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ORIGINAL SCIENTIFIC PAPER

# Evaluating the Influence of Digital Technology on the Performance of Female-Owned Enterprises in Nigeria



Habiba Shamaki<sup>1</sup>

Umar Abbas Ibrahim<sup>2</sup>

Department of Business Administration, Nile University of Nigeria, Abuja

Nnanna Azu Philemon<sup>3</sup>

Department of Economics, Air Force Institute of Technology, Kaduna, Nigeria

## ABSTRACT

*The strategic contributions of digital technology in the operations and performance of entrepreneurial ventures are a profound phenomenon, involving continual adaptation to a constantly evolving business environment. This paper examines the influence of digital technology on female-owned enterprises based on customers' satisfaction in Federal Capital Territory (FCT), Abuja, Nigeria. Survey research was employed to derive primary data through the use of structured closed-ended questionnaires from 113 selected female-owned enterprises registered with NECA's Network of Entrepreneurial Women (NNEW). Adopting digital orientation, digital capability and digital transformation as dimensions of the digital technology which is the independent variable, multiple regression was used to measure its impact on customer satisfaction as the dependent variable. Findings revealed that the awareness of digitalisation does not suffice to influence business performance, but adopting and adapting to new technology is crucial in creating value addition to meet and exceed customers' expectations. Conclusively, this research establishes the requisite for female-owned enterprises to embrace and exploit the vast potential and significant role that digital technology plays in the*

<sup>1</sup> Corresponding author, e-mail: hshamaki@gmail.com

<sup>2</sup> E-mail: Abbas.ibrahim@nileuniversity.edu.ng

<sup>3</sup> E-mail: phil4azu@yahoo.com

*enhancement of business performance, for improved strategic competitive advantage and economic development.*

**KEY WORDS:** *customer satisfaction, digitalisation, digital capability, digital orientation, digital technology, digital transformation, female enterprises*

## **Introduction**

The application of Digital Technology (DT) in the operations of entrepreneurial ventures across different industries all over the world is a rapidly growing phenomenon (Riyanto, Primiana, & Azis, 2018). As Tayibnapis, Wuryaningsih and Gora (2018) stated, this has become an inevitable tool for increasing the competitive advantage of enterprises, especially in digital economies. Globally, the number of internet users tripled in a decade from 1 billion in 2005 to about 3.2 billion in 2015 and 4.66 billion in 2021 (Getahun, 2020; Siregar & Sobari, 2021). In Nigeria, as of 2018, the number of internet users had reached 111.6 million out of about 200 million population (AbdulKareem, Bello, Ishola et al., 2020). This figure grew so rapidly that as of 2020, about 143.7 million Nigerians were already using the internet (Joshua & King, 2020; Fadeyi, 2021). This highlights the compelling need for Nigerian firms to digitalize their operations in order to access opportunities of the emerging digital economy, where information and business transactions have evolved from physical to virtual (Tehubijuluw, 2017).

An example of rapid adoption of DT by Nigerian firms can be seen in the banking sector where business operations are now rapidly changing from physical cash handling, use of cheques and bank tellers to a cashless system of using debit/credit cards, Automated Teller Machines (ATM), Electronic Funds Transfer (EFT) and internet banking (Castro, 2019). It is also seen in construction management through the use of automated and digital fabrication, digital imaging, sensor technology and digital project management (Puolitaival, Kestle & Kahkonen 2018; Meena & Parimalarani, 2020). All these are aimed at improved value creation with speed and, ease of doing business (Azu et al., 2021). DT leads to digital innovation, which according to Khin and Ho (2019) is defined as the creation of market offerings, business processes or models that result from the use of DT.

