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Effect of Digital Banking on Customers' Satisfaction in Nigerian Deposit Money Banks

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Abstract: *This paper aims to identify the determinants of risk disclosure. Also, this study discovers the moderating effect of family ownership (FO) in the link between the board characteristics (BC) (for instance. the board size, CEO duality, Independence director, and board expertise) and corporate risk disclosure (CRD) in the context of the Jordanian financial sector. This study will employ secondary data from the annual reports of Amman Stock Exchange (ASE) listed companies. The findings of this research are expected to drive in-depth understanding and further studies on this field from a theoretical and conceptual perspective. The study's results will have policy implications for government regulators in developing nations looking to enhance corporate governance codes (CGC) and establish risk disclosure laws to fulfil stakeholders' information needs. Furthermore, the research contributes to the existing body of literature on risk disclosure, especially in emerging markets where high levels of regulatory standard non-compliance exist. To the scholar's best knowledge, the current research is the first of its kind in the context of Jordan's financial sector, which explores the factors that influence corporate risk disclosure.*

Keyword: Jordan, Board of Characteristics, Corporate Risk Disclosure, Family Ownership

INTRODUCTION

Customers today experience accelerated digital lives, supported by rapid internet penetration, increase in smartphone adoption and expanded accessibility to wider networks. In this atmosphere, banks face a fundamental challenge on how to sustain and grow their business in the face of digital disruption and emergence of new customer demands. Studies indicate that close to 70% of banks worldwide do not have a systematic digital strategy to provide a seamless and positive customer experience which is crucial for both new customer acquisition and retention of existing customer base (Shrivas, 2020). Banks need to formulate and fine tune their digital strategies with the advent of this revolution. Digitalization is a global phenomenon which enables customers to quickly adopt digital banking and services as the new business paradigm. Existing players in the industry only have to quickly adopt and integrate this new reality or stand the risk of becoming obsolete (Broeders & Khanna, 2015). Banks historically have leveraged on technology to improve their efficiency and service offering to its customers, however rapid development and innovation in payment systems, customer interaction channels and communicate media have resulted in much wider implications on how banks engage customers (Cuesta, Macarena, David & Pablo, 2015).

In addition, most banks in general commenced their digital journey at the turn of the century and have overcome many hurdles in the last couple of decades. However, the advent of technological advancement spurred a myriad of challenges for banks as more customers use mobile phones and tablets to perform banking transactions, to increase the demand for omni-channel experience and mobile experience. Requirement for banks to change is further accelerated due to compliance demands (Vater, Cho & Sidebottom, 2012). Rapid development of digital economy is propelling rise of innovation, competitiveness and growth opportunities within the financial industry. Advancement and adoption of digital technologies and integration into business models is key for banks to achieve greater scale, penetrate new markets swiftly, thorough understanding of customers' needs which leads to higher profitability, scalability and thereby customers satisfaction (Peppers & Rogers, 2016).

Due to rapid technological advancement and market competition service quality becomes an increasingly important issue. An understanding of service quality issues becomes very important to satisfy customers. Information and communication applications are of paramount concerns to the banks in today's business environment. Digital banking has therefore become a major platform for all financial, banking and commercial service to their customers with advanced software technology. The availability of several digital banking packages in various countries has greatly improved the quality and convenience of service delivery globally. However, researchers have stated that users' satisfaction is an essential determinant of success of the digital-based delivery channels (Tong, 2009; Choudary, 2013)

There are divergent views on what factors influence customer satisfaction in service industry like banks in the digital era (Widya., Katz., Dapp., Graupner., Melcher., Demers., Weill & Woerner, 2014; Amin, 2016; Massilamany, & Nadarajan, 2017). The deployment of various technological tools are primarily geared towards enhancing customers' benefits and satisfaction. In developed economy, the effect of digitalization in banking industry on customers' satisfaction is measured through customer loyalty. Customer loyalty is noted to be a controversial issue in banking sector. Service failure, ineffectiveness in service delivery and staff attitude have compelled customers to shift their patronage to more than one bank. It is not distance that determine loyalty, but quality of service delivery. In Nigeria context, customers complain through various outlets including media to express their experience and unpleasant responses from their banks to issues of electronic banking transaction. Further study on the influence of digital banking is therefore considered necessary to determine how customer's loyalty affects customer's satisfaction. This study thus examines the effect of digital banking on customers satisfaction in Nigerian Deposit money banks by asking the following questions:

i) What is the effects of digital banking on customers' service quality in Nigerian deposit money banks?
ii) How has digital banking contributed to customers' loyalty in Nigerian deposit money banks?

Accordingly, the following hypothesises are tested to ascertain the significance of effect among the variables:

i. Digital banking does not have any significant effect on customer's service quality in Nigerian deposit money banks.
ii. There is no significant effect of digital banking on customer's loyalty in Nigerian deposit money banks.

