

## Factors affecting the Consumer Willingness to use Digital Banking

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### ABSTRACT

This study aimed to explore factors influencing consumer willingness to use digital banking. Consumer willingness includes cost, security, and risk factors that impact customer willingness to use digital banking. The data was collected through a Self-administered questionnaire from a sample of  $N=200$  respondents. The inferential results of this study report that the convenience and security of digital banking are the two main factors that have a positive and significant impact on consumers' willingness to use digital banking. On the other hand, security concerns negatively affect consumer willingness. The main barrier that hinders the usage of online banking is security. Moreover, Online banking provides access to banking and advanced payment transactions at affordable cost, and customers pay less tax in digital banking than in the traditional banking system. Meanwhile, customers are satisfied with the overall quality of digital banking services at banks.

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### INTRODUCTION

According to Mbama & Ezepue (2018), customers' trust is a critical component of online banking. Digital banking is easy and cost-effective, attracting customers who do not want to go anywhere to perform financial transactions. Singh & Rana (2019) stated that recognizing factors that affect consumer willingness to use digital banking has shown to be a great subject among researchers in developing smooth digital banking. However, past studies have confirmed the importance of such services for customers and banking sectors, and the level of digital banking in Pakistan is shallow. The reasons behind this are security, convenience, and cost issues. The study by Singh & Rana (2019) reveals that banks are essential in all countries and significantly affect economic growth through efficient banking and finance. They have a community-saving risk system that they turn into investments. Mass immigration-related changes and financial-economic reforms affected the banks for over a decade. In response to these improvements, banks are expanding the number of services offered to consumers while growing the dependency on technology. Digital banking has improved the perceived nature of customer service and access to services. Digital banking has reached many sectors, including the banking system. According to Abbas et al. (2019), digital literacy is now essential in all fields of life, including the banking system.

Mostafa & Eneizan (2018) stated that digital banking has generated extreme economic pressures domestically and abroad in the era of globalization. Moreover, intelligent, sensible clients anticipate outstanding banking efficiency in the information era. Banks, as the primary financial companies in each country, play a significant role in money and financial markets. Moreover, it encourages and enables people to invest and raise small capital and bring these into service in development areas. Son et al. (2020) state that digital banking innovation has enhanced the service quality performance in the banking sector, which shows its significance. Further states that gone are the days when clients waited in line for utility bills, college fees, or other business transactions throughout the bank rooms. However, customers can do that at their convenience with their ATM cards or from the ease of their own home over the Internet. Besides, due to the massive development of the mobile phone industry, several banks have expressed interest in the available market and collaborated with suppliers of mobile phone networks that provide their clients with financial products. However, the studies of Szopiński (2016) states that online banking services are designed so that even a non-technical consumer can perform banking transactions from anywhere, anytime. The purpose of doing this is to create the ease of doing business effectively; for this reason, mobile applications are convenient to have and use. A study by Krisnanto (2018) points out that mobile phones have access to banking and automated payment transactions at an affordable cost. A positive aspect of mobile phones is that, at low cost, internet services can cover rural areas for both the user and the bank.

According to the study done by Bhatt & Bhatt (2016), in modern times, there is innovation in technology, and because of it, there is a good security plan for the customer who does online banking. However, in most cases, people lose much of their money because of hackers, who hack their accounts and transfer their money into their accounts, and even banks cannot help them. Moreover, at this time, banks are providing security to their customers by protecting their accounts. Furthermore, banks hire software engineers, and these people help people satisfy customers and do online transactions without any risk. According to Augusto & Torres (2018), digital banking offers the lowest fees. This can be done as online banks do not have the same cost level as conventional banks. If the bank is a worldwide element and mortar bank, the fees pay for the nationwide payroll expenses, advertisement fees, and handling fees. Zhang (2018) said that much of the cost for an online bank is non-existent or compensated for with specific sales, providing for fee reductions. Transactions can conveniently be funded via electronic transfer from a local bank account. Most direct banks, such as those destined for some outside banks, offer unlimited transfers at no cost. Banks allow direct transactions, such as pay deposits and automated bill pay.

ATM is the digital banking type that allows customers to withdraw their money through a debit card. ATMs are available anywhere at any time. However, customers often avoid being at the bank to collect money. The customer prefers to withdraw money from an ATM. According to Larsson and Viitaoja (2017), ATMs are more accessible, convenient, and take no time. Therefore, customers avoid banks because they must wait their turn to withdraw or deposit amounts. The mobile app is another type of digital banking. Every bank has introduced its mobile application—a fast version of digital banking. Therefore, within a snapshot, customers view their bank statement, remaining amount, and account number and can see another aspect of banking through mobile applications. The digital wallet is an updated version of the mobile application. A digital wallet is a tool that allows any customer in the world to withdraw or deposit an amount. A digital wallet is a global mode of money transactions. According to Von Behren and Wall (2016), customers cannot do money laundering because digital wallet money is not a physical form.

The study is based on identifying the factors that affect the willingness to use customer's digital banking in Pakistan. Moreover, I want to discover ways to expand it. This research includes the positive and negative impact of customers on digital banking. The researcher chose this topic because the studies on these variables are limited. However, very few studies researched past one of these factors (Szopiński, 2016). Therefore, this is the reason for selecting this study, which helps consumers do digital banking without threat. On the other hand, people avoid using digital banking because of misconceptions and a sense of insecurity due to the numerous issues facing the banking sector in Pakistan. This study aims to identify the factors (Convenience, Cost, Security, and Risk) affecting the willingness to use customers' digital banking. The researcher will explore the Internet to analyze the impact of this study. However, this research intends to get some answers concerning those four factors. Initially, it frequently focused on the convenience effects of customers' willingness to use digital banking. The research scope focuses more on marriage, cost, security, and risk effects of willingness to use customer digital banking. Moreover, in this study, the researcher adds theory regarding the influence of willingness, and the researcher analyzes the barriers that stop students from not doing digital banking.

This research facilitated the people of Pakistan and the banking sector. Firstly, it is essential to be aware of the public about digital banking and acknowledge the audience's significance. Secondly, it enhances the service quality, which helps both the banking sector and the customer; on the other hand, it also reduces the barriers, ultimately creating ease of doing business at a low cost. Thirdly, it gives customers a sense of security. This research clears everything and creates a path for the banking sectors to make the procedure easier. Finally, the online transaction procedure contains zero threats, which may increase the use of digital banking. Overall, this research may help the public and banking sectors.