According to Eremina, Lace and Bistrova (2019), firms who use DT (that is, digitalisation) easily manage to enhance their competitive

advantage, while those who lag in terms of digitalisation face difficulties in sustaining their marginal profitability. Adoption of DT by entrepreneurial firms has led to major improvements such as enhanced customer satisfaction through improved quality of products/services, simplified transactions and payment systems, enhanced communication system and increased profitability (Khin & Ho, 2019). Despite these huge benefits of DT to entrepreneurial firms, studies have highlighted that it is a complex and challenging phenomenon as it involves a continual adaptation to a constantly changing environment (Hess, Myers & Chanas, 2019; Kane, 2017). Furthermore, digital transformation (integration of digital technology into all operations of an enterprise) is usually confronted with some challenges which include: financial constraints, employees' resistance to change, dearth of professionals to lead the digitisation initiatives, risk-averse culture to change, and the threat of cyber security (Kane, 2017; Zomer, Neely & Martinez, 2020). These challenges threaten effective digital transformation (Kane, 2017; Zomer, Neely & Martinez, 2020). Additionally, female entrepreneurs are faced with some peculiar challenges hindering them from adopting DT, they include: gender stereotyping; exposure to gender-based violence and discrimination, and lastly limited access to financial services (Zomer, Neely & Martinez, 2020; Ong et al., 2020). These challenges could slow down the growth rate and customer satisfaction of female-owned enterprises.

Customers' satisfaction increases as more of their expectations are met, leading to customer loyalty (Nowicka, 2020). With the current digital awareness in society, consumer behaviour is rapidly changing with increased expectations of value for money amongst customers (Lam & Law, 2019; Nowicka, 2020). Meeting these expectations competitively has become problematic owing to the myriad of challenges confronting the significantly growing number of female entrepreneurs (Lam & Law, 2019; Guinan, Parise & Langowitz, 2019). In view of the above and considering the strategic contributions of female-owned enterprises to the economic development of Abuja, Nigeria, it is deemed necessary to investigate the phenomenon of how DT impacts the performance of selected female-owned enterprises, using customer satisfaction as the indicator for measuring performance. To achieve this broad aim, this study formulated three specific objectives as follows: i) to determine the impact of digital orientation on customer satisfaction; ii) to ascertain the impact of digital capability on customer satisfaction and; iii) to establish the impact of digital transformation on customer satisfaction. Furthermore, this study's research

questions intended to be answered by the researcher include the following: i) what is the impact of digital orientation on customer satisfaction?; ii) to what extent does digital capability affect customer satisfaction? and lastly; iii) is there any relationship between digital transformation and customer satisfaction? In order to achieve this study's objectives, the following hypotheses were tested: Ho<sub>1</sub>: Digital orientation has no significant impact on customer satisfaction. Ho<sub>2</sub>: Digital capability has no significant impact on customer satisfaction. Ho<sub>3</sub>: Digital transformation has no significant impact on customer satisfaction. The remaining part of this study is structured to begin with review of related literature which presents the various ways that prior studies have conceptualised the main variables of this study, "digital technology" and "firm performance" in the context of female entrepreneurship including a description of the conceptual and theoretical frameworks of the study. This was followed by research methodology, presentation of results and discussion of findings, and then conclusion.

## **Literature Review**

### **Concept of Digital Technology**

Digital technology (DT) is defined from a broad perspective as computer-based systems with the purpose of handling digital information (Idris, 2019). According to Abbott (2015) and Castro (2019), DT involves the process of creating, collecting and processing of digital information. Khin and Ho (2019) also submitted that DT represents any device that functions using a binary computational code (as in laptops, computers and smartphones) as well as in other related services like the internet, social networking and Wi-Fi (Idris, 2019; Castro, 2019). Some examples of DT have been highlighted to include computer programs and software, web pages and websites, including social media, data and databases (Idris, 2019; Khin & Ho, 2019). The application of DT cuts across different industries and aspects of human endeavours, making it possible for the same technology to be adopted for different purposes depending on the users' needs; the peculiarity of industry is therefore key in conceptualising DT. For example, Puolitaival et al. (2018) while defining DT came to the conclusion that there is no consensus within the construction management discipline on the definition of DT. However, the study added that there is a long list of digital technologies used in the discipline which includes digital imaging,

mobile solutions, monitoring and control technology, sensor technology, automated and digital fabrication, and digital project management (Puolitaival et al., 2018). Puolitaival et al. (2018) further highlighted the fact that the application of all these technologies and many more is what defines DT in the industry. Similarly, in the field of education, DT is seen as the process whereby the teacher or learner uses digital equipment such as a computer (laptop, mobile phones, televisions, MP3 player or tablet) in accessing digital tools (like learning platforms and virtual learning environments) to improve their knowledge and skills (Sharif & Senin, 2020). The digital tools (used to promote e-learning) when effectively used assist in building such skills as interactivity, critical thinking and collaboration among teachers and learners in the field of education (Sharif & Senin, 2020).