LITERATURE REVIEW

Conceptual Review

Digital Banking

Digitalization is a global phenomenon which enables customers to quickly adopt digital banking and services as the new business paradigm. Existing players in the industry only have to quickly adopt and integrate this new reality or stand the risk of becoming obsolete (Broeders & Khanna, 2015). Banks historically have leveraged on technology to improve their efficiency and service offering to its customers, however rapid development and innovation in payment systems, customer interaction channels and communicate media have resulted in much wider implications on how banks engage customers (Cuesta., Ruesta, Tuesta, and Urbiola. 2015). Most banks in general commenced their digital journey at the turn of the century and have overcome many hurdles in the last couple of decades.

However, the advent of technological advancement spur a myriad of challenges for banks as more customers use mobile phones and tablets to perform banking transactions, increase in demand for omni-channel experience and mobile experience. Requirement for banks to change is further accelerated due to compliance demands; especially post the 2008 financial meltdown (Vater, Cho & Sidebottom, 2012). Rapid development of digital economy is propelling rise of innovation, competitiveness and growth opportunities within the financial industry. Advancement and adoption of digital technologies and integration into business models is key for banks to achieve greater scale, penetrate new markets swiftly, thorough understanding of customers' needs which leads to higher profitability and scalability (Peppers & Rogers, 2016).

Rogers (2016) argues that we are in the age of the customer, where there is a fundamental need for banks to reinvent their strategies or be forgotten. This requires top management of banks to make bold decisions in the next few years to overcome the threats and leverage of opportunities brought in by digitalization. Further argument is that digitalization would transform the existing banking ecosystem where existing banking products and services will be highly commoditized with digitalization becoming a key differentiator for banks to stay relevant in ensuring customers' financial well-being.

Also, Muluka., Kidombo, Munyolo, & Oteki, 2015 argues that the introduction of banking technology has been to reduce distribution costs; digital banking has allowed consumers the ability to handle their banking without having to physically step into a bank and have to deal with a bank teller, (Bauer., Hammerschmidt & Falk 2005) says that the increase in competition in the banking sector has led to various banks looking for differentiators, unique selling points to set them apart; innovation has allowed for that platform to exist in the banking industry. We square measure coming into a replacement era of innovation that may reshape consumers' relationships with their banks. However, banking can evolve within the digital age; it's vital to grasp its basic premise. Whereas cheap folks will disagree concerning nuances, at heart, the art of banking is one amongst skillful record keeping within the double-entry ledger.

Customer Satisfaction

The satisfaction is yet another important trait which must be taken in to account when shaping the overall loyalty of the customers towards their service providers. In banks, the customers ask themselves about the level of the services and decide about the lack of importance given to them and decide about repurchase behavior after using the services. The level of satisfaction is always high when the customer gives minimum price and gets maximum of usage and profit (Jamal & Kamal, 2004). Dissatisfaction usually occurs when the pricing issues are not suiting the needs of the customers. In banking industry also, the interest rates on loans and charges on the usage of online services such as ATM machines and the processing fee is a major bone of contention between the bank and its customers. If the customer thinks that the charges are more than the needs he churns. The customer initially tries to compromise with the bank but at a certain point he decides to defect. Nowadays, it has become too easy to open an account in any other bank so the switching cost is also minimal. These all factors help customers to switch from the current bank. The response of customer plays a pivot role in the overall satisfaction graph of the provider. If a customer is satisfied, the loyalty injects automatically and the customer remains with the current providers for a longer and longer period of time (Giese & Cote, 2000).

Customer Loyalty

Many studies have acknowledged the significance of loyalty in the electronic circumstances and have analyzed in detail, (Reichheld & Schefter, 2000), customer loyalty has been defined as a deeply held responsibility to repurchase a preferred service constantly in the future, thereby causing repetitive same-brand or same brand-set purchasing, regardless situational effects and marketing efforts having the potential to cause changing behavior (Oliver,1999).

Also, the conventional views on loyalty focuses on repeat purchase behavior and it can be segmented into four categories (Brown, 1953) which are undivided loyalty, divided loyalty, unstable loyalty and no loyalty. Loyalty is the degree of probability for a customer to repurchase a product or service from a company (Lipstein, 1959). Engel, Roger and Blackwell (1982) defined loyalty as “the customer’s preferential, attitudinal and behavioral response towards a brand in a particular category over a period of time”. Loyalty is a form of favoritism towards a brand that is resultant for consistent purchasing by the customer over a period of time. Engel., Roger and Blackwell (1982) were further supported by Keller (1993) suggesting loyalty exists where favorable attitude for a brand is translated via repetitive purchase.