## **LITERATURE REVIEW, FRAMEWORK AND HYPOTHESES**

### **Theoretical background (Theory of Planned Behaviour)**

The Theory of Planned Behaviour (TPB) was suggested as the Theory of Reasoned Action in 1980 to explain a consumer intending to interact with a specific behavior at a particular place and time. The theory is conducted to describe the behavior in which the customer tends to utilize self-control. The critical element of the theory is intent, which consumers extort. However, such intent behavior of the customer is influenced by the prospect's willingness that the behavior would have the predicted result and the subjective assessment of the risks and benefits of that outcome.

### **Digital banking**

In this contemporary era, transactions are made online through digitization. Digital banking is at its peak in the modern era. It is more convenient and accessible enough. However, such services have not existed in the past (Larsson & Viitaoja, 2017). Therefore, customers followed all the protocols and guidelines. Due to this, the transaction process takes much time, which is outdated in the modern world. Thus, online transactions are easy to do in today's world. According to Larsson & Viitaoja, (2017), 44 percent of Generation Z consumers antedate complementing outdated

banking services with explanations as expertise companies. Therefore, 43 percent of bank consumers regularly use mobile banking, and customers who do not use their bank's mobile applications are twice as likely to be displeased and not applaud that bank. Furthermore, 58 percent of the top 50 global banks already view digital transformation as extremely important, and 85 percent of bankers say they are halfway there or further behind. Furthermore, 7 percent of bankers thought they were well prepared for digital transformations.

### **Features of digital banking**

#### ***Online banking***

Online banking, or Internet banking, is a method in which money is transferred electronically with a specific banking operation on an authentic website over the Internet. The consumer uses online transactions that could do fund transfers, bill payments, and checkbook requests. In addition, most of the transactions are done by a bank in four ways (Shetty et al., 2019). One advantage of online banking is that customers should not visit banks. They can provide financial explanations anytime and anywhere.

#### ***Personal financing plan***

Bhattacharya and Sinha (2022) said that banks provide a bank website as a financial planning technique to assist investment, forecasting, budgeting, and tax preparation. It is used in digital banking to decrease risk, set up a savings account, and develop a debt management plan.

#### ***Digital Coupons and Cash Books***

Venkatesan (2020) claimed that digital coupons and cashback are the tickets and documents that could be redeemed for a financial discount. Redeem online coupons by accessing the telephone number or inspecting the loyalty card at the cash register. When ready to activate the taped online coupons, they must type the phone number at the register or let the shop assistant scan the store loyalty card.

#### ***Automatic Bill Payments***

Venkatesan (2020) noted that bills and accounts would be directly linked and automatically paid on time to facilitate online use. Online banking offers many high-quality solutions that make banking faster and more convenient. However, such a fast and convenient method should be used.

#### ***Willingness of Customer***

Customer willingness determines that to minimize endeavors and increase the reward. According to Li & Wang, (2017), customers' preferences analyze through the aspect of conformity, durability, accessibility, and time cost-benefit analysis. However, if involved in a particular product, such benefit means the customer would empower its preferences more toward its product or services—digital banking covering quality management. Therefore, customer willingness is being increased because the future of banking is highly correlated and associated with digital currency.

#### ***Willingness to use consumer digital banking***

Digital banking customers are more likely to use digital banking instead of traditional banking due to its accessibility of transactions, which is more likely to be clear and precious enough. According to Hutter (2018), digital banking avoids postponing because every transaction is done on time. Moreover, digital banking is a form of decentralized banking; therefore, no two people can interfere with each other. However, customers can easily withdraw and deposit the amount at any time. According to Kalra & Jain (2018), customers are willing to use digital banking because there is zero chance of transaction error. However, such changes in error minimize the margin of errors in transactions. Customers use digital banking, which determines the effectiveness of time and cost. The time is in the sense that before, the customer used traditional banking to have much time. The engagement problem exists when there is a considerable distance between the customer, bank, and transportation, and carrying costs occur. In addition to this, the digital currency has been organized its system through coding and biometric systems, the retina effect, and many other technologies. Therefore, there would not be any question of frankness or stealing or transferring the money to a different consumer. Furthermore, coding and computing brought many changes to the bank, which moved to a digital bank, positively impacting consumer willingness (Hutter, 2018). Consumer willingness is the behavior, which updates consumers to bring improvement in their lives through technology. Furthermore, such technology is digital banking, which has revolutionized the world.

## **EMPIRICAL LITERATURE REVIEW**

### **The Security factor which influences consumer willingness through digital banking**

Consumers think security risk connects to a fear of losing capital. Studies have shown that security risk is one of the primary factors that could affect the adoption of online banking services (Singh & Rana, 2019). The difference between digital technology's perceived safety and its actual level of protection may affect people's behavior. The success of online banking service implementation is threatened by a lack of consciousness and improper supposed knowledge about information and money security. Security is dynamic, and customers choose to use digital banking.

Generally, security is defined as being secure or safe from damage. Besides, consumers view relationships with trust-based banking as essential, and how they view security banking (Alkhowaiter, 2020). Some indicators allow consumers to position their trust in security-related digital banking. Include positive word-of-mouth reviews, the brand value of reputation information, opinion-based awareness of customers' safety issues, and risk management. Identity plays a vital role in banks providing their customers with Internet-based services. However, it can use efficient methods to endorse customers' identities through Internet banking services.

Bauer and Bernroider (2017) noticed that customers were worried that some might learn or tamper with their details when performing online transactions. Chandio et al. (2017) argue that boosting consumer development preparation in terms of excitement and creativity is essential while reducing consumers' development problems regarding uncertainty and distress. Hence, establishing trust with customers via protection is one of the main areas that companies must prioritize. Meanwhile, they are developing and promoting their goods and services through digital banking. Concerns about security, safety, confidence, and risk can affect choices made by consumers on the Internet banking system. In the first quarter of 2015, 80 percent of global phishing scams targeted the banking and finance market. Tripathi and Rai (2017) reported customer concerns about the protection of payments as a barrier to online banking growth. Other Internet banking deployment studies have also established protection as the primary customer concern. Concerning customer attitudes towards Internet banking systems, trust may be connected to customer judgment on security and privacy issues. Yang et al. (2017) identified trust as a significant factor in online banking usage by consumers using an internet-based survey, while Al-Sharafi et al. (2016) achieved similar results in Malaysia. Several reported significant security violations have raised public curiosity about online transactions and decreased their trust. This is mainly for online banking, one of the e-commerce areas, while customers are more concerned about security. Customers are worried about the security issues of the e-banking type, which may hinder their use of online banking. Moreover, the contest between retail banking institutions drives them to enhance the comfort and protection of their online banking services. However, cases of media-reported e-bank violence occasionally threaten the trustworthiness of online banking consumers, as Tham et al. (2017) described. It is also a matter of defining, implementing, and strictly enforcing safety procedures and policies in online banking.

