

UNIVERSITY OF EDUCATION, WINNEBA

**FACTORS AFFECTING CUSTOMER'S INTENTION TO USE DIGITAL
LOAN APPLICATION SYSTEM: EVIDENCE FROM SELECTED BANKS IN
GHANA**



**A dissertation in the Department of Management Sciences,
School of Business, submitted to the School of
Graduate Studies, in partial fulfillment
of the requirements for the award of the degree of
Master of Business Administration
(Human Resource Management)
in the University of Education, Winneba**

DECEMBER, 2022

DECLARATION

Student's Declaration

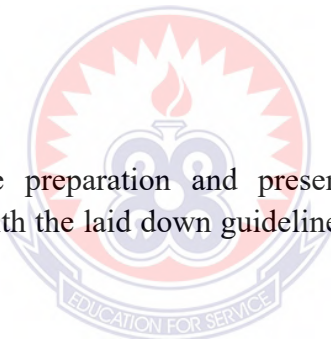
I, Gladys Arthur ,declare that except for the reference to other research books and websites which have been duly cited, this project work is the result of my own efforts and that it has neither in wholly nor partially been presented or produced elsewhere.

Signature:

Date:

Supervisor's Declaration

I, hereby declare that the preparation and presentation of this dissertation was supervised in accordance with the laid down guidelines by the University of Education, Winneba.



Dr. Philip Siaw Kissi (Supervisor)

Signature:

Date:

DEDICATION

I dedicate this project to God Almighty the creator, a strong pillar, and source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this programme and on His wings have I soared. Also, I dedicate to my husband and Kids, Elliot Atsu Kubi, Klenam and Elorm Kubi who have been a constant source of support and encouragement during the challenges of graduate school and life. I am truly thankful for having them in my life.



ACKNOWLEDGEMENT

First, I am extremely grateful to my supervisor, Dr. Emmanuel Erastus Yamoah for his invaluable advice, continuous support, and patience during my MBA study. His immense knowledge and plentiful experience have encouraged me in all the time of my academic research and daily life. I would like to thank all the members of the HRM class of 2020/2021. Their kind help and support have made my study. Finally, I would like to express my gratitude to my husband, my siblings and my children. Without their tremendous understanding and encouragement over the past few years, it would be impossible for me to complete my study.



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LIST OF ABBREVIATION

Abbreviation	Meaning
UTUAT	- Unified theory of acceptance and use of technology
TAM	- Technology Acceptance Model
DLAP	- Digital Loan Application System
LISREL	- Linear Structural Relations
SPSS	- Statistical Package for the Social Sciences
PE	- Performance Expectancy
SI	- Social Influence
OLF	- Online Load Fraud
MMDL	- Multi-model Digital Literacy
BI	- Behavioural Intention
UB	- Usage Behaviour
MF	- Message Factors

ABSTRACT

This study aims to examine factors affecting the usage of digital loan application systems in the traditional banking sector. This study used the cross-sectional survey research design with a quantitative approach of data analysis to collect data. A survey questionnaire was the main research instrument used in this study. The two hundred and sixty-six customers of selected banks were purposively selected for the study. Structure equation modelling generated using LISREL was used in the analysis of the data to answer research questions with its associated hypothesis. The findings of the study revealed that the performance expectancy of the UTUAT model has a statistically significant effect on customers' behavioural intention to use the digital loan application system. Also, Message factors introduced by the Yale model of communication and persuasion influence customers' behavioural intention to use digital loan application systems. Interestingly, the study indicated that multi-model digital literacy has a positive significant effect on customers' behaviours intention and usage behaviour. However, on the contrary, online load fraud has a negative on customers' behavioural intentions. The findings of this study enable policymakers in banking sectors to improve digital loan application systems and further introduce new policies to increase its use for more borrowing to improve the banks' profitability. Theoretical contributions and managerial implications are also discussed in chapter five of this research.



CHAPTER ONE

INTRODUCTION

The chapter highlights the background of the study, the problem statement, the purpose of the study and the research objectives. The chapter further discusses research questions, research questions that guide the study, limitations, and scope of the study and ended with an organisational plan for the study.

1.1 Background of the Study

In the banking sectors globally in 2020, 2.4 billion customers are using digital banking and in the next four years, the number is projected to increase to 3.6 billion as suggested by Juniper Research (2020). This sharp rise is fueled by telecommunications and mobile technologies coupled with third-generation and third-generation connections in different service industries, especially the banking sector (Malaquias & Hwang, 2019; Owusu et al., 2021; Picotto & Pinto, 2021). The banking sectors have been investing in the digital platform to provide needed timely information and increase customer satisfaction while lowering the operational cost of the bank (Baptista & Oliveira, 2015; Kaur & Ali, 2021; Malaquias & Hwang, 2019).