Service Quality

In online environments, service quality is defined as a website make possible efficient and effective shopping, purchasing and transport of product and services (Zeithaml., Parasuraman & Malhotra, 2002). Santos (2003) suggests that e-service quality in terms of entire customer estimations and conception regarding the superiority and the quality of e-service transport in the virtual marketplace. A study by Parasuraman, Zeithaml and Malhotra (2005) resulted in the development of a service quality scale, the e-SQ scale, including of seven proportions: efficiency, system availability, fulfillment, privacy, responsiveness, compensation and contact but it is slightly different from the e-SQ scale developed by Zeithaml., Parasuraman and Malhotra, (2005) which has 11 proportions. Furthermore, many other researchers developed a service quality scale (Ribbink, Van Riel, Liljander & Streukens, 2004; Cristobal, Flavian and Guinaliu, 2007). Zahorik and Rust (1992) state that modelling observed quality as an effecting factor of customer loyalty will provide remarkable recognition to any framework that includes customer loyalty as a dependent construct. Previous research has also confirmed that a relationship between observed quality and customer loyalty is positive (Cronin and Taylor, 1992, Harrison-Walker, 2001).

Theoretical Framework

The underpinning theories for this study are Innovation Diffusion Theory (IDT) and Assimilation theory which is based on Festinger’s (1962) dissonance theory. Describe the mechanisms of how new inventions, which in the context of this study is digital banking and digital wallets, is adopted and becomes successful and how customers seek to avoid dissonance by adjusting perceptions about a given product to bring it more in line with expectations. Customers can also reduce the tension resulting from a discrepancy between expectations and product performance either by distorting expectations so that they coincide with perceived product performance or by raising the level of satisfaction by minimizing the relative importance of the disconfirmation experienced. Thus, this theory succinctly captures the essence of this study and this accounts for why the study is anchored on Diffusion Innovation Theory.

Empirical Review

Das and Ravi (2021) intended to find the Impact of E-Banking Service Quality on Customer Satisfaction and the service quality dimensions and measure the impact of each factor such as reliability, security &privacy, website design, and responsiveness & communication, which affects customer satisfaction. Primary data was collected through an online questionnaire. A total of 149 responses to the questionnaires were collected. Correlation, Regression, ANOVA & Weighted average tests are used for data analysis.

This study offers several recommendations about which service quality dimension needs to improve to make customers satisfy with E-banking services.

Mohan., Kumar and Rao (2021) investigated factors influencing customers' impression of digital banking services, satisfaction and preference. A survey of 100 digital banking customers using percentage and factor analysis was done after constructing a structured questionnaire. The results show that people of all ages prefer digital banking to traditional. Customers use cell phones to complete digital banking. These customers are pleased with digital banking services because they are convenient and widespread.

Zouari and Zouari (2021) examined the impact of digitalization as a service quality dimension, on customer satisfaction. Two dimensions, i.e., digitalization and compliance, are added to the existing SERVQUAL model of five dimensions. Results are drawn from a self-completed survey of a convenience sample of 145 Tunisian Islamic bank customers for the year 2018. Factor analysis and regression analysis are used to determine factor structure and determine the impact of service quality dimensions, especially digitalization, on customer satisfaction in Islamic banking. The factor analysis extracted five dimensions of service quality, i.e., confidence, compliance, digitalization, tangibles, and human skills. The study revealed a positive and significant relationship between the main dimensions of customer service quality and customer satisfaction, except for tangibles.

Rajeshwaran (2020) examined how service quality of digital banking influence on customer satisfaction of commercial banks in Eastern Province in order to establish whether service quality and customer satisfaction of digital banking of commercial banks varies with demographic factors of the users in the province. Descriptive statistics, correlation, multiple regression, independent sample t-test and one way ANOVA are used to analyze the data. Results of the study revealed that digital banking service quality effect on customer satisfaction are at higher level. Also, it is found that digital banking service quality dimensions namely efficiency, responsiveness, fulfillment, privacy and system availability are positively influenced on customer satisfaction.

Singh (2019) measured the e-service quality of internet banking and the relationship with customer satisfaction in India. This study aims to explore the critical factors of e-service quality of internet banking in India and to measure the customers' satisfaction of internet banking on the identified e-service quality dimensions. A survey method was carried out to acquire data from 650 respondents from India. The study thus found that there is a positive relationship exists between e-service quality dimensions and customer satisfaction of internet banking.

Uwalaka and Eze (2020) investigated the effect of mobile banking on customers' satisfaction in selected commercial banks in Anambra State. Specifically, the study examined the effect of security of mobile banking service, mobile banking technology proficiency, ease of use, responsiveness of mobile banking application on customer satisfaction. Four hypotheses were formulated for the study. The study found that responsiveness of mobile making application has significant effect on customer's satisfaction. The study also found that ease of product use has significant effect on customer's satisfaction. Finally, the study found that security of mobile banking has significant effect on customer's satisfaction. The study concludes that mobile banking has significant effect on customer satisfaction in selected commercial banks in South East Nigeria.

Farouk and Saheed (2018) focused their study in Kaduna state by investigating the impact of electronic banking on customers' satisfaction with the application of both quantitative and qualitative methods. It was discovered from the study that electronic banking services and electronic banking products have a significant positive impact on the satisfaction of the customers of the banks in Kaduna State, Nigeria.