#### **The Convenience factor which influences consumer willingness through digital banking**

According to Rothman (2017), "Digital Banking" started in the 1980s and expanded in the 1990s, which had become the norm by 2000, when e-commerce became common (Jackson & Viehoff, 2016). The user-friendly method and functionality of online banking are the key selling point. Convenience is the ease and simplicity of use and the achievement of tangible benefits through portability-driven usage and rapid accessibility (Neumann et al., 2016). Digital banking services' convenience is characterized by versatility, connectivity, availability, and accessibility of space and time compared with traditional banking services. In addition to the flexibility in space and time, the mobile phone service often reduces the discomfort of payment devices. Computers and laptops allow customers to make digital banking transactions. In addition, mobile banking systems could also support small transactions and remove the inconvenience to consumers who make small-money transactions (Bertram et al., 2016). Digital payment systems also deliver payment strengths and rising consumer transaction costs Fowler et al., (2018); for the above purposes, internet service is well suited for the digital lifestyle, offering a convenient payment transaction for human life. It has been figured out that convenience is the privilege of personal computing. It is one factor that determines the performance of mobile payment services (Jünger & Mietzner, 2020). The convenience of the new method gives users space, time, and access speed. However, convenience lets customers make more straightforward use of the service and improves payment efficiency Butler et al., (2017); furthermore, mobile payment platforms allow customers to combine new technology that mobile devices use with conventional payment methods. Consumers should use the technique's availability in all cases to reduce time pressure (Hassan et al., 2018).

#### **The Cost factor that influences consumer willingness through digital banking**

Cost is also one-factor driving customers' adoption of online banking services. Hoang and Vu (2020) claimed that introducing new technologies reduces service costs, which, in effect, lowers service charges. Son et al. (2020) say low interaction costs have unintended consequences for service demand rises. This may be one of the key factors contributing to one's online adoption habits. This is similar to the research performed by Augusto and Torres (2018), showing the connection between the costs involved (linked with Internet use and service charges) and Internet banking adoption. Consumers who support Internet banking should be mindful of the transaction charges and find it appropriate. In short, consumers might endorse or oppose online banking systems based on their perception of costs. Using current payment systems, customers should pay high prices for mini-payments (Augusto & Torres, 2018).

Digital payments are a new service mechanism for nano-payments in e-commerce, and smartphones give consumers a significant advantage when they need a small amount. If internet-banking suppliers paid attention to the cost and time factor, users would likely be willing to embrace the technology. In addition to this, users pay attention to time and cost issues. Furthermore, the higher the competitive advantage of using the network, the more frequently the user would be willing to implement mobile banking services. A combination of customer and automated tellers, particularly during working hours, raises profitability for the bank (Augusto & Torres, 2018). From the consumer's

perspective, cash machines save the consumer time when delivering services. When they remove the need to wait in long Queues in the bank corridor, the consumer may use the saved hours to do specific successful projects. Cash machines are cost-effective because they improve efficiency per unit of time relative to their human counterparts. ATMs are efficient 24/7, operating long after individual tellers have finished working hours. El-Manstrly (2016) identified that switching costs are included if consumers switch from one service to another and the maintenance costs and efforts the customers make while switching. Feng et al. (2016) interpret more specifically the psychological costs involved in curiosity and confusion and face them.

Therefore, switching over one commodity to the next, this work also emphasizes that switching costs could be used as a deterrent for consumers. Moreover, since it would take time to understand new stuff. Switching costs are often used as obstacles, so it can be the most vital tool to improve consumer willingness, and advertisers often use this method to tie their consumers to their goods for a long time. Szopiński (2016) claimed that switching costs can have three components, and each factor seems significant. Procedural costs typically include setting up costs and reviewing how customers evaluate the service. Meanwhile, switching from one system to the next. Interpersonal costs are also critical for maintaining a successful relationship in the banking industry. Furthermore, it includes the relationship with product development and its interpersonal climate. Switching costs directly influence consumer willingness. The main benefit is the consumer attachment due to switching costs. Often, customers hesitate to move due to extra effort. Usually, consumers are hesitant to move because they know the danger of switching. It requires all forms of switching dimensions, whether operational or financial. Switching costs are the main factor for consumer willingness.

### **The risk factor that affects customer willingness through digital banking**

Perceived risk can influence the willingness of the customer whether or not to use the digital services. Customers feel the risk of different sections of the use of online services and try to prevent it. Therefore, the overall perceived risk of depositors can lessen consumer willingness to espouse online banking services (Son et al., 2020). There seem to be various aspects of the interpretation of risk that lead to the perceived risk of consumers exhausting online banking services. One of these things is performance risk, which relates to customers' worries regarding the quality or performance of the goods or services with expectations. The risk of success is contingent on the knowledge and perceptive ability of the customers regarding a specific product or service. Irregularity of information in digital banking and lack of personal contact prevent accurate service validation and reduce trust Venkatesan, (2020). That's why some banks seek to move the exact information through particular websites and let them pursue it before they use it. By this, one can assume that presume it. Consumers' social awareness raises their awareness of risk regarding adopting online banking services. The Internet has a significant impact on how things should be done. It could flash out details to its users. Therefore, it should be noted that studying how to work on innovation may take time. This can become very important when the quality of service is low, with the aid of the network. There is also a possibility that the payment may not be adequately made Shaikh and Karjaluoto (2016). The attributes of users determine consumer approval of innovation. Many users can embrace new ideas and innovations much quicker than others without having any related experiences. Researchers have studied how people can be motivated to try new things. Ermakova and Frolova (2019) explored technology adoption concepts and the acceptance of e-banking technologies. How and how the adoption features characterize the latest developments has been investigated. However, such development contributes to customers' acceptance of online banking technology. They concluded that personalization initiatives and creative initiatives. Diffusion can set the pace and adoption level. Morales and Trinidad (2019) noted that those lifestyle orientations are another vital predictor of specific emerging innovations being accepted. People eager to embrace innovation are growing their willingness to use online banking services.

### **Research Hypothesis**

Hypothesis 1 (H1): There is a significant impact of factors on willingness to use consumers' digital banking.