In the context of this study, DT is conceptualised as the electronic tools, systems and resources (like computers, social media, mobile phones and internet) that are used to increase the internal capabilities of an enterprise in executing its core operations (Sharif & Senin, 2020). In today's competitive business environment, delivering value to customers and meeting their expectations competitively requires the adoption of some level of digital technology (Sharif & Senin, 2020). Similarly, for businesses to be able to integrate digital technologies into their operations, they need to have three things (which have been adopted as the dimensions of digital technology in this study), they include: Digital Orientation (DO), Digital Capabilities (DC) and Digital Transformation (Khin & Ho, 2019). These dimensions are discussed below.

### *Digital Orientation*

Digital orientation is generally the willingness and ability of an enterprise to acquire a reasonable technological background and to use it in the development of new products (Khin & Ho, 2019; Elnagar, Aronovich & Kusnoto, 2020). Such enterprises welcome new technologies that help to improve their efficiency and productivity (Aboobaker & Zakkariya, 2019; Elnagar et al., 2020). In the context of this study, digital orientation is defined as an enterprise's commitment towards the application of digital technology in achieving innovative products, services, and solutions (Aboobaker & Zakkariya, 2019; Elnagar et al., 2020). Effective digital orientation does not only guarantee increased responsiveness to technological changes, but also ignites the awareness and willingness to

create innovative digital solutions. Studies have found that enterprises that have superior digital orientation achieve a greater level of products/service innovation because they are more disposed to using new technologies (Alam, Erdiaw-Kwasie, Shahiduzzaman & Ryan, 2018; Khin & Ho, 2019).

### *Digital Capability*

This study defines digital capability as a business enterprise's talent, skill and expertise deployed to manage digital technologies for new product development and other operations of the enterprise (Levallet & Chan, 2018; Yasa, Ekawati & Rahmayanti, 2019). According to Sandberg, Mathiassen and Napier (2014), the digital capability of a firm refers to the firm's routine strategies that create differential values using digital assets. Digital assets in this context refer to the available Information Technology (IT) resources, knowledge of IT design and competencies to effectively implement IT-driven operations (Sandberg, Mathiassen and Napier, 2014). Two critical digital capabilities have been identified as critical for a successful digital transformation, they include: i) a well-developed information management capability and ii) a flexible IT infrastructure (Levallet & Chan, 2018; Yasa et al., 2019).

### *Digital Transformation*

Generally, digital transformation involves the adoption of new digital technologies to enable major business improvements in such areas as: organisational structure and processes, value creation, enhanced quality of products and services and better customer experience (Heavin & Power 2018; Maiwald, 2020). There are two perspectives to digital transformation, the first is migration from a manual or analog process to a digital process, while the second involves upgrading an existing digital process to a new one (Heavin & Power 2018; Maiwald, 2020; Fachrunnisa et al., 2020). In view of the foregoing, digital transformation is conceptualised in this study as the adoption of digital technologies (smartphones, computer systems, internet and social media platforms) to businesses, through replacing manual processes with digital processes, or replacing older digital technologies with newer ones (Heavin & Power 2018; Fachrunnisa et al., 2020; Lee & Cho, 2020). For enterprises to acquire a strategic advantage in an emerging digital economy like that of Nigeria, digital transformation is an important requirement as it brings about: improvement in employee speed of

performance through automated processes, increased productivity, informed decisions based on accurate data, time-saving, cost reduction and, innovative products and services (Shash & Pshembayeva, 2019; Kretschmer & Khashabi, 2020; Maiwald, 2020).