Oni (2019) focused on the effect of digital banking on customer satisfaction with the specific objectives being to establish the extent to which speed of transaction and adaptability of digital banking influences Customer Satisfaction within the Federal Capital Territory, Nigeria. Consequently, two hypotheses were raised and to be tested at $p<0.05$. The data generated was analyzed using both descriptive and inferential statistic. The inferential statistic employed in this study includes SEMPLS path modelling, regression and correlation.

Raji., Zamen and Abdulwakil (2021) investigated the effect of electronic banking on customer satisfaction in Nigeria's banking industry, specifically, in Kwara State. The study used security, reliability, ease to use and user-friendly, transactional speed, responsiveness as the independent variables while customer satisfaction as the dependent variable. The correlation result shows a positive correlation between all the independent variables and customer satisfaction. Similarly, the regression result shows that security, transactional speed, ease to use, reliability, and responsiveness have a positive and significant impact on customer satisfaction.

Adegoriola., Jimoh and Oladele(2021) assessed the effect of electronic banking service quality on customer satisfaction in United Bank for Africa (UBA) PLC in Abuja Municipal Area Council, FCT-Abuja. Three platforms of electronic banking services were used. They are internet banking, automated teller machine availability and mobile banking. The population of the study was one hundred and ten thousand, five hundred customers across the branches in Abuja Municipal Area Council of FCT-Abuja. The findings from the study revealed that there is positive and significant relationship between electronic banking service quality and customer satisfaction in United Bank for Africa.

Gomachab and Maseke (2018) carried out a study on the impact of mobile banking on customer satisfaction in commercial banks of Namibia. In this study, accuracy of transaction, security and trust, convenience, system availability, responsiveness, usefulness, transaction speed, reliability of service and cost were employed as the explanatory variable while customer satisfaction was employed as the dependent variable. Descriptive statistics was employed in analyzing the data. The results revealed that the most frequently used service is airtime purchases and the least frequently used service is the allocation of funds and that mobile banking services in the Keetmanshoop banking sector has an overall satisfaction rate of 75% is reliable, convenient, cost effective, available on different mobile networks, advertisements are encouraging, service is compatible with mobile devices, income (social aspect of transacting) of respondents influences the usability of mobile banking and mobile banking services are more secure than branch based services.

METHODOLOGY

The study adopted survey design in obtaining data needed for this study. Given that the study focused on digital banking as stimulant of customer satisfaction in Nigeria deposit money banks, the survey method is considered appropriate to realize the goal of the research exercise. More so, studies on digital banking which have made use of survey design include; Uwalaka and Eze (2020), Idowu and Fadiya (2015), Nimako., Nana, and Wandaogou (2013),

The population of study in this research consist of customers of the selected banks i.e GTbank, Zenith bank, First bank Access bank, UBA and Wema bank. Moreover, the study made use of purposive sampling technique. Purposive sampling is adjudged most suitable because respondents were selected to take part in the study must met the following criteria: Possession of minimum of O'level certificate; they have used digital banking platform for the past one year; and they have attained the age of 16years and above

Also, the determination of the sample size is made feasible by statistical formula using Taro Yamane's formula (1964). This formula considers application of normal approximation with 5% error tolerance and 95% confidence level. (Shaibu, 2014)

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

Where n = sample size
N = Population
1 = Constant
e = Limit of error term = 0.05

Using the above formula, the following sample sizes were obtained from each of the selected banks: GTbank = 470; Access bank = 471, Zenith bank = 470, First bank = 472; UBA bank = 473; Wema bank = 472; Total = 2,828.

A self-administered questionnaire was developed and used to collect primary data. The questionnaire comprised of two sections A and B. Section A was data on the profile of the respondent, while section B, C, D and E relate to the study objectives in order to generate information on people's attitude and opinions on the effect of digital banking as independent variable on customer satisfaction levels. The questionnaires questions were generated from the objectives of the study

In order to evaluate the stimulating effect of digital banking on customers' satisfaction this study adopted the regression model specified by Umbas (2017) when he investigated the direct and indirect effects of internet banking quality as well as customer value on customer satisfaction. The model was consequently adapted to suit the purpose of this study. Hence, the functional model for this study is specified thus:

CUS = *f*(DB)……………………………………………………(3.1)
Where: CUS = customers' satisfaction and DB = digital banking.

Objective 1: To assess the effect of digital banking on customer's service quality in Nigeria deposit money banks. The econometric model of this relationship is given by:

CSQ = β0+ β1DB+ ut………………………………………… (3.2)

Objective 2: To evaluate the effects of digital banking on customer's loyalty in Nigeria deposit money banks. The econometric model of this relationship is given by:

CUL= β0 + β1DB + ut……………………… (3.3)

Where: CSQ = customer service quality; DB = digital banking speed; CUL= customers' loyalty; β0 = regression constant; β1 = regression coefficients of the digital banking.

The sourced data were analyzed using descriptive analysis through calculation of mean scores and standard deviation, proportions and frequency distribution tables. Regression analysis technique was also employed to analyze relationships among the variables.

RESULTS AND DISCUSSION

This section presents the results and discussion of the data analysis in this study.