Hypothesis 1a (H1a): Convenience impacts consumers' willingness to use digital banking.

Hypothesis 1b (H1b): Cost impacts willingness to use consumers' digital banking.

Hypothesis 1c (H1c): Security impacts willingness to use consumers' digital banking.

Hypothesis 1d (H1d): Risk impacts willingness to use consumers' digital banking.

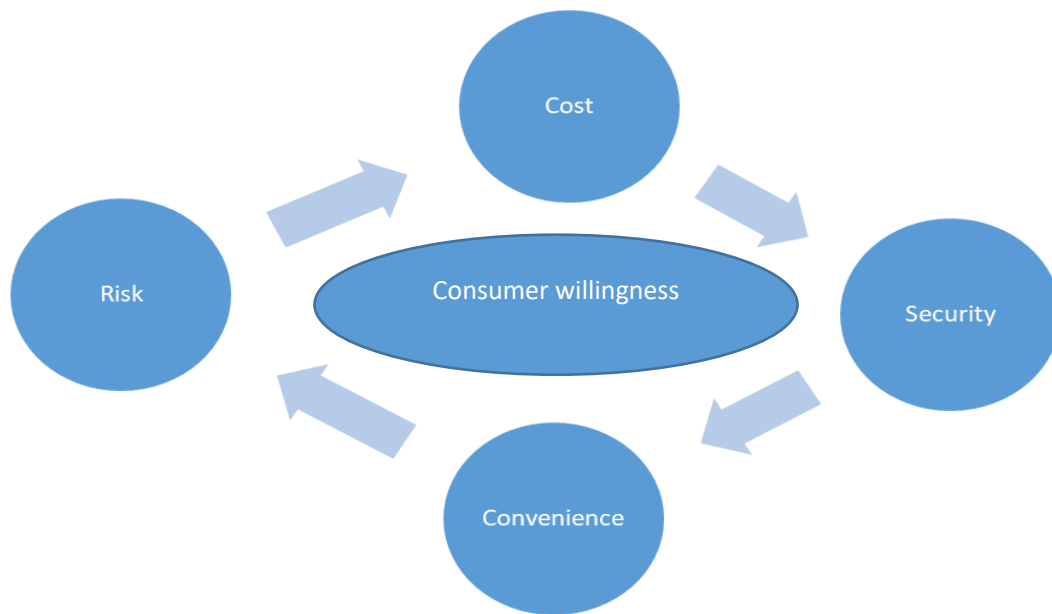


Figure 1: Conceptual Framework

## METHODOLOGY

This study is the primary quantitative. In quantitative research, there is a short-handed question, and the answers are numeric. Moreover, in qualitative research, the researcher interviews the respondents to get exact information for the study. Besides, in every research, the researcher has to follow the research ethics; otherwise, it harms the research participants. Miracle (2016) said that every researcher must maintain ethical standards in research. Moreover, the privacy of the respondents is the top priority of any researcher. Van den Hoonaard & Hamilton (2016) claim that participants did not complete the research when the ethical standard was not followed. The researcher has to secure the information of the participants rather than be harmful to the research. In addition, Bracken-Roche et al. (2017) said that the research's ethics spell out the researcher's seriousness. The confidentiality of the participants is most important for the researcher. The researcher has to create obstructions between the information of respondents. That no other person knows about any information if participants disagree. Moreover, the researcher could not force the participants to fill out the questionnaire; the choice of the participants is necessary. There are two types of research approaches: detective research and inductive research. However, in this study, the researcher chooses detective research. In detective research, the answer is conducted in the form of numbers, which means quantitative. In addition, there are two types of research design: confirmatory research and exploratory research. However, in confirmatory research, the researcher finds the hypothesis and the impact of variables. Confirmatory research is quantitative. Moreover, the researcher explores the findings from participants' answers in exploratory. Confirmatory research is qualitative, in which the researcher asks any questions in the interview; there are no barriers in qualitative research to explore the data. Furthermore, confirmatory research takes more time, but the data are better. Besides, in exploratory research, the researcher asks survey questionnaires from the appropriate population chosen for this study.

## Data, Instrument, Statistics

Data collection is a very substantial part of any research. The researcher selects the types in which the data are collected. There are two types of data collection methods, which are given below. Primary data is the first source. In primary data, the researcher researches by himself without conveying any other source from past-related studies. Stubbs et al. (2017) said that primary data costs more time and money, but the collected data are purer and trustworthy, which is effective for the research. Besides, the primary data collection methods are survey questionnaires, interviews, focus group discussions, emails, and many more. Secondary data is the opposite of primary data. Primary data are already used. Moreover, the researcher and the user differ in secondary data. Furthermore, secondary data saves money and time for the researcher. In the context of secondary data, the researcher must copy the data from the Internet and other past studies related to the topic. The sample size chosen for this study is 200. However, selecting a large number of sample size can make the research strong. As per the study done by Malterud et al. (2016), choosing such a sample size can be enough to find an impact. The population of this research is customers of digital banking. However, the appropriate population is chosen for this research. The population of digital banking customers fills out the questionnaire to detect the impact of the factors affecting the willingness to use digital banking. The questions are measured using a Likert scale ranging from S.D for Strongly Disagree, D for Disagree, N for Neutral, A for Agree, and S.A for Strongly Agree. The researcher uses statistical techniques to analyze the data. However, the researcher has to analyze the data effectively, making the result clear

and pure. Furthermore, the researcher wisely applied statistical techniques with consistent perceptiveness to collect the information for the research. It would help the researcher to condense and outline the critical data from a stack of information. Besides, the researcher used SPSS software in the data analysis process, which is best to give adequate and precise analysis data. According to Hinton & McMurray (2017), the researcher must analyze the researcher's findings that are needed correctly.

**RESULTS**

As per Table 1, most of the participants' ages are in the 30 to 40 range. Moreover, 131 participants are below 30, and only 31 are above 40. Moreover, 258 participants in this study are male, and the remaining 42 are female. Forty-five participants completed their education matric, 95 completed intermediation, 115 graduated, and 44 completed post-graduation. Considering the income level, the income of 102 participants is, on average, 25 to 50 thousand, 45 participants' income is an average of 10 to 25 thousand, and 90 participants' income is 50 to 90 thousand. Moreover, on average, 51 participants' income is 75 thousand to 1 lac, and only 12 participants' income is more than one lac.