### **Female Entrepreneurship and Digital Technology**

Globally, there is a growing involvement of women in entrepreneurial activities cutting across various aspects of human endeavour. Different scholars have therefore defined the concept of female entrepreneurship from different perspectives; for example, female entrepreneurship has been defined as the processes by which women start and/or run their businesses (Kirobo, 2015; Zizile & Tendai, 2018). However, other scholars give a more expanded definition by highlighting two major criteria for identifying women entrepreneurial activities, namely: the extent of women contribution to equity and, the employment positions of the enterprise occupied by women (Kirobo, 2015; Zizile & Tendai, 2018; Deng, et al., 2020). This second group of scholars, therefore, defined female entrepreneurship as an enterprise owned and controlled by a woman having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated by the enterprise to women (Kapur, 2016; Deng et al., 2020). The focus is not only on the ownership and control of the enterprise but also on the workforce, stressing that at least 51 per cent of the enterprise's workforce must be made up of women (Kapur, 2016; Deng et al., 2020). In the context of this study, female entrepreneurship is conceptualized as the establishment and running of enterprises owned, managed and controlled by women who deploy resources (including digital technology) to create value for their customers in a creative and innovative manner (Sharma & Kulshrestha, 2019). In view of the above, female entrepreneurs are those women or groups of women who initiate, organise and run a business enterprise creatively and innovatively (Kapur, 2016, Sharma & Kulshrestha, 2019). They bear the financial, administrative and social risks of an enterprise and they also sometimes take part in the day-to-day management of the enterprise (Kapur, 2016; Deng et al., 2020).

Digital technology is a global phenomenon that has now become a critical success factor for the advancement of female entrepreneurship (Pergelova, et al, 2019). It provides female entrepreneurs with the strategic advantage of overcoming a range of challenges that are peculiar to them (Pergelova et al., 2019). According to Popovic-Pantic, Semenčenko and

Vasilic (2020), United Nations Conference on Trade and Development (UNCTAD) identified some benefits that DT bring to female-owned enterprises, they include the fact that DT: reduces transaction costs through electronic platforms; increases access to market information; facilitates improved communication in the value chain; and guarantees better customer satisfaction (UNCTAD, 2014; Pergelova et al., 2019; Popovic-Pantic et al., 2020). Furthermore, despite the identified huge benefits of DT to female entrepreneurs, there is a striking gender imbalance between male and female entrepreneurs in terms of access to, and adoption of DT, with the men having more access (UNCTAD, 2014; Popovic-Pantic et al., 2020; Felstead, 2019). A recent study by UNCTAD in the context of selected African countries (Tanzania, Uganda and Nigeria) identified a few factors as being responsible for the gender imbalance in DT access and adoption, they include: the social status of women compared to men; traditional roles of women in the society, ability to own property and other legal rights and poor access to business support services for female entrepreneurs (UNCTAD, 2014; Popovic-Pantic et al., 2020). In Nigeria, most female entrepreneurs (especially those in the rural areas) have identified DT as an opportunity, but lack the digital literacy to exploit it (Felstead, 2019; Rai, 2019). This is a result of poor representation of women in disciplines that facilitate functioning in the digital world (Felstead, 2019; Rai, 2019)

### **Firm Performance**

Firm performance measures the overall outcome and goal achievement of a firm both in financial and non-financial terms over a particular period of time (Kegoro, Akoyo & Otieno, 2020; Husnain, Islam & Ali, 2020). It also refers to the extent of success or the degree to which an organization achieved its objectives with minimum efforts by employees and also with limited resources of the firm (Kegoro, Akoyo & Otieno, 2020; Husnain, Islam & Ali, 2020). The contention amongst scholars is exactly how the "extent of success or the degree to which firm objectives are achieved" is measured. For example, several financial and non-financial indicators have been used by various studies to measure firm performance including firms' profitability, market share, annual sales turnover, customer satisfaction and the number of employees (Joensuu-Salo et al., 2018; Hamdani & Herlianti, 2019; Khin & Ho, 2019; Bouwman, Nikou & De-Reuver, 2019; Yasa et al., 2019). A review of studies that measured "firm performance" in the context of how it is influenced by DT revealed that the studies can be categorized