Table1a: Frequency Distribution of the effect of Digital Banking on Customer Service Quality in Nigeria

		Response in Percentage (%)					
Statement	N	SA=6	A=5	PA=4	PD=3	D=2	SD=1
The use of digital banking makes my transactions very fast	2828	57.1	42.9	0	0	0	0
The usage of digital banking saves time	2828	85.7	0	14.3	0	0	0
Customer experience with digital banking when it comes to service delivery is satisfactory.	2828	42.9	42.9	14.2	0	0	0
Standard customer service delivery in digital banking is consistent.	2828	28.6	42.9	28.5	0	0	0
The reliability of service delivery influences the loyalty to digital banking.	2828	42.9	57.1	0	0	0	0
The service quality received through the digital banking is high	2828	28.6	71.4	0	0	0	0
The digital banking applications have a good user interface	2828	28.6	71.4	0	0	0	0
Banks makes information easily available to customers through its digital banking	2828	28.6	28.6	28.6	14.3	0	0
The digital facilities are frequently updated in response to customers demand	2828	14.3	57.1	28.6	0	0	0

Source: Field Survey, 2022

Table 1b: Descriptive Statistics measuring the effect of Digital Banking on Customer Service Quality in Nigeria

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
The use of digital banking makes my transactions very fast	2828	5	6	5.57	0.495	-0.289
The usage of digital banking saves time	2828	4	6	5.71	0.700	-2.042
Customer experience with digital banking when it	2828	4	6	5.29	0.700	-0.460

comes to service delivery is satisfactory.						
Standard customer service delivery in digital banking is consistent.	2828	4	6	5.00	0.756	-0.001
The reliability of service delivery influences the loyalty to digital banking.	2828	5	6	5.43	0.495	0.289
The service quality received through the digital banking is high	2828	5	6	5.29	0.452	0.949
The digital banking applications have a good user interface	2828	5	6	5.29	0.452	0.949
Banks makes information easily available to customers through its digital banking	2828	3	6	4.71	1.030	-0.192
The digital facilities are frequently updated in response to customers demand	2828	2828	4	6	4.86	0.639

Source: Field Survey, 2022

Table 1a shows the frequencies of the answers given to the various questions asked to assess the speed of digital banking as stimulant for achieving customers' satisfaction in Nigerian deposit money banks while on Table 1b, the descriptive statistics of the obtained responses are presented. Since the customers have earlier indicated that they used digital banking frequently, then they were asked if they experienced faster transaction processing by using digital banking. To this question, about 57.1% of the total respondents strongly agreed with this question while 42.9% merely agreed with it. The responses to this question thus mean that all the surveyed respondents agreed that the deployment of digital banking channels brings about faster transaction processing. If this is the case, the respondents must have preferred using digital banking than physical banking due to satisfaction derived from it. Furthermore, the mean value of the answers to this question is 5.57, which is within its minimum and the maximum obtainable values while its standard deviation value which is 0.495 connotes low risk and that the responses obtained cluster around their mean value. The responses are negatively skewed at -0.289 and implies that the distribution has long left tail and more of lower values than the sample means.

In addition, respondent customers were asked if the use of digital banking saved their time. To this question, answers were split between strongly agree with 85.5% and partially agree with 14.3% . Hence, it can be safely concluded that all the respondent customers agreed that their time was saved by using digital banking to process their transactions. Time saving potential associated with the speed of digital banking can therefore improve the quality of services provided to customers by the banks. The foregoing result is supported by the mean value of 5.71 and a standard deviation from the mean value of about 0.700, suggesting low risk or error in the obtained responses to this question. The distributions of the answers are also negatively skewed with long left tail and more of values lower than the sample mean value. Also, the respondent customers were asked whether their experience with the speed of digital banking when it comes to service delivery was satisfied. In the responses obtained to this question, about 42.9% of the respondent agreed and strongly agreed respectively that they were satisfied with the speed of the digital banking with respect customer service delivery while about 14.2% of the respondent customers partially agreed. With this response, it is obvious that the all the surveyed customers were satisfied with the speed at which digital banking are used to delivered customers service to them. The mean value of the responses to this question is 5.29 and the standard deviation from the mean value of 0.700 implies that the answers to this question are not far from their mean value and thus suggest very low risk of error in the obtained responses.

When asked if the standard of customer service delivery is consistent and influenced by digital banking, around 28.6% of the total respondent customers strongly agreed and affirmed that the standard of customer service quality provided using digital banking is consistent; 42.9% of the respondents merely agreed this question while 28.5% agreed partially with this question. By the distributions of these responses, there is no dissenting view to the fact that there is consistency in the provision of customer service using digital banking channels in the Nigerian deposit money banks. The mean answer to this question which is 5.00 lies within the obtainable minimum and maximum values with a low standard deviation of 0.759 which implies low margin of errors in the distributions of the responses. The distribution has left long tail with negative skewness of -0.001. The respondent customers were further asked if the speed of digital banking influences high customer service quality in the Nigerian deposit money banks while answering this question, the respondents which are about 42.9% of the total respondents agreed strongly while 57.1% agree that due to the inherent speed of digital banking, high customer service quality was facilitated in the Nigerian deposit money banks. This implies that all the respondents affirmed the virility of the digital banking to promote high quality customer services. This finding is supported by mean of 5.43 and the accompanying standard deviation which o.495 is suggestive of low error inherent in the distribution of the responses. The skewness value which 0.289 mirror normal distribution and indicates that the distribution of symmetrical around its mean value.

