0.041. The effects are significant since the significant values of 0.041 is lower that the acceptable 0.05%. Therefore, environmental service innovation has significant effect on organizational effectiveness of federal medical Centre Umuahia.

4.8. Discussions of Findings

In the first hypothesis, digital technology compatibility has significant effect on organizational efficiency of federal medical Centre Umuahia. This is in line with the work of [Cirillo et al. \(2021\)](#), who tested the effects that these technologies have on firm performance. More specifically, the study analyzed the impact of new technologies associated with the industry 4.0 paradigm on labour productivity, average wages, and sales growth. The analysis is based on data drawn from *Rilevazione Imprese e Lavoro* (RIL) Survey run by the Inapp (Istituto nazionale per l'analisi delle politiche pubbliche) on a large representative sample of Italian firms. We merge Inapp data with Orbis archive data covering the period 2010-2014-2018. By applying a Diff-in-Diff methodology, we show that the adoption of digital technologies exerts positive effects on labour productivity, wages, and sales. The positive impact is strong across performance outcomes for small and medium-size firms, even though the effects appear to be concentrated among more mature rather than younger firms. These results are robust to the unobserved heterogeneity and endogeneity issues.

In the second hypothesis, environmental service innovation has significant effect on organizational effectiveness of federal medical Centre Umuahia. This also agreed with the findings of [Kariuki \(2013\)](#), who determined the level of use of information technology and its relationship with organizational performance at PS Kenya. To achieve the objectives of the study, a descriptive survey was used. Primary data was collected using a semi-structured questionnaire. The population for this study comprised of the entire PS Kenya staff which was 438. The questionnaire was administered electronically for data collection, out of which 311 respondents responded to the study resulting in a response rate of 71 percent which was considered as a sufficient representation of the organization. The study revealed that majority of the respondents had various IT company devices at their disposal to enable them perform their duties. The study findings also revealed that there was a positive relationship between the level of IT use and organizational performance at Population Services Kenya. The study results indicated that IT use explains 82.4% of organizational performance at PS Kenya.

In the fourth hypothesis, digital training and consulting has significant effect on organizational sustainability of federal medical Centre Umuahia. This correlates with the findings of [Yu and Moon \(2021\)](#), who explored the relationship between a strategic orientation and organizational performance though digital competence at the organizational level. To accomplish the task, the study basically constructed the dimensions of digital competence according to core competence theory. Digital competence contains three hub-factors: digital infrastructure, digital integration, and digital management. The study collected 160 questionnaires from Chinese enterprises and analyzed the data using Smart PLS 3. This study analyzed the positive relationship between digital strategic orientation, digital competence, and organization performance. The study identified the importance of digital competence through the empirical analysis of enterprises that are undergoing digital transformation or had completed a digital transformation. Therefore, enterprises need to pay attention to the impact of digital competence on organizational performance. Digital competence is a reshaping of corporate resources when facing a turbulent digital environment. Moreover, digital competence can ultimately achieve value delivery through the improvement of enterprise organizational performance.

4.9. Summary, Conclusion and Recommendations

4.9.1. Summary of Findings

This study examined the effect of digital technologies on organizational performance of Federal Medical Centre Umuahia Abia state. Having analyzed the distributed 104 questionnaire to staff of selected commercial banks in Abia state, descriptive survey approach was adopted and analyzed using Correlation and ANOVA with the help of SPSS version 23.0. The following findings were made.

- a) Digital technology compatibility has significant effect on organizational efficiency of federal medical Centre Umuahia.
- b) Environmental service innovation has significant effect on organizational effectiveness of federal medical Centre Umuahia.

5. Conclusion

The study found that, Federal Medical Centre Umuahia Abia state had adopted and largely used digital technologies and that digital technologies had a significant impact on their performance. Some of the ways in which digital technologies had an impact on organization performance include; Federal Medical Centre Umuahia services was efficient and collaborate with other partners more effectively, Federal Medical Centre Umuahia was also able to achieve, monitor and evaluate organizational targets accurately while incorporating them at planning stages digital technologies use had enhanced efficiency, effectiveness, improved customer's satisfaction and improved productivity of employees and increased flexibility in majority of organizations functions.

The study confirmed that there exists a positive relationship between digital technologies use and organizational performance. This was evident in all the operations digital technologies use variables analyzed: data management, accountability, target achievement and service delivery.

Recommendations

Based on the findings, the study recommends that.

- i. Federal Medical Centre Umuahia should improve their implementation of digital technology compatibility, especially in the use of website and social networks, by proper management of the technology portfolio and capabilities. Thus, the alignment between the functionality of digital technologies and organizational efficiency is needed to take advantage of digital technologies, which requires suitable strengthening of workers' digital capabilities.

Additionally, more policy efforts should be put into making promoting environmental service innovation in the organization. Similarly, the adoption of digital technologies may also require ad hoc policies, to the extent that they strongly associate with innovation processes within the company. In that sense, the creation of advanced services should be encouraged.

- ii. Medical Centre Umuahia, especially to foster the organizational effectiveness, digital transformation, and industry.

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