into two groups on the basis of the source of information about the firm performance, they include the Objective Approach (OA) group and the Subjective Approach (SA) group (Joensuu-Salo et al., 2018; Yasa et al., 2019). Studies in the OA group are those that obtained firm performance information from verifiable sources (financial statements, annual reports and balance sheets), while those studies in the SA group generated firm performance information by asking firm managers/owners and other stakeholders to provide their perception/opinion regarding the past or future performance of their firms (Hamdani & Herlianti, 2019; Khin & Ho, 2019). For this study, the subjective approach to measuring firm performance was adopted because of the following reasons: i) researchers find it difficult to access the financial and non-financial records of small and medium-sized enterprises (SMEs) because of their poor record keeping culture; ii) business owner/managers are usually not willing to provide researchers with sensitive information about their business for fear of it being used against them by competitors or the government for tax purpose; iii) respondents are generally more willing to give a subjective evaluation of their firms' performance as it allows them to provide a more holistic measure of their firms' performance and; iv) not all performance indicators can be easily measured using an objective approach, for example, customer satisfaction, employee skills or motivation can only be best measured using subjective approach (Ezeagba, 2017; Musah, 2017; Nicoletta, 2018; Chappel & Jaffa, 2018).

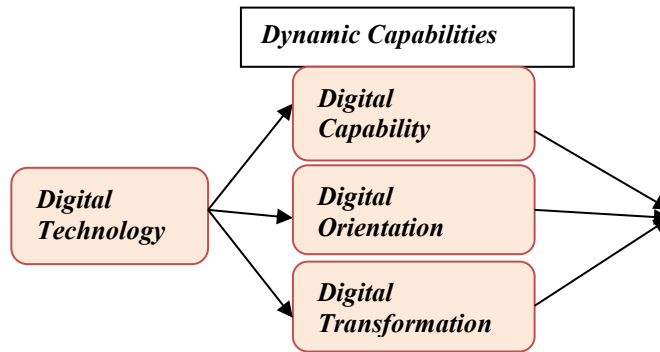
The focus of this study is on the customer, using the subjective approach to measuring customer satisfaction of female-owned enterprises in the FCT. Customer satisfaction refers to a customer's overall evaluation of the performance of an enterprise's offering, it includes the measurement that determines how happy or not customers are with a firm's products/services (Hayati et al., 2020). In research, most of the non-financial KPIs are measured using subjective means by relying on the perception/opinion of the respondents under investigation, this study is not an exception (Yildiz & Amin, 2020).

### **Conceptual/theoretical Framework**

As can be seen in Figure 1, achieving effective application of digital technology in business operations requires that the firm has digital orientation, digital capabilities and digital transformation. These three critical requirements when properly applied to business operations lead to

increased firm performance. Firm performance in the context of this study was measured using a non-financial indicator (customer satisfaction). This study adopted the dynamic capabilities theory to underpin the study as the theory broadly focuses on not only the resources and capabilities of the firm, but also the firm's ability to adapt to rapidly changing business environments. Applying the dynamic capabilities theory; digital capability, digital transformation and digital orientation all endow the selected female-owned enterprises in FCT with dynamic capabilities, which in turn helps them achieve superior firm performance in terms of customer satisfaction (Chuang & Lin, 2015; Plattfaut et al., 2015; Lichtenthale, 2015). The Dynamic Capabilities Theory was developed by three American economists, David Teece, Gary Pisano and Amy Shuen in 1997 (Teece, 2018; Laaksonen & Peltoniemi, 2018). The theory assumed that a firm's ability to react effectively and timely to rapidly changing business environments requires a combination of manifold capabilities, explaining that these capabilities offer such firms sustainable competitive advantages and superior performance (Teece, 2018; Laaksonen & Peltoniemi, 2018). It is believed that a firm's dynamic capabilities are the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece, 2018; Laaksonen & Peltoniemi, 2018). DCT suggests that firms who reconfigure their competencies to cope with changing business environment would offer new services, enhance existing service delivery and improve overall firm performance through increased profits and customer satisfaction (Chuang & Lin, 2015; Plattfaut et al., 2015; Lichtenthale, 2015). Scholars have however argued that the dynamic capabilities theory is vague, tautological and not easy to understand, adding that while the theory remains useful in addressing the quick response to the business changing environment, it failed to describe exactly how (Plattfaut et al., 2015; Lichtenthale, 2015). Despite these criticisms, DCT is very much suited for competitive survival in response to the rapidly changing contemporary business environment, hence its adoption as the lance through which the two variables of this study are examined. Figure 1 describes the relationship between digital technology adoption and firm performance among selected female-owned enterprises in Abuja.