To measure the magnitude of service quality received by the respondent customers, they were asked to confirm if the quality of service provided to them via digital banking was high. Hence, all the respondent customers, divided between strongly agree (28.6%) and agree (71.4%) rated the service quality received via digital banking as high. Supporting the foregoing is the mean of the distribution which is 5.29 and low standard deviation of 0.452. Also, the skewness of the distribution is normal and symmetrical around its mean value. Furthermore, asking whether the digital banking channel used by the respondent customers have good user-interface that enhances customer service quality. To this, about 28.6% of the respondents strongly agreed while 71.4% agree that the user interface of their digital banking applications. Thus, none of the respondents have reservations about the fact that their digital banking applications have a good user interface that enhances high quality customer service. The mean of thus distribution is also 5.29 with 0.452 standard deviation from the mean while the skewness of the distribution is 0.949, suggesting normal distribution of the responses obtained.

About the speed at which deposit money banks make information available to their customers via digital banking channels, the respondent customers in tune of 85.8% agreed that information were usually made available to them speedily by the DMBs using their digital banking channels while about 14.3% of the respondents partially disagreed. With this result, it can be believed that digital banking facilitates speedy delivery of necessary information to the customers in Nigeria deposit money banks. This corroborated by the mean value of 4.71 and the deviation from the mean value 1.030. The skewness of this distribution is negative and non-symmetrical around their mean value. To understand the currency of the digital banking applications being used to serve respondent customers by the banks, thereby determining its speed of service delivery, the respondents if the banks update their digital banking facilities frequently. The responses to this question show that those strongly agreed were 14.3% while 57.1% and 28.6% belong to agree and partially agree respondents respectively. Thus, by implications, all the surveyed bank customers agreed that they were always served with updated digital banking channels as demanded by them.

Inferential Statistics Results

To further examine the effect of digital banking in stimulating customers' satisfaction in the Nigerian deposit money banks, the study employed inferential statistical technique by specifying regression model to express the relationship between digital banking (DB) and customers' service quality (CSQ) and the result is displayed on Table 1c

Table 1c: Summary of Regression Result (Effect of Digital banking on customers' service quality in Nigerian DMBs)

Predictor Variables	Coefficient	Std. Error	t-Statistic	Prob.
DB	0.645	0.009	44.929	0.000
C	3.083	0.049	62.356	
Statistics:				
R2	0.417			
Adj. R2	0.416			
F-stat.	2018.57			
Multiple R.	0.65			
Durbin-Watson Stat	2.004			
Standard Error of the Estimate	0.345			

Source: Authors Computation, 2022

From Table 1c, the regression line of best fit between digital banking speed (DB) and customers' service quality (CSQ) can be stated thus:

CSQ = 3.083 + 0.645DB…………………………Eq(4.1)

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The above equation thus means that there was a positive relationship between customer service quality and digital banking, such that if there was a change in DB by 1%, there would be about 64.5% change in customer service quality in the Nigerian deposit money banks; in other words, an increase in DB by 1% was associated with about 64.5% increase in the service quality made available to the customers of the Nigerian deposit money banks and vice versa. This result corroborates the reposted outcome under descriptive statistics in which about all the respondents agreed that the use of digital banking makes their transaction very fast; and affirms the overwhelming acceptance by the respondents that their experience with digital banking in terms of service delivery was satisfactory. This result is further consolidated by the coefficient of correlation between the DB and CSQ which 0.645, thereby connoting that there was a strong positive relationship between digital banking and the service quality rendered to the customers of the Nigerian deposit money banks via digital banking. The R^2 value of the regression estimates is according to Table 1c is 0.417; this means that about 42% of the changes in the customer service quality in the Nigerian deposit money banks was explained by the digital banking while the remaining 58% was explained by other factors not captured in the estimated model. The consistency of the estimated model is further confirmed by the adjusted-R^2 value which was not different from the R^2 value. The f-statistics value of 2018.57 indicates a robust performance in the overall estimated model and indicates that the proportion of change in the CSQ which the DB was responsible for was very true.

Digital Banking and Customer's Loyalty in Nigerian Deposit Money Banks

To further understand if there is an association between digital banking and customer's satisfaction, the study surveyed the respondent customers with questions bothering on the reliability of the digital banking as it affects the loyalty of the customers in the Nigerian deposit money banks. The frequency of the responses obtained are contained on Table 2a while the associated descriptive statistical scores are contained on Table 2b.