In a modern banking environment, technology is having an insightful effect on daily operations and pushing them in an entirely new direction. For example, several financial institutions use digital loan application systems to attract more customers (Demraoui, Eddamiri & Hachad, 2022). The digital loan application system is a data processing method for online loan information without the physical presents of credit customers at traditional bank branches. This system makes the processing of an application easy, faster credit decisions, and novel options for borrowing (Suri,

Bharadwaj & Jack, 2021). The application system is further used by financial institutions to attract more customers (Demraoui, Eddamiri & Hachad, 2022). Up to now, studies continue to recommend the use of online loan applications system to credit businesses, particularly in the loan department of traditional banks, for processing a large amount of customers' loan application information (Kamau, 2021; Limonyo, 2020; Suri, Bharadwaj & Jack, 2021).

1.2 Statement of the Problem

Previous empirical studies have indicated that the profitability of every financial institution such as banks largely depends on borrowing) and savings (Misra & Coccoresse, 2022; Williams & Rajaguru, 2022). Thus, the primary sources of banks' revenue are the net interest margin and charged processing fees from borrowing. Therefore, for the banks to increase revenue growth, there should be speed and accuracy in loan application processing systems. This can be achieved by the implementation of online loan application systems. Electronic loan applications are fast, offer easy borrowing access, 24 hours/7 days application option and secure transactions (Wang, Guo & Cheng, 2019). However, the majority of banks, particularly in Ghana continually rely on paper-based loan applications. This has denied many customers from borrowing. For instance, the missing fields, inaccuracies and physical delivery of paperwork to all parties involved have grind and delay application processing leading to termination. Furthermore, the reliance on manual entry of data on paper creates added, costs of buying paper which reduces the bank's profit margin. Despite these benefits, banks are reluctant to use online loan applications. Moreover, the process of securing involves several works and effort from both the employees and customers. Failure to comply with these several regulations may lead to fines and restrictions and

consequences have a negative impact on the reputation of the financial institution. In addition to that, the traditional process of securing a loan is considered boring and tiresome.

Furthermore, in late 2020, out of 85% of financial institutions that permit consumers to submit their loan applications online, only 66% can complete the entire process (Marous, 2020). This means that there may be challenges associated with the design and implementation of these systems that hinder traditional banks to reach their intended objectives on loan applications. For instance, these difficulties may result from messages that guide the loan application process, performance and the friendliness of the systems, social influence and customers' digital literacy. Meanwhile, there are inadequate empirical studies in the literature that addresses this gap. However, a better understanding of the underlying challenges of digital loan application systems may help traditional banks and other financial institutions to increase the usage of loan application systems. More so, several studies on banking technology have focused on mobile commerce and banking services (Gu et al., 2009; Min et al., 2008; Patil et al., 2020; Zhou et al., 2010), course management software (Liu et al., 2007) and cashless payment systems (Zhou et al., 2010; Gu et al., 2009). Therefore, this study focus on the digital loan application system in the banking section.

1.3 Aim of the Study

This study aims to examine factors affecting the usage of digital loan application systems in the traditional banking sector.

1.4 Research Objectives

The following research objectives are formulated to guide the study:

1. To ascertain the effect of performance expectancy and social influence on intention to use digital loan application systems in banking sector
2. To determine the effect of message factors introduced by the Yale model of communication and persuasion on intention to use digital loan application systems in banking sector
3. To investigate the effect of online load fraud on behavioural intention to use digital loan application systems in banking sector
4. To find out the effect of multi-modal digital literacy on the intention and usage of digital loan application systems in banking sector.
5. To examine the effect of customer behaviour intention on the usage of digital loan application systems in banking sector.

1.5 Research Questions

The following research questions are formulated to guide the study:

1. What are the effects of performance expectancy and social influence on the intention to use digital loan application systems in banking sector?
2. What is the effect of message factors introduced by the Yale model of communication and persuasion on intention to use digital loan application systems in banking sector?
3. What is the effect of online load fraud on the intention to use digital loan application systems in banking sector?
4. What is the effect of multi-modal digital literacy on the intention and actual usage of digital loan application systems in banking sector?
5. What is the effect of customer behaviour intention on the usage of digital loan application systems in banking sector?

1.6 Significance of the Study

The findings of the study have several policy implications and recommendations for policymakers and regulators of banks, particularly in Ghana. The findings enable policymakers to improve the communication process of digital loan application systems and further introduce new policies to increase its use for more borrowing to improve the banks' profitability. More so, the study provides a clearer picture of the integration of online loan fraud and multi-model digital literacy into UTUAT and the Yale model of communication and persuasion based on empirical evidence of digital loan application systems in a developing country such as Ghana. The findings also highlight critical factors in terms of a contribution to fostering customer usage of the digital loan system.

1.7 Scope of the Study

The current study is about the use of digital loan application systems. The loan application system is a digital platform that helps automate every stage of the loan lifecycle, from the application to disbursing of the loans. These systems are mainly used by customers in traditional banks and other financial institutions. Therefore, this study is limited to bank customers in the banking sector.