Figure 1: Conceptual/theoretical framework



## Methodology

This study adopted the survey research method which is characterized by quantitative means of data collection and analysis. This method involved collecting and analyzing quantitative data generated using carefully drafted closed-ended questionnaires which were distributed online through survey planet. The population of this study comprises all the 158 female-owned enterprises registered with the NECA's Network of Entrepreneurial Women (NNEW) in Abuja, Nigeria as of January 2021. NNEW is a gender-based network of the Nigeria Employers' Consultative Association (NECA), the umbrella body of employers in the Organized Private Sector of Nigeria (Ademokun & Ajayi, 2012; Taiwo, Feyisayo & Abosede, 2020). A total of 113 sample size of this study was determined using the Taro Yamane statistical formula. However, a convenience sampling technique was used to select the 113 respondents from the population. The convenience sampling technique is a non-probability sampling method that allows a researcher to draw samples from that part of the population that is readily available for participation in the study (Suyanto & Trisnawati, 2016; Garaika & Margahana, 2020). The instrument for data collection (questionnaire) was subjected to a face and content validity by scholars. The scholars were requested to make necessary corrections, especially on content, grammar, wording and organisation of questions on the questionnaire. The feedback obtained was used to modify the questionnaire before it was administered to respondents. The researcher also made sure that the questions adequately cover the various dimensions of the variables under investigation. Similarly, reliability of the research instrument (questionnaire) followed a statistical

approach through the use of Cronbach's Alpha ( $\alpha$ ) test for reliability as can be seen in table 1.

*Table 1: Reliability Statistics*

<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>No. of Items</b>
Customer Satisfaction	0.788	0.804	30
Digital Orientation	0.745	0.814	30
Digital Capability	0.787	0.833	30
Digital Transformation	0.812	0.818	30

*Sources: Author's Computation*

Cronbach's alpha,  $\alpha$  (or coefficient alpha), developed by Lee Cronbach in 1951, estimates the reliability, or internal consistency. Cronbach's alpha tests to see if multiple-question Likert scale surveys are reliable. These questions measure latent variables -hidden or unobservable variables. These are very difficult to measure in real life. Cronbach's alpha tells if the test designed has accurately measured the variable of interest.

*Table 2: Inter-Item Correlation Matrix*

	$X_{1,i}$	$X_{2,i}$	$X_{3,i}$	$Y_i$
$X_{1,i}$	1.000	0.497	0.513	0.244
$X_{2,i}$	0.497	1.000	0.503	0.378
$X_{3,i}$	0.513	0.503	1.000	0.523
$Y_i$	0.244	0.378	0.523	1.000

*Source: Author's Computation*

The estimated Cronbach's Alpha for pilot testing with 30 random respondents is reported in Table 2. The reported Cronbach's Alpha is the average of each variable which includes; Customer Satisfaction (0.788), Digital Orientation (0.745), Digital Capability (0.787) and Digital Transformation (0.812). Each of the reported Cronbach's Alpha is within the acceptable level and therefore is used for the estimation.

## Model Specification

To establish a scientific inference, it is pertinent to establish a working model that will be estimated. Given the framework established in subsection 2.3 and demonstrated in figure 1, applying the dynamic capabilities theory; Chuang & Lin (2015), Plattfaut et al. (2015), and Lichtenthale (2015) noted that digital capability, digital transformation and digital orientation will endow the selected female-owned enterprises in FCT with dynamic capabilities, which in turn will help them achieve superior firm performance in terms of customer satisfaction. Thus, the working model for this research is as follows;

$$Y_i = \varphi_0 + \varphi_1 X_{1,i} + \varphi_2 X_{2,i} + \varphi_3 X_{3,i} + \varphi_4 X_4 + \mu_i \quad (3)$$

Where;