Table 2a: Frequency distribution of the effect of digital banking on customer loyalty in Nigerian deposit money banks

		Response in Percentage (%)					
Statement	N	SA=6	A=5	PA=4	PD=3	D=2	SD=1
The use of Digital banking minimize errors in transactions	2828	0	71.5	14.3	14.3	0	0
The use of Digital banking is very reliable	2828	28.6	28.6	14.3	28.6	0	0
Banks customer perform their transactions right the first time	2828	14.5	42.9	42.6	0	0	0
Website downtime is not experienced in digital banking	2828	0	42.9	0	42.8	14.3	0
The digital service platform always offers correct outcomes	2828	28.6	42.9	28.6	0	0	0
Customers always experience accurate digital records keeping and updates	2828	14.3	28.6	28.6	28.6	0	0
Digital banking always present accurate information	2828	57.1	14.3	28.6	0	0	0
Loyalty can be enhanced through availability of digital banking	2828	28.6	57.1	14.3	0	0	0
Commitment to a bank can be guaranteed by effective digital banking	2828	14.3	42.9	14.4	28.4	0	0
Efficiency of digital platform enhance loyalty rather than variation in service cost	2828	42.9	28.7	0	0	0	28.4
Digital banking largely determines customer's	2828	14.3	28.6	14.3	14.3	0	28.6

patronage of deposit money banks							

Source: Field Survey, 2022

Table 2b: Descriptive Statistics measuring the effect of digital banking on customer loyalty in Nigerian deposit money banks

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
The use of Digital banking minimize errors in transactions	2828	3	5	4.57	0.728	-1.362
The use of Digital banking is very reliable	2828	3	6	4.57	1.178	-0.171
Banks customer perform their transactions right the first time	2828	4	6	4.72	0.701	0.453
Website downtime is not experienced in digital banking	2828	2	5	3.71	1.161	0.021
The digital service platform always offer correct outcomes	2828	4	6	5.00	0.756	0.000
Customers always experience accurate digital records keeping and updates	2828	3	6	4.29	1.030	0.192
Digital banking always present accurate information	2828	4	6	5.29	0.881	-0.589
Loyalty can be enhanced through availability of digital banking	2828	4	6	5.14	0.639	-0.134
Commitment to a bank can be guaranteed by effective digital banking	2828	3	6	4.43	1.049	-0.183
Efficiency of digital platform enhance loyalty rather than variation in service cost		2	6	4.58	1.676	-0.765
Digital banking largely determines customer’s patronage of deposit money banks		2	6	3.86	1.457	-0.028

Source: Field Survey, 2022

From Table 2a, customers were asked to indicate whether errors are minimized as a result of using digital banking. Hence, about 85.7% of the respondents indicated that digital banking helps to minimize errors in the transactions they make. However, there are about 14.3% of the survey respondents who disagreed with this question. This implies that most of the customers of deposit money banks agreed that digital banking helps to minimize errors, and by extension, enhances their reliability of the digital banking. The mean score of this response is 4.57 with low risk of error at 0.728. The implication of this is that the distribution the responses obtained to this question cluster around their mean score. Asking the respondents if they believe digital banking to be reliable, about 71.4% of the respondents agreed that digital banking from their experience is very reliable and this must have accounted for why the majority of the surveyed respondents confirmed earlier on that they used digital banking frequently to execute their transactions. Answers obtained here produced a mean score 4.57 and a standard deviation from the means score is 1.178. The skewness is score implies that the distribution of the responses is negative skewed. A further question asked about the reliability of digital banking was on whether the customer usually go through with their transactions right from the first attempt. With no disagreement, all the respondents confirmed that in most cases, they started and completed their transactions with digital banking right from the first attempt. This result connotes the surveyed customers see digital banking as reliable and consistent for use any time they need it.

From Table 2b, the mean score to this question is 4.72 with a standard deviation of 0.701 which confirms that the distribution of the obtained responses are closely tied to their mean score. On whether website downtime is experienced in digital banking, Table 2a reveals that only 42.9% of the total respondent affirmed that downtime in website was experienced while using digital banking while about 57.1% disagreed and hence, indicated that they experienced website downtime in the usage of their digital banking channels. The mean score of this answer is 3.71 with positive skewness and standard deviation of 1.16. On the accuracy of the record keeping and updates by the digital banking used by the respondents, they 71.4% actually confirmed that records keeping and updates by the digital banking are accurate while about 28.6% of these respondents believed otherwise. It can therefore be established by this result digital banking is reliable and can therefore facilitates loyalty of customers to their digital banking brands because of the satisfaction derived from the regular updates and accuracy of their records. The mean score obtained here is 2.29 which is within the minimum and the maximum obtainable value, with a positively skewed distribution value of 0.192.