1.8 Rest of the Study Organisation

The rest of the study was scientifically organised into other different chapters. Chapter two carefully presented the theoretical framework and literature available on bank loan applications and the hypothetical structure that forms the underlining basis of the study. Chapter three described the general research design, and methodology and discusses the blueprint that answers the research hypothesis. Chapter four included data analysis, results and discussion. Chapter five entails the summary of the main findings, the

conclusion of the study and its market implications, recommendations, and suggested areas for further study.

CHAPTER TWO

LITERATURE REVIEW

This chapter primarily focuses on varied views on what other authors have written concerning the topic under study. The literature review focused on the theoretical framework of the study, hypothesis development with a proposed conceptual framework, hypothesis development, issues related to the history of loan applications and some other issues concerning the benefit and challenges of the digital loan application system

This study aims to examine factors affecting the usage of digital loan application systems in the traditional banking sectors. To address this aim, the study was based on two theoretical frameworks namely:

- A unified theory of acceptance and use of technology (Venkatesh et al., 2003)
- Yale model of communication and persuasion (Janis & Hovland, 1959).

2.1 Theoretical Framework: A unified theory of acceptance and use of technology

For quite a while, the Technology Acceptance Model (TAM) has become the overwhelming model of choice, however different models, for example, the motivation theory, joined together TAM, the Theory of Planned Behaviour (TPB) and the Model of PC Utilization (MPCU) to formed expansions of the TAM. The Unified Theory of Acceptance and Use of Technology (UTAUT) was introduced by Venkatesh et al.

(2003). The UTAUT model is a more recent model that combined TAM; the Theory of Reasoned Action (TRA); the motivational model (MM); the TPB; the merged TAM and the TPB model; the MPCU; the innovation diffusion theory (IDT); and the social cognition theory which appears to address the flaws of the previous models. This theory disclosed an individual's intentions to accept and continue to use a particular technology.

The UTAUT consists of four main constructs namely performance expectation, effort expectation, social influence and facilitating condition as displayed in Figure 2.1. These four key constructs are independent factors which influence behavioural intention and usage (dependent variable). Some other factors such as gender, age, experience, and volunteers of system use have an indirect impact on the behavioural intention together with four main constructs. Behavioural intention is identified as an important determinant of technology use (Venkatesh et al., 2003). Even though the UTAUT model has been disapproved as not applicable. The UTAUT model was tested and found to have an R^2 of 70%, suggesting that the model explains 70% of the variance in individual intentions to use information technology (Venkatesh et al., 2003).