$Y_i$  represents a measure of customer satisfaction in  $i$  women-owned firms

$X_{1,i}$  stands for digital orientation in  $i$  women-owned firms

$X_{2,i}$  represents digital capability in  $i$  women-owned firms

$X_{3,i}$  represents digital transformation in  $i$  women-owned firms

$\varphi_0$  stands for the constant

$\mu_i$  stands for the white noise error term in  $i$  women-owned firms

$\varphi_1, \varphi_2, \varphi_3, \varphi_4$  are the parameters to be estimated

## Data Analysis

The primary data collected was measured using a 5-point Likert scale ranging from 1 point for "strongly disagree" to 5 points for "strongly agree". A Likert scale is a rating scale used to assess the opinions, perceptions, attitudes or behaviour of respondents (Abidin, Suryanto, & Utami, 2020; Oktaviani & Mandasari, 2020). It allows the respondents to express the extent to which they agree or disagree with a particular statement (Abidin et al., 2020; Oktaviani & Mandasari, 2020). This study's quantitative data was analysed using multiple regression analysis to determine the extent to which digital capability, digital orientation and digital transformation would explain the variations in customer satisfaction among the female-owned enterprises that will be surveyed for this study. The significant value determined the significance of the relationship between the independent variables and the dependent variable, while the coefficient of determination

(R<sup>2</sup>) reveals how well each independent variable can predict the dependent variable.

## Results and Discussion

### Pre-estimation Tests and Correlation

The pre-estimation test reported in this research work is the Correlation coefficients, Descriptive and Reliability Statistics. Table 2 reports the correlation. It is established that none of the variables is highly correlated with each other, hence, can be estimated simultaneously in the model. In other words, Azu et al. (2020) have noted that when independent variables are correlated, this is a likelihood of multicollinearity issues in the model. This has been avoided in the given correlation matrix reported in Table 2.

*Table 3: Descriptive and Reliability Statistics*

<b>Panel A: Descriptive Statistics</b>					
	Mean		Std. Deviation		N
$X_{1,i}$	4.412136536030340		0.433539324194425		113
$X_{2,i}$	4.030341340075850		0.713124394566593		113
$X_{3,i}$	4.054203539823010		0.646694053840820		113
$Y_i$	4.202433628318580		0.405156007785585		113
<b>Panel B: Reliability Statistics</b>					
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items		N
0.748	0.761		4		113

*Source: Author's Computation*

The study conducted the descriptive statistics and reliability test for the overall response of the questionnaire. These results were posted in Table 3 reveals the summary statistics (Panel A) and reliability test (Panel B) of the relevant variable included in the research. In panel A of Table 3, the dependent variable is represented by  $Y_i$  which is a measure of customer satisfaction in  $i$  women-owned firms and the mean value is reportedly 4.20 while the standard deviation is approximately 0.41 which yield a variance of 0.168 approximately. The independent variables include  $X_{1,i}$  which stands for digital orientation in  $i$  women-owned firms; Table 3 shows that the mean value is 4.41 while the standard deviation is 0.434 which will give a

variance of 0.1875 approximately. Another independent variable is  $X_{2,i}$  which represents digital capability in  $i$  women-owned firms. The mean is reportedly 4.03 while the standard deviation is 0.713 which yields a variance of 0.508 approximately. The third independent variable  $X_{3,i}$  which stands for digital transformation in  $i$  women-owned firms. The means of these variables is 4.05 and the standard deviation is 0.647 which give a variance of 0.419 approximately. Finally, the Cronbach's Alpha for the four variables is 0.748 which is above the minimum requirement. Therefore, the questionnaire passed the reliability test for both the pilot test and the entire questionnaire reported herein.

### **Discussion of Results**

The estimated regression was used to test the hypothesis to ascertain the effect of digital technology on the performance of selected female-owned enterprises in Federal Capital Territory (FCT), using customer satisfaction as the performance indicator. The variables selected include a measure of customer satisfaction in  $i$  women-owned firms ( $Y_i$ ) as the dependent variable. The independent variables include digital orientation in  $i$  women-owned firms ( $X_{1,i}$ ), digital capability in  $i$  women-owned firms ( $X_{2,i}$ ) and digital transformation in  $i$  women-owned firms ( $X_{3,i}$ ). The R-Square indicates that these independent variables could influence the dependent by 67.8 per cent. The Durbin Watson (DW) statistic test reveals there no autocorrelation in the residuals from the statistical regression analysis. This is evident with the value of 2.045 which is above 2.0 that reveals no autocorrelation detected in the selected sample.