On whether the loyalty of the customers could be enhanced with the use of available digital banking, all the respondents agreed that with available digital banking, their loyalty to a bank could be influenced. The implication of this is that if a well-functioning digital banking channels are deployed by a bank, customers can decide to remain with such bank so as to continue to remain satisfied in the course of accessing banking services. The responses to this question has a mean score value of 5.14, and a standard deviation value of 0.639, thereby lending credibility to the obtained responses. With respect to whether the efficiency of digital banking platform, rather than differences in service cost can spur customers loyalty, about 80.6% of the surveyed respondents agreed that with efficiently functioning digital banking, their loyalty could be triggered to a particular bank and not withstanding of the variation the cost of accessing the digital banking services; however, the remaining 28.4% of the surveyed respondents strongly disagreed with this question and rejected the fact that their loyalty could be spurred by efficiency of digital banking deployed by the deposit money banks rather than variation in the cost of accessing services. This result came with a mean score point of 4.58, a negatively skewed response distribution and a low risk of standard deviation of about 1.6.the study further asked the respondent bank customers digital banking largely determines their patronage of the deposit money banks. To this question, about 57.2% agreed that availability of digital banking is a determinant of their patronage of any of the deposit money banks in Nigeria; nevertheless, about 42.8% of the respondent customers disagreed, thereby implied that their patronage of deposit money banks is indifferent of the digital banking deployed. With a mean score of 3.86, which is within the minimum and maximum values obtainable and a not too high standard deviation of about 1.45, the distribution of the respondent responses were clustered around the average score point.

4.3.3.1 Inferential Statistics Results

The estimated regression output of the relationship between digital banking's reliability (DBR) and customers' loyalty (CUL) in the Nigerian deposit money banks is displayed on Table 4.9c

Table 4.9c: Summary of Regression Result (Effect of Digital banking on customers' loyalty in Nigerian DMBs)

Predictor Variables	Coefficient	Std. Error	t-Statistic	Prob.
DB	0.917	0.011	122.091	0.000
C	-1.386	0.05	-27.480	
Statistics:				
R2	0.841			
Adj. R2	0.841			
F-stat.	14906.3			
Multiple R.	0.917			
Durbin-Watson Stat	1.98			
Standard Error of the Estimate	0.669			

Source: Authors Computation, 2022

The best line of fit of the estimated regression between digital banking (DB) and customers' loyalty (CUL) is stated from Table 4.9c thus:

CUL= -1.386 + 0.917DB………………………Eq(4.3)

The relationship expressed by the above equation connotes that the effect of digital banking on customers' loyalty is positive, to the extent should the deployment of digital banking be increased by 1%, it would culminate into about 92% increase in customers' loyalty in Nigerian deposit money banks. Furthermore, the correlation coefficient, which is 0.92 implies that the degree of relationship between DB and CUL is also positive and strong. The significant effect revealed here also confirms the result reported under the descriptive statistics when the respondents were asked if the digital banking were reliable and about 71.4% of the respondents confirmed the reliability of the digital banking. Moreover, the result obtained here also confirms the reported result earlier on where all the respondent customers agreed that the digital banking platforms always provides correct transaction outcome while about 71.6% of the surveyed respondents agreed that the efficiency of digital banking platform enhances loyalty rather than the variation in the cost of service. The R2 value from Table 4.9c is 0.84, which means that digital banking (DB) was able to predict customers' loyalty (CUL) to the tune of 84% in the estimated regression model. The robustness and effectiveness of this prediction is further confirmed by the f-statistics value of 14906 with highly significant p-value. The standard error of the regression estimates is also low and suggests that the estimates are reliable for inference making on the relationship between digital banking and customers' loyalty in the Nigerian deposit money banks.

CONCLUSION AND RECOMMENDATIONS

This study examined the effect of digital banking on customer's satisfaction in Nigerian deposit money banks. In todays' sporadic technological revolution across the globe, especially with the latest development in the Nigerian banking sector, in which the Central Bank of Nigeria issued the revised cash withdrawal limit to the Nigerian deposit money banks, the increasing reliance on the use of digital banking is sacrosanct. Thus, this has made research of this kind apt and timeously worthy; especially when the existing studies have not actually looked at how digital channels affect the combined elements of customers' loyalty and service quality in the Nigerian deposit money banks. Hence, the study concluded based on the results obtained and the hypotheses tested at 0.05 significance level as follows: on the specific objectives, it is concluded that digital banking strongly stimulates customers service quality in the Nigerian deposit money banks; also, this study concludes that digital banking is a potent stimulant for achieving customers' loyalty. Above all, and based on the fact that p-values and the t-values for each of digital banking proxies with respect to customers' service quality and customer's loyalty were significant and positive, the study concludes generally that digital banking is a strong stimulant of customers' satisfaction in the Nigerian deposit money banks. Therefore, the Nigerian deposit money banks should ensure that the networks, with which they provide various digital banking services to customers remains strong enough to guarantee uninterrupted high speed whenever the customers are accessing banking services digitally. Furthermore, banks are enjoined to switch to advanced digital banking technology that can guarantee one off transaction success with little or no cases of transaction failure, ensure adequate maintenance of digital banking infrastructures, regularly load cash in the ATM points in a bid to further enhance digital banking's reliability and boost customers' continued patronage of their products and services.

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