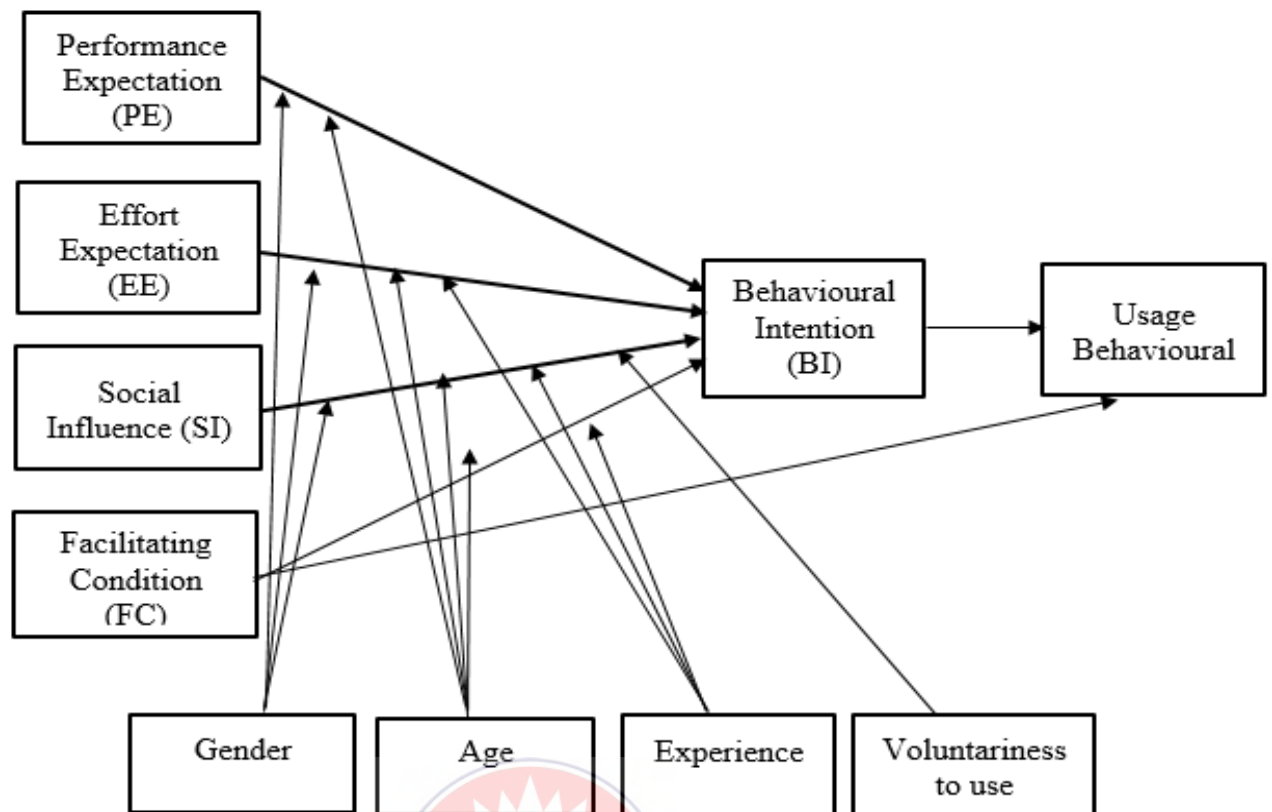


Figure 2.1 UTAUT model (Venkatesh et al., 2003)

Performance expectancy “degree to which an individual believes that using the system will help him or her to attain gains in job performance” (Venkatesh et al. 2003)

Performance expectancy is proposed to restrain the impact on the behavioural intention by age and gender. This construct, performance expectancy was developed from five sources, namely perceived usefulness, extrinsic motivation, relative advantage, outcome expectations and social cognitive theory. For the enhancement of the study context, the study did include some variables such as gender, age, experience and voluntariness. Al-Adawi, Yousafzai, and Pallister (2015) investigated e-government adoption based on the UTAUT model which included trust and risk issues. The proposed model explained

factors that could transform a citizen's readiness to engage in the adoption and use of e-government. They concluded that performance expectancy greatly influences citizens' intention to use e-government. Performance expectancy is a critical determinant of technology adoption (Venkatesh, Thong, & Xu (2012); Venkatesh, Sykes, & Zhang, 2011). Performance expectancy from the perspective of technology acceptance has an impact on people's decisions (Dickhäuser, Reinhard, & Englert 2011). There was a comparatively strong positive correlation between performance expectancy and the use of internet devices for studies and cloud computing adoption.

Effort expectancy is the “degree of ease associated with the use of the system” (Venkatesh *et al.* 2003). Nyembezi & Bayaga (2015) stressed that the use and acceptance of cloud computing among high school students are influenced by effort expectancy. In the context of e-government, effort expectancy affects the employee's intention to adopt e-government in Oman (Alraja *et al.*, 2016). A study conducted by Ghalandari (2012) showed that effort expectancy has a significant influence on customers' behavioural intention to adopt internet banking services in Sudan. Based on the Unified Theory of Acceptance and Use of Technology Model Wang & Wang (2010) examined the determinants of internet banking acceptance in Taiwan and invest using the structural equation modelling strategy. They concluded that effect expectancy contributed positively to the acceptance of internet banking in Taiwan. From this logic, it appears that effort expectancy may influence the adaptation of loan application systems adaptation.

Social influence is “the degree to which an individual perceives that important others believe he or she should use the new system” (Venkatesh *et al.* 2003). Social influence is postulated to be moderated by gender and age, experience, and volunteers of the

system to influence behavioural intention. Wang & Doong (2010) investigated citizens' acceptance of technology from the perspective of innovation by evaluating the influencing factors. In Taiwan. Martins, Oliveira and Popovič (2014) examined the main predictors of Internet banking adoption by users. They integrated perceived risk into the unified theory of acceptance and use of technology (UTAUT) to explain behavioural intention and usage of Internet banking. The findings maintained some relationships with UTAUT. In particular social influence stronger predicts behavioural intention to use Internet banking.

Facilitating conditions are “the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system” (Venkatesh *et al.* 2003). They proposed that age and experience moderate the influence of Facilitating conditions on behavioural intention. AlAwadhi & Morris (2008) in their study measured the perception and adaptation of e-government. They found that facilitating conditions were a critical predictor of the adoption of technology in Kuwait. From this analogy, facilitating conditions could have a positive impact on loan application systems usage

The reason for choosing the UTAUT model as the theoretical framework of this current study is because it is the most current theory of technology adoption and has combined other important models of technology adoption to make it sufficient to investigate the research hypotheses of this present study in the context of information management systems adaptation.