The first objective of this research is to determine the impact of digital orientation on customer satisfaction in selected female-owned enterprises in Abuja. This forms the first independent variable of the research. From table 4, the coefficient for digital orientation is -0.086 which is not statistically significant. Therefore, the first hypothesis ( $H_{o1}$ ): Digital orientation has no significant impact on customer satisfaction in the selected female-owned enterprises in the FCT cannot be rejected. The result is contrary to Khin and Ho (2019) and Elnagar et al., (2020) which reasoned that for businesses to be able to integrate digital technologies into their operations, they need to have Digital Orientation (DO). They reasoned that business enterprises take advantage of the opportunities presented by digital technology through an attitude and behaviour that supports proactiveness and openness to new

ideas in order to cope with the current global business challenges and opportunities. In other words, digital orientation could improve performances.

*Table 4: Regression Analysis on Impact of Digital Technology on performance*

Variables	Unstandardized Coefficients		Significance level
	$\Phi$	Std. Error	
Constant	2.948	0.335	0.000
$X_{1,i}$	-0.086	0.092	0.355
$X_{2,i}$	0.104	0.056	0.044
$X_{3,i}$	0.299	0.062	0.000
R-Square	0.678	Durbin-Watson	2.045
Adjusted R-square	0.596		

*Source: Author's Computation*

On the other hand, the second objective of this research is to ascertain the impact of digital capability on customer satisfaction in selected female-owned enterprises in Abuja. Digital capability forms the second independent variable of the research. From table 4, the coefficient for digital capability is 0.104 and statistically significant at 5 per cent. Thus, a unit increase in digital capability will cause 0.104 units to increase in performance (customer satisfaction), all things being equal. Therefore, the second hypothesis ( $H_{02}$ ): Digital capability has no significant impact on customer satisfaction in the selected female-owned enterprises in the FCT is hereby rejected. This result is consistent with Khin and Ho (2019) and Yasa et al. (2019) which explains that the impact of digital capabilities on business performance is positive. It, therefore, implies that being aware of digitalisation is not enough to influence business performance but adopting and adapting to the new norms.

On the other hand, the third objective of this research is to establish the impact of digital transformation on customer satisfaction in selected female-owned enterprises in Abuja. Digital transformation forms the third independent variable of the research. From table 4, the coefficient for digital capability is 0.299 and statistically significant at one per cent. This is to say a unit rise in digital transformation will cause 0.299 units to increase in customer satisfaction, all things being equal. Therefore, the third hypothesis ( $H_{03}$ ): Digital transformation has no significant impact on customer



satisfaction in the selected female-owned enterprises in the FCT is hereby rejected. This result is in line with Khin and Ho (2019), Kretschmer and Khashabi (2020), and Maiwald (2020), which emphasizes the influence of digital transformation on business performance.

## Conclusions

The influence of digitalisation on female enterprises was assessed with three concepts: digital orientations, digital capability and digital transformation. It was revealed that the effect of digital orientation on customer satisfaction in selected female-owned enterprises in Abuja is negative but not statistically significant. On the other hand, this research can also conclude that the impact of digital capability on customer satisfaction in selected female-owned enterprises in Abuja is positive and statistically significant. In other words, a unit increase in digital capability will cause 0.104 units increase in customer satisfaction, all things being equal. Finally, this research established the impact of digital transformation on customer satisfaction in selected female-owned enterprises in Abuja is positive and statistically significant. That is to say, a unit rise in digital transformation will cause 0.299 units to increase in customer satisfaction, all things being equal. It, therefore, implies that being aware of digitalisation is not enough to influence business performance but adopting and adapting to the new technology is the ultimate. Conclusively, this research establishes the requisite for female-owned enterprises to embrace and exploit the vast potential and significant role that digital technology plays in the enhancement of business performance, for improved strategic competitive advantage and economic development

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