**Table 1: Demographic Profile**

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 30	131	43.7	43.7	43.7
	30-40	137	45.7	45.7	89.3
	Above 40	32	10.7	10.7	100.0
	Total	300	100.0	100.0	
Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	258	86.0	86.0	86.0
	Female	42	14.0	14.0	100.0
	Total	300	100.0	100.0	
Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matriculation	46	15.3	15.3	15.3
	Intermediate	95	31.7	31.7	47.0
	Graduation	115	38.3	38.3	85.3
	Post-Graduation	44	14.7	14.7	100.0
	Total	300	100.0	100.0	
Income					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rs 10,000-25,000	45	15.0	15.0	15.0
	Rs 25,000-50,000	102	34.0	34.0	49.0
	Rs 50,000-75,000	90	30.0	30.0	79.0
	Rs 75,000-100,000	51	17.0	17.0	96.0
	More than Rs 100,000	12	4.0	4.0	100.0
	Total	300	100.0	100.0	
Savings Level (As a % of income)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below11%	98	32.7	32.7	32.7
	11-20%	150	50.0	50.0	82.7
	21-30%	45	15.0	15.0	97.7
	Above 30%	7	2.3	2.3	100.0
	Total	300	100.0	100.0	
Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	109	36.3	36.3	36.3
	Married	191	63.7	63.7	100.0
	Total	300	100.0	100.0	

The table shows 150 participants saved 10 to 20 percent of their income. Moreover, 98 participants saved less than 10 percent of their income, 41 participants saved 20 to 30 percent, and only 7 participants saved more than 30 percent. The marital status shows that 109 participants are single, and 191 are married. Table 1 also shows that 125 participants are full-time employed, 11 are part-time employed, 59 are self-employed, 1 are retired, and 104 did not share their employment status.

Table 2: Descriptive Statistics

	Mean	Std. Deviation	N
Digital Banking	4.04	.924	300
Security	4.05	.878	300
Risk	3.97	.937	300
Convenience	3.97	.910	300
Cost	3.95	.944	300

The mean of all variables is more than 3.5. This means most respondents strongly agree and agree with the survey questionnaire. Furthermore, the standard deviation performance reveals that all variables have a deviation of .87 to .94. It denotes that the deviation in the responses of questions of variables is one.

**REGRESSION**

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774 <sup>a</sup>	.599	.591	.62516
a. Predictors: (Constant), CostIV, ConvenIV, SecurIV, RiskIV				
Reliability Statistics				
Cronbach's Alpha		N of Items		
.748		5		

The above table indicates the validity and reliability of the data. It can be stated that 74% of the data is valid and reliable because the R-square value is .599.

Table 4: ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.208	4	1.802	4.611	.061b
1 Residual	115.295	295	.391		
Total	122.503	299			

a. Dependent Variable: DB\_DV

b. Predictors: (Constant), CostIV, ConvenIV, SecurIV, RiskIV

The ANOVA explanation is used to estimate the statistical variances of means. The F-statistics is 4.611, which indicates the model because it is greater than 3.14, which is a standard requirement.

Table 5: Coefficients<sup>a</sup>

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	3.902	.452		8.633	.000
1 SecurIV	-.107	.061	-.116	-1.759	.072
1 RiskIV	.004	.046	.006	.096	.052
1 ConvenIV	.156	.055	.187	2.857	.005
1 CostIV	-.067	.067	-.062	-1.003	.063

a. Dependent Variable: DB\_DV

The above table presents the acceptance level of the hypothesis. Hence, the values of all independent variables are near 0.05, which means that the alternate hypothesis is accepted. Security has a significant impact on the willingness of consumers to engage in digital banking. Risk has a significant impact on the willingness of consumers towards digital banking. Convenience has a significant impact on the willingness of consumers to engage in digital banking. The cost has a significant impact on the willingness of consumers to use digital banking. Hence, it can be said that these factors can change Pakistani consumers' decisions to opt for digital banking.

**DISCUSSION**

**Theme 1: To Review and Understand the Use of Digital Banking by the Customer in the Pakistani Banking Sector**

The research findings confirmed that, while virtually everyone can create an application in the digital world, banks are losing consumer control. This finding is relevant to the study of (Shaikh et al., 2017). The digitization of international investment threatens the banking system, which is affected by various banking policies and technological development. However, another finding confirmed that it appears as a simple logic that goods would work for consumers, not against them. Many banks often want to make it incredibly complicated for consumers. That is why more and more people are slowly leaving conventional banks with limited options for financial technology faires. It delivers convenience and strong emotions to them. Recently, banking sectors have been almost monopolistic in several countries, as they have a substantial and steady market share. Furthermore, this finding is similar to the study of Lipton et al. (2016), which found that significant barriers to the penetration of the financial services industry, loyal clients, and the lack of viable options guaranteed decades of powerful positions. The banking industry's success



depends mainly on how the new generation of bankers may adapt their attitude to the digital world. Some already use enterprise thinking to offer their consumers the best value, while others lag with the possibility of losing the last path to success in the modern era. Besides, another finding confirmed that everyone is conscious that digital development in the modern world is something to survive and succeed. However, not everyone understands that digitalization itself may not be an assurance of significant future progress. There are too many cases where attempts at change lead to disaster.

**Theme 2: To Review and Understand the Factors (Convenience, Cost, Security, and Risk)**

The finding of this study relates to Venkatesan (2020), who says online banking offers customers a convenient way to conduct banking business from convenience, protecting their homes and personal computers. Consumers can examine account balances and other details at any minute via convenience factor. Furthermore, Internet banking has changed the face of programmatic business and has impacted trade in many businesses and industries (Ermakova & Frolova, 2019). Consumers can carry out online dealings usually reserved for cashiers inside a bank. Cashier payments have decreased due to the convenience of Internet users to pass money, make deposits, and request deposits from personal computers. Another research finding revealed that Online banking has been the most successful in decimating bank transactions. Moreover, this finding is quite similar to the study of Bank Systems and Technology. Customers now have the opportunity to pay bills online through their accounts. Many studies found a positive relationship between Internet banking adoption and the bank's profitability. This influence is slowly reflected and is essential two to three years after the implementation. There is a time delay in the effects of online banking because of the higher initial investment costs for the new delivery network. It has been found by Morales and Trinidad (2019) that banks anticipate that information and technology will be implemented to minimize operating expenses due to the decline in the number of workers needed in the business operations of banks. However, Pradhina and Subhash (2020) noted that operating expenses grow after online banking, decline slowly over time, and become small three years after implementation. It finds no proof that the online portal is a low-cost replacement for the distribution of the bank. Besides, there is proof that Internet-related costs, such as call center costs that sustain customers or higher average salaries for a more skilled workforce to operate the more complex distribution network, are rising. The findings of Hassan et al. (2018) reveal that online banking is a significant step for many customers because it is common for them to go to work or home simply. Moreover, they can log on to the online banking site on their computers. Then, consumers can swap money from one account to another and pay bills by pressing a button. When digital banking technology improves, security tends to improve. However, there are still incentives for hacking the accounts you're working through. The study done by Kalra et al. (2018) said that people always log on to the Internet. The computer carries the risk of threats to get personal information and access the money. Behind all the scenes, they use different security measures to ensure that transactions and personal details are secure and fortified.