2.2. Theoretical Framework: Yale Model of Communication and Persuasion

The Yale Model of Communication and Persuasion was introduced by Janis and Hovland in 1959 associating personal characteristics and persuasion with three key factors namely (a) the source of the communication, (b) the nature of the communication and (c) the nature of the audience. In explaining the theory, they define communication as a “process by which a communicator transmits stimuli (usually verbal) to modify the attitudes and behaviours of other individuals (audience)” (Hovland & Janis, 1959, p. 23). The theory indicates that these three factors affect the extent to which communication such as source factors, message factors, and audience characteristics impacts the attitudes and behaviours of individuals as seen in Figure 2.2 of their model. In particular, several source factors are believed to influence the acceptance of the recipients, comprising the status, expertise source level and trustworthiness (Hovland et al., 1953). More so, the communication process is influenced by message factors which include the request explicitness, the arguments order, and the emotional appeals. Also, the theory urges that the recipient's (audience) characteristics such as individual persuasibility, intelligence, and personality influence effective communication (Hovland & Janis, 1959).

Another basic assumption contained in the model is that the effect of a given communication depends on the extent it affects the three mediating processes, (a) attention, (b) understanding, and (c) acceptance. To make communication effective recipients must pay attention to the information, understand what is being communicated and accept it. For example, there may be fewer individuals who are likely to engage in communication when resources have a low level of credibility or expertise. Similarly, recipients may be less likely to understand the message when a resource uses one-way rather than two-way communication. Besides that, the model

suggests that beneficiaries are less likely to receive a message if it does not attract their attention or allow them to understand information.

The model contains many of the key factors that can influence the acceptance of communication, however, McGuire (1969, 1969, 1985) with his extended model namely the communication- Persuade Matrix Model suggests that “attention and comprehension determine the degree to which the recipient will learn from the communicator's message, and the individual's motivation will determine whether he or she accepts or adopts what is learned” (McGuire, 1969, p. 10). Again, McGuire's model argues that individual acceptance of information is based on a persuasive source, message, or reward for doing so. Therefore, McGuire concludes that the motivation of the recipient is an important element of the communication process.

Moreover, with the McGuire model, Petty and Cacioppo (1986) introduced an extension of his called the Elaboration Likelihood Model (ELM). The model claims that cognitive processing is influenced as a result of motivation and the ability to process communication. For instance, individuals are highly engaging in carefully examining the main elements of the issue or message when they are motivated and are capable of reasoning and deliberating on the message content of the communication. On the other hand, when persons are not included or motivated to think of the message, their engagement levels of elaboration are very low. Therefore, he/she scrutinizes the messages quickly or concentrates on their mental shortcut to enable them to choose between acceptance and rejection of it. In particular, the individual may depend on the physical appearance and the expertise of the communicator as a basis for accepting a message.

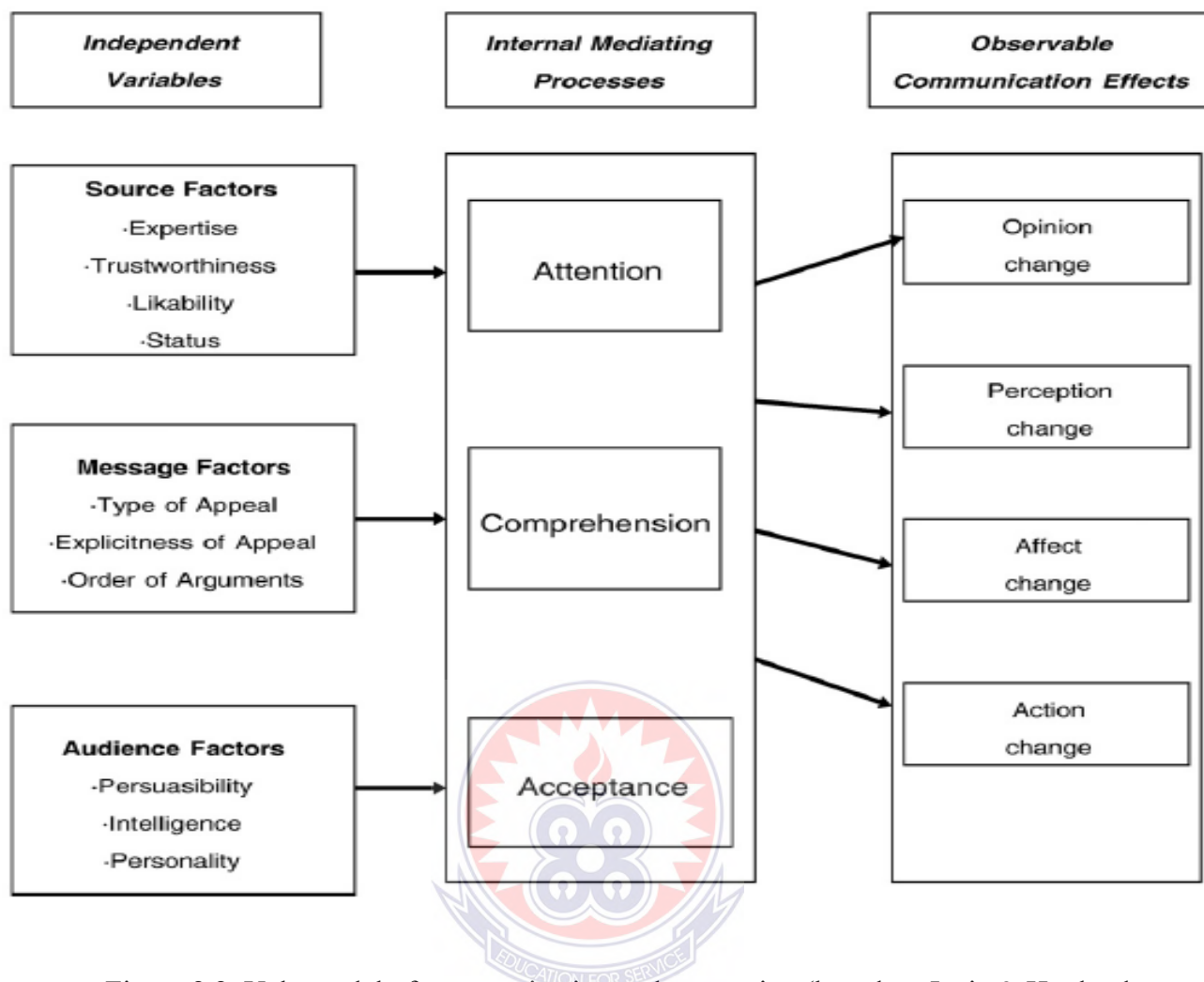


Figure 2.2. Yale model of communication and persuasion (based on Janis & Hovland, 1959).

2.3 Hypothesis Development

2.3.1 The Effect of Performance Expectancy on Behavioural Intention

From the perspective of this study, performance expectancy is explained as the extent to which a customer believes that using the digital loan application system is efficient and effective for processing loans in a bank. Some studies agree that performance expectancy determines the use of specific technology in an organisation. In particular, Zhou, Lu and Wang (2010) investigated the acceptance of mobile banking. It was revealed that performance expectancy has significant effects on user intention to use mobile banking.

In support, performance expectancy influences customers' habits to use online banking in the cultures of Pakistan and Turkey (Khan et al., 2022). More so, in mobile banking literature, performance expectancy emerged as the strongest predictor of intention (Al-Saedi et al., 2020; Khan et al., 2022; Venkatesh et al., 2012). Based on the previous findings, this present study proposes that:

H1: performance expectancy has a significant effect on behavioural intention to digital loan application system in the traditional banking sector

2.3.2 The Effect of Social Influence on Behavioural Intention

This study explicates that social influence is the degree to which customers perceive that the significance of the belief of others (family, friends, and colleagues) encourages them to use digital loan application systems. Previous studies suggest that there is a significant relationship between social influence and people's behavioural intention to use new systems. For instance, Dwivedi et al. (2019) found that social influence is expected to significantly affect attitude and behavioural intention during their study of re-examining the UTAUT. Furthermore, Zhou, Lu & Wang (2010) found that social influence as one of the strongest predictors of user intention to use mobile banking. Kamal, Shafiq & Kakria (2020) social influence positively influences behavioural intentions toward telemedicine. Also, social influence impacts e-government trust and behavioural intention. Therefore, this research argues that people such as college customers, friends, colleagues at work and family members can enable consumers to better understand and influence their intention to digital loan application systems. Hence, the following hypothesis is suggested:

H2: Social influence has a significant effect on behavioural intention to use digital loan

2.3.3 The Message Factors on Behavioural Intention

In this present study, message factors are explained as the extent to which the digital loan application systems messages are a painful expression of views, knowledge and intention without any ambiguity to stir up understanding responses. Some studies have reported that there is a relationship between messages and intention. For instance, Suka, Yamauchi & Yanagisawa (2019) indicated that influential messages may promote intentions for depression. More so, Suka, Yamauchi and Yanagisawa (2018) found that formatting messages may influence the willingness and intention to read them. In support, Carfora and Catellani (2021) reported that framing messages affects the attitude and intention of the receivers toward physical activities at home. Some studies have also indicated that under certain circumstances, convincing messages kindle attitude which resulting behavioural intention change (Petty and Cacioppo, 2012; Petty and Briñol, 2015). Moreover, Research has recommended structure or evaluation of a message positively influences the intention (Cauberghe et al., 2009; Davis, 1995; Chong and Druckman, 2007; Fernando et al., 2016; Spence and Pidgeon, 2010).

H3: Message factors have a significant positive effect on behavioural intention to digital loan application systems in the traditional banking sector.