**Theme 3: To Identify the Relationship between Factors (Convenience, Cost, Security, and Risk) and Customers' Willingness to Use Digital Banking.**

The findings of this result show that the companies within each sector are engaged in manufacturing. However, the finding is relevant to Mehta's (2019) finding that this is effective for the organization to engage with other organizations in the same sectors, emphasizing huge-scale production or facilities that result in economies of scale or productivity. This resulted in a higher margin without considering industry or customer needs. Because the producer controlled the market. A further finding of this research revealed that after the progress in the market occurred, digital banking made it possible for customers. To have greater access to the information. This finding is similar to the study of Kalra et al. (2018). Moreover, the decision-making inherent in purchasing products or providing services became more complex. Companies that formerly focused exclusively on manufacturers had to change to meet the wishes of consumers. As per the study (Jackson & Viehoff, 2016), different aspects of the perception give rise to the degree of potential risk. To customers when using online banking services. One of these things is performance risk. However, it addresses customers' concerns about the quality of performance of the product or service with expectations. The findings of this study demonstrate that the chance of success depends on the knowledge and cognitive development of the customers regarding a specific product or service. Asymmetry of knowledge in online banking and lack of personal contact prevents accurate service testing and decrease trust. That is why some banks attempt to pass correct information through particular websites and require them to try these services before using them.

**Theme 4: To Recommend an Improvement to Enhance the Willingness of Customers to Use Digital Banking.**

The findings of this research reveal that using advanced high-tech e-banking increases banks' hopes for the future and the wants and needs of their customers. (Larsson & Viitaoja, 2017). The study is also similar in that the researcher claims that a marketing technology theory explores the means of internal and external factors in predicting the attitude of consumers towards online services, along with the efficiency of companies. However, banks have increasingly developed approaches to building and maintaining continuing customer relationships. Banks focus on enhancing digital banking services by adding more factors that affect the interaction and engagement of customers, such as confidence, which is an essential factor for clients. Other findings of this study confirmed that the lack of

confidentiality in e-banking would arise from the online service transfer process. Logically, the level of trust consumers have in the bank affects how they obtain their digital banking. Sellers and buyers cannot meet each other online, which means the buyer cannot use the consumerist signs to assess the seller and the physical store by watching them. The study's findings show that various threats, such as privacy incursion and hackers accompany digital networks. Therefore, bank managers should be aware of those risks by connecting the confidence distance. This would make online banking a more appropriate service. There are many reasons e-banks build consumer trust and enhance customer experience within this digital world, such as a well-designed and appealing interface delivering cognitive signals. Consumers should trust that a foreign government's online banking services are safe, non-toxic, and authenticated to reinforce their faith in these services.

## **CONCLUSION**

### **To review and understand the use of digital banking by the customer in the Pakistani banking sector**

It is concluded that a customer's use of digital banking determines the technique to assist financial planning, that is, how the consumer prepares the budget. Shetty et al. (2019) claimed that digital coupons and cashback are tickets and documents that can be exchanged for a financial discount. It is concluded that past research has been done on privacy and awareness about international issues that bring improvement and enhance the willingness of a customer to use digital banking (Venkatesan, 2020). However, such research was also mentioned in this study as well. The bank's approaches have developed to increase continuing relationships with its customers. The bank's focus was to create service through digital banking by introducing more factors that affect the engagement of customers and the confidence level they have developed. Furthermore, in the survey questionnaire, the question of how the consumer uses digital banking was also asked.

### **To review and understand the use of digital banking by the customer in the Pakistani banking sector**

It is concluded that digital banking provides financial explanations and allows for managing accounts from any computer method anytime and anywhere. Customers can utilize digital banking for online shopping and buy any product from anywhere in the world. However, digital banking reduces the layers of conventional banking (Larsson & Viitaoja, 2017). The establishment of digital banking determines to work and collect money independently. However, respondents to the survey question identified digital banking as an opportunity to explore the financial aspect of independently creating and tracking banking accounts in the study. In addition, financial exploration was also sought without any constraint in past studies, as these studies research survey questions.

### **To review and understand the factors (Convenience, Cost, Security, and Risk)**

It is concluded that digital banking reduces and minimizes the endeavors of collecting payments, utility bills, and opening an account. However, such a component has been replaced by ATMs, mobile banking, and online banking. This research has explored that consumers were more willing to use channels like ATMs, online, and internet banking that emphasize accuracy, minimal time, and proper accessibility of transactions through digital banking. Li & Wang (2017) state that the influence of software engineers in digital banking helps a consumer to do a transaction without any risk. However, past studies have conducted the same research, and this study was shown from the respondents of a survey questionnaire who acknowledged the impact of such convenience cost and risk factors through digital banking.

### **To identify the relationship between factors (Convenience, Cost, Security, and Risk) and the willingness of customers to use digital banking**

The willingness of customers to use digital banking, particularly. Due to its accessibility, it assists in providing clarity, which helps avoid postponing the transaction of money. According to Hutter (2018), the willingness of a consumer to use specific digital banking is due to its decentralized banking system. The interference of different consumers could be avoidable. However, customers can easily withdraw and deposit the amount at any time. The previous research has done the same study that was also mentioned in this study as well. Furthermore, in the survey questionnaire, the question was also asked how the consumer was willing to use digital banking.

### **To recommend an improvement for enhancing the willingness of customers to use digital banking**

It is concluded that there is an improvement in the perceived nature of customer service and access to services. Digital banking reached a vast range of sectors, and a community-saving risk system was identified as an opportunity for consumers to seek investments. The mass group of people that modified financial-economic reforms (Bansal & Jain, 2018) affected banks. Therefore, due to such improvements, banks are expanding a wide range of services proposed to customers while the dependency on technology grows.