2.3.4 The Effect of online load fraud on Behavioural Intention

Financial fraud is “a deliberate act that is contrary to law, rule, or policy with the intent to obtain an unauthorized financial benefit” (wang et al., 2006). In this study, online loan fraud is explained as unlawful or criminal trickery intended to gain money from the customer as a result of securing a bank online loan. More so, online loan fraud is perceived in this study as a situation whereby impostors or scammers deceived others online for financial gain. The negative effects arising from online loan fraud activities

are felt worldwide (Orjiakor et al., 2022). Presently, the occurrence of implementation new internet fraud to steal a piece of individual information and money through the Internet is causing great harm to people and even society (Xu, 2022). Increased patronage of digital products and services in the banking sector has exposed customers to a high level of fraud (Banking Industry Fraud Report, 2020). Customers could become a victim of online loan fraud if the security measures do not comply. Rofiq (2012) found that the intention of customers to use e-commerce systems is negatively influenced by cyber fraud in Indonesia. Accordingly, this study hypothesises

H4: Online loan fraud has a significant negative effect on behavioural intention to digital loan application systems in the traditional banking sector.

2.3.5 The Effect of Multi-modal digital literacy on Intention and Usage Behaviour

From the perspective of this study, multi-modal digital literacy is the ability of an individual to make meaning through observing, reading, understanding, interpreting, responding to, and interacting with multimedia and digital texts on financial issues. While other numerous existing studies suggested that multi-modal learning platforms tend to influence behavioural intention and the subsequent effect on usage behaviour (Soffer, Kahan & Livne, 2017; Carpenter et al., 2012). Oluwajana and Adeshola (2021) found multi-modal literacy to exert a significant role in behavioural intention to learn using collaborative computer-based. Jung et al. (2012) intention or usage of the e-book are influenced by awareness and digital media ownership. Marsh (2021) found that employees' digital skills affect usage behaviour. As a result, the following were suggested:

H5: Multi-modal digital literacy has a significant negative effect on behavioural intention to digital loan application systems in the traditional banking sector.

H6: Multi-model digital literacy has a significant negative effect on behavioural intention to digital loan application systems in the traditional banking sector.

2.3.6 The Effect of Behavioural Intention on Usage Intention

Venkatesh et al. (2003) indicated that behavioural intention has a significant effect on the usage behaviour of technology in the study of information technology. Several studies have predicted the association between behavioural intention and usage behaviour. For example, Oluwajana & Adeshola (2021) found that behavioural intention affects the usage behaviour of using computer collaborative learning. Furthermore, Chang et al. (2017) reported that behavioural intention is a predictor of students' usage of e-learning. Therefore, there is likely that people's behavioural intentions may influence the user's behaviour to use digital loan application systems. Accordingly, the following hypothesis is suggested:

H7: Behavioural intention has a significant effect on the usage behaviour of digital loan application systems in the traditional banking sector.

2.4 Proposed Research Conceptual Framework

The UTAUT introduces several factors that predict the use of a particular technology in an organisation. The predicting factors are performance and effort expectancy, social influence, and facilitating condition with mediating variables, age, gender, experience, and voluntariness to use. However, the study focuses on customer usage of digital loan system applications and therefore, the performance expectancy and social influence predict factors of behavioural intention while behavioural intention is also a determinant of usage behaviour. Moreover, the Yale Model of Communication and Persuasion models introduced independent variables such as source factors, message factors and audience factors that are likely to influence observable communication effects which include

opinion change, perception change, affect change and action change. The theory concluded that the relationship between the observable communication effects is internally mediated by attention, comprehension and acceptance. However, in this study message factors are considered to be a relevant factor to influence behavioural intentions. Moreover, integrated online loan fraud and multi-model digital literacy as additional factors that are likely to affect behavioural intention as discussed in detail in sections 2.3.4 and 2.3.5 under hypothesis development.

To conclude, given the two theoretical frameworks noted above, provide a better understanding of digital loan application system usage. The intention of using this system may be affected by performance expectancy, social influence, message factors, online loan fraud and multi-model digital literacy. While behavioural intention and multi-model digital literacy could also influence the usage behaviour of using digital loan application systems. Therefore, this study combines the UTUAT and Yale Model of Communication and Persuasion models with added online loan fraud and Multi-model digital factors to develop a conceptual framework as seen in Figure 2.3 to investigate factors affecting the usage of digital loan application systems in banking sectors.