## **RECOMMENDATIONS AND LIMITATIONS**

Privacy infringement is a vital aspect of digital banking that needs to be improved, and a consumer should be aware of such elements as a manager. Consumers should also trust international online banking services that are protected

from threats. A high-quality solution to payment transfer should be used to provide a faster and more convenient banking experience (Venkatesan, 2020). Digital banking should be used on mobile at any time. Mobile transactions were recorded to assess data compared to traditional banking, which helps to analyze the financial position. This study researched the factors that affect customers' willingness to use digital banking. However, multiple studies have been conducted about the influence of digital banking on consumer willingness, which has also been discussed in past studies. They identify consumer loyalty and satisfaction with digital banking, which must be considered in the research gap. Planned behavior theory postulates the nature of relationships between consumer willingness and beliefs. According to these models, people's evaluations of or willingness towards behavior are determined by their accessible beliefs about the behavior. In contrast, faith is the subjective probability that the behavior may produce a specific outcome. The researcher contextualizes the theory of planned behavior in this study. However, this study identifies the relationship between consumer willingness and digital banking in which accessible digital banking is defined as the subjective likelihood that digital banking creates a particular result.

Moreover, at this time, banks are providing security to their customers by protecting their accounts. Furthermore, banks hire software engineers, and these people help people satisfy customers and do online transactions without any risk. Banks allow direct transactions, such as pay deposits and automated bill pay. In addition, the customer had to wait their turn, which consumed time and delayed the work due to avoidable digital banking. More than half of the consumers would be comfortable using a technological company, such as Apple or Google, for various financial transactions. Furthermore, digital-only customers account for nearly 30 percent of retail bank clientele. The consumer can manage their account anywhere and anytime from any computer method. The consumer can save time and can track accounts easily. People cannot engage in illegal, permissible, or money laundering activity in their digital wallets. In addition, FIA and law enforcement agencies would arrest such kind people through digital wallets because all transactions create history in a digital wallet. From the bank's perspective, it usually faces severe problems, especially in managing time and cost. However, such a time and cost approach is determined by the central bank to its local banks. Maintaining a schedule and forwarding and receiving money physically increases the chances of threats. Banks could be consumers of a central bank willing to use digital banking to increase the effectiveness and productivity of the bank. The central bank could also be a consumer of the World Bank.

Hence, the central bank digitized the system from physical to virtual, immensely impacting the local consumer. Through digital banking, consumers can save their money for longer. There would not be any chance of stealing, and there would not be any fraud from banks. Risk is usually linked with consumer trust in the implementation of new technologies. However, several safety standards are already set for reducing the risk of digital banking. International Organization for Standardization 27000 series of standards, for example, has also been explicitly allocated for information assurance issues by the International Organization for Standardization. Organizations can create trust with digital banking with products/services that meet the level of IT security rules and regulations and adjust to the security policies of consumers. Organizations can also contribute to secured e-payment transactions with digital banking safes and trusted services such as Online Identification and Electronic Trust Services. Digital payment services help users cut transaction costs through small transactions, in which customers often make their payments. The convenience also allows for avoiding the burden of money and coins. Therefore, for the above reasons, this study proposes that convenience affects perceived user-friendliness and the perceived utility of digital payment services. With the development of telecommunications technology, M-payment service providers have facilitated these device features without imposing more costs. However, exploiting the potential of falling mass manufacturing costs leads to greater consumer acceptance. Like every other innovation, digital banking provides pros and cons. The pros include improved efficiency, lower operating costs, and virtual branch interconnection for banks. However, due to the expense of switching, the bank may take advantage of another chance to entertain that client in the banking sector. It is hard to move; consumers must familiarize themselves with other banking website activities, such as building online accounts and transaction fees.

## REFERENCES

- Abbas, Q., Hussain, S., & Rasool, S. (2019). Digital literacy affects students' academic performance at higher education levels in Pakistan. *Global Social Sciences Review*, 4(1), 154-165. [https://doi.org/10.31703/gssr.2019\(IV-I\).14](https://doi.org/10.31703/gssr.2019(IV-I).14).
- Alkhowaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, 53, 102102.
- Al-Sharafi, M. A., Arshah, R. A., Abo-Shanab, E. A., & Elayah, N. (2016). The effect of security and privacy perceptions on customers' trust to accept Internet banking services: An extension of TAM. *Journal of Engineering and Applied Sciences*, 11(3), 545-552.
- Augusto, M., & Torres, P. (2018). Effects of brand attitude and eWOM on consumers' willingness to pay in the banking industry: Mediating role of consumer-brand identification and brand equity. *Journal of Retailing and Consumer Services*, 42, 1-10.

- Bansal, N., & Jain, M. (2018). Progress in Digital Banking After Demonetization: Some Evidence. *IUP Journal of Bank Management*, 17(2).
- Bauer, S., & Bernroider, E. W. (2017). From information security awareness to reasoned compliant action: analyzing information security policy compliance in a large banking organization. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 48(3), 44-68.
- Bertram, M. Y., Lauer, J. A., De Joncheere, K., Edejer, T., Hutubessy, R., Kieny, M. P., & Hill, S. R. (2016). Cost-effectiveness thresholds: pros and cons. *Bulletin of the World Health Organization*, 94(12), 925.
- Bhatt, A., & Bhatt, S. (2016). Factors affecting customers' adoption of mobile banking services. *Journal of Internet Banking and Commerce*, 21(1), 1-22.
- Bhattacharya, C., & Sinha, M. (2022). The role of artificial intelligence in banking is to leverage customer experience. *Australasian Accounting, Business and Finance Journal*, 16(5), 89-105.
- Bracken-Roche, D., Bell, E., Macdonald, M. E., & Racine, E. (2017). The concept of 'vulnerability research ethics: an in-depth analysis of policies and guidelines. *Health research policy and systems*, 15, 1-18.
- Butler, A. W., Cornaggia, J., & Gurun, U. G. (2017). Do local capital market conditions affect consumers' borrowing decisions? *Management Science*, 63(12), 4175-4187.
- Chandio, F. H., Irani, Z., Zeki, A. M., Shah, A., & Shah, S. C. (2017). Online banking information systems acceptance: An empirical examination of system characteristics and web security. *Information Systems Management*, 34(1), 50-64.
- El-Manstrly, D. (2016). Enhancing customer loyalty: critical switching cost factors. *Journal of Service Management*, 27(2), 144-169.
- Ermakova, E. P., & Frolova, E. E. (2019). Legal regulation of digital banking in Russia and foreign countries (European Union, USA, PRC). *Perm U. Herald Jurid. Sci.*, 46, 606.
- Feng, T., Cai, D., Wang, D., & Zhang, X. (2016). Environmental management systems and financial performance: The joint effect of switching cost and competitive intensity. *Journal of cleaner production*, 113, 781-791.
- Fowler, R., Hodge, B., Kress, G., & Trew, T. (2018). *Language and control*. Routledge.
- Hassan, A., Yakubu, M. B., Bulama, M., & Shitu, A. A. (2018). A customer perspective on infrastructure & legislative effects of using mobile banking apps in Nigeria. *Global Journal of Information Technology: Emerging Technologies*, 8(3), 102-113.
- Hinton, P. R., & McMurray, I. (2017). *Presenting your data with SPSS explained*. Routledge.
- Hoang, D. P., & Vu, T. H. (2020). A transaction cost explanation of the card-or-cash decision among Vietnamese debit card holders. *International Journal of Bank Marketing*, 38(7), 1635-1664.
- Hutter, M. (2018). *Target group for video banking: How sociodemographic and behavioral characteristics affect the willingness to use video banking* (Bachelor's thesis).
- Jackson, P., & Viehoff, V. (2016). Reframing convenience food. *Appetite*, 98, 1-11.
- Jünger, M., & Mietzner, M. (2020). Banking goes digital: The adoption of FinTech services by German households. *Finance Research Letters*, 34, 101260.
- Kalra, S., Jena, B. N., & Yeravdekar, R. (2018). Emotional and psychological needs of people with diabetes. *Indian journal of endocrinology and metabolism*, 22(5), 696-704.
- Krisnanto, U. (2018). Digital banking made transactions more trusted and secure.
- Larsson, A., & Viitaoja, Y. (2017). Building customer loyalty in digital banking: A study of bank staff's perspectives on digital CRM and loyalty challenges. *International journal of bank marketing*, 35(6), 858-877.
- Li, Q., & Wang, X. (2017, November). A study on the influence of engagement marketing strategy on customer perceived support and willingness to customer engagement. In *2017 IEEE 14th International Conference on e-Business Engineering (ICEBE)* (pp. 166-171). IEEE.
- Lipton, A., Shrier, D., & Pentland, A. (2016). *Digital banking manifesto: The end of banks? USA*: Massachusetts Institute of Technology.
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative health research*, 26(13), 1753-1760.
- Mbama, C. I., & Ezepue, P. O. (2018). Digital banking, customer experience, and bank financial performance: UK customers' perceptions. *International journal of bank marketing*, 36(2), 230-255.
- Mehta, A. (2019). Learning organizations engage in innovation. *HR Future*, 2019(5), 26-28.
- Miracle, V. A. (2016). The Belmont Report: The triple crown of research ethics. *Dimensions of critical care nursing*, 35(4), 223-228.
- Morales, D. T., & Trinidad, F. L. (2019). Digitization of Mortgage Banking among Selected Universal Banks in the Philippines: Towards a Model of Acceptance of Digital Mortgage Service. *Review of Integrative Business and Economics Research*, 8, 401-411.
- Mostafa, A. A., & Eneizan, B. (2018). Factors affecting acceptance of mobile banking in developing countries. *International Journal of Academic Research in Business and Social Sciences*, 8(1), 340-351.
- Neumann, P. J., Sanders, G. D., Russell, L. B., Siegel, J. E., & Ganiats, T. G. (Eds.). (2016). *Cost-effectiveness in health and medicine*. Oxford University Press.

- Pradhina, N. P., & Pillai, S. K. B. (2020). Customer continuance intention toward digital banking applications. In *Understanding Digital Industry* (pp. 103-107). Routledge.
- Rothman, D. J. (2017). *Conscience and convenience: The asylum and its alternatives in progressive America*. Routledge.
- Shaikh, A. A., & Karjaluoto, H. (2016). Some misconceptions concerning digital banking and alternative delivery channels. *International Journal of E-Business Research (IJEER)*, 12(3), 1-16.
- Shaikh, A. A., Glavee-Geo, R., & Karjaluoto, H. (2017). Exploring the nexus between financial sector reforms and the emergence of digital banking culture—Evidence from a developing country. *Research in International Business and Finance*, 42, 1030-1039.
- Shetty, H.V.V., Apoorva, K. and Nikhitha, K.V., 2019. Digital revolution in the Indian banking sector. *International Journal of Social and Economic Research*, 9(3), pp.15-23.
- Singh, S., & Rana, R. (2019). Customer perception and adoption of digital banking. *Research Journal of Humanities and Social Sciences*, 10(2), 397-401.
- Son, Y., Kwon, H. E., Tayi, G. K., & Oh, W. (2020). Impact of customers' digital banking adoption on hidden defection: A combined analytical-empirical approach. *Journal of Operations Management*, 66(4), 418-440.
- Stubbs, B., Vancampfort, D., Veronese, N., Kahl, K. G., Mitchell, A. J., Lin, P. Y., ... & Koyanagi, A. (2017). Depression and physical health multimorbidity: primary data and country-wide meta-analysis of population data from 190 593 people across 43 low-and middle-income countries. *Psychological medicine*, 47(12), 2107-2117.
- Szopiński, T. S. (2016). Factors affecting the adoption of online banking in Poland. *Journal of business research*, 69(11), 4763-4768.
- Tham, J., Ab Yazid, M. S., Khatibi, A. A., & Azam, S. F. (2017). Internet and data security—understanding customer perception on trusting virtual banking security in Malaysia. *European Journal of Social Sciences Studies*.
- Tripathi, P., & Rai, P. (2017). Customer Attitudes and Adoption of Digital Banking. *LBS Journal of Management & Research*, 15(1), 15-22.
- Van den Hoonaard, W. C., & Hamilton, A. (Eds.). (2016). *The ethics rupture: Exploring alternatives to formal research-ethics review*—University of Toronto Press.
- Venkatesan, R. (2020). Digital Banking System—A Panacea. *Studies in Indian Place Names*, 40(40), 2159-2166. Retrieved from <https://tpnsindia.org/index.php/sipn/article/view/2785>.
- Von Behren, R., & Wall, J. (2016). *U.S. Patent No. 9,355,391*. Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patents.google.com/patent/US9355391B2/en>.
- Yang, D., Kou, L., & Liu, A. (2017). *U.S. Patent No. 9,672,499*. Washington, DC: U.S. Patent and Trademark Office.
- Zhang, J. (2018, December). Research on Factors Affecting Consumers' Offline Mobile Payment. In *Proceedings of the International Symposium on Big Data and Artificial Intelligence* (pp. 95-99).