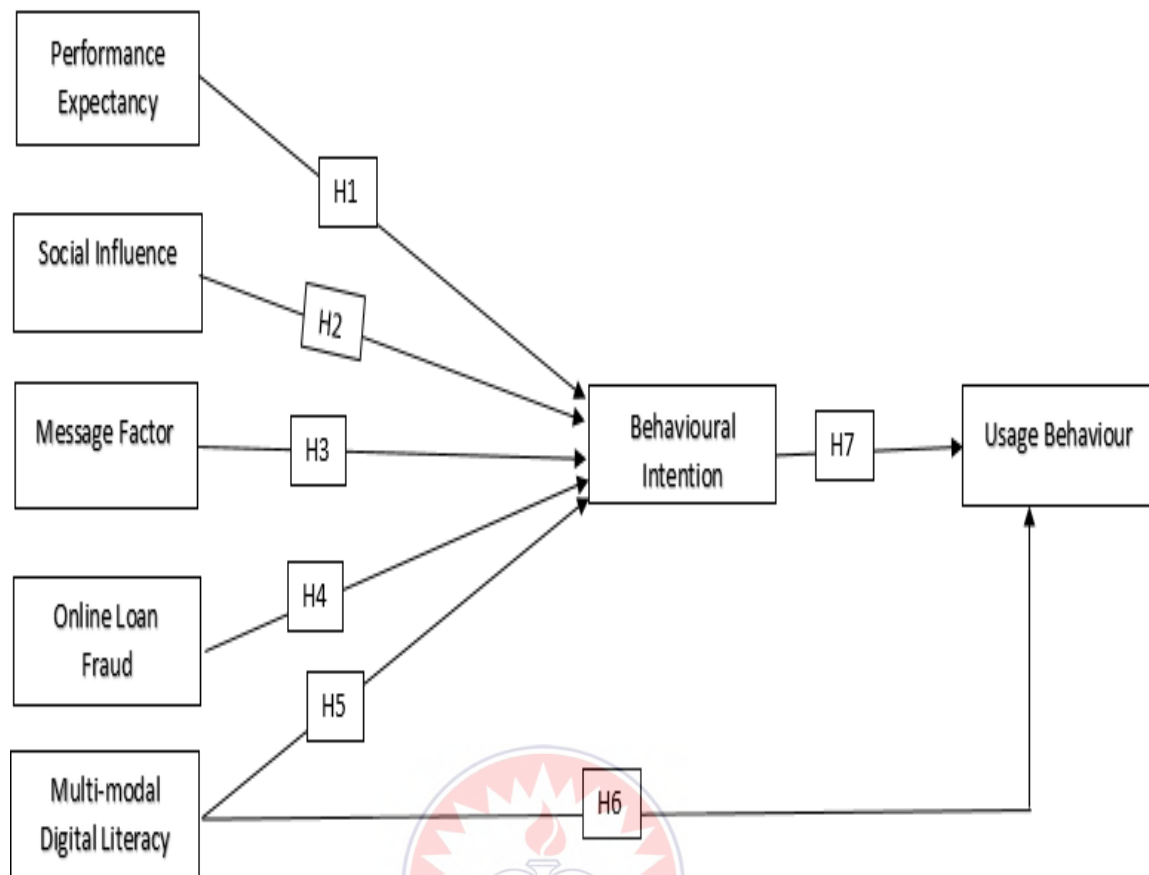


Figure 2.3 Proposed Conceptual Framework

2.5 History of Loan Application

The lending of the money system is traced to about 3000 Before Christ (BC) in ancient Mesopotamia. Mesopotamia is known today as Iraq, Syria, Kuwait, and some parts of Turkey countries. In ancient times, they have acceptable law which allows the lender sells the borrower, his wife or children as collateral to secure his money. The collateral work in the house of the man who bought them for three years and free them in the fourth year to settle the debt. This was followed by the Pawnbrokers system where the lender request collateral from the persons borrowing the money to reduce the lender's risk. For instance, people take money from a lender and in response give him the equivalent amount of goods. In the Zamindar system, people receive money from the

Zamindars and then work for it to repay the amount. In particular, farmers, the mill owners borrow the amount to cultivate the cereals and buy the cereals from them.

The new era of lending developed in the early 1800s. The construction society and the savings fund society began during this era. The modern lending system arose from the emergence of technological involvement in banks and financial institutions in the 1950s. The government has set up organizations such as the RBI in India, the Monetary Administration of Singapore (MAS) in Singapore, and the US Federal Reserve to regulate and monitor the banking system in their countries. Banks have started lending to their clients based on their needs and goals with different types of loans. That is, the secured loans including housing loans, and car loans are secured by submitting the asset as collateral. The value of the mortgaged property will determine whether they should be given a low-interest rate or a larger loan amount.

2.6 Digitalization and the future of the lending system

The digital age of the credit system dates back to the 21st century. Banking and financial services have been transformed into a digital world that has paved the way for the digital lending system. A lot of financial software has emerged to reduce the physical work and traditional processes involved in the lending system. The introduction of online banking and mobile banking has made the lending process as easy for the borrower as it is for the lender. In 2010, a LendingTree.com survey found that 21% of potential home loan consumers buy online. In 2015, a BBVA survey found that consumer credit via mobile phones increased by 45%. Now, the rise of fintech has revolutionized the lending system and given birth to many peer-to-peer lending sites. Peer-to-peer lenders from lending sites like Upstart, Lending Club, and SoFi receive

direct online loans without any physical appearance. And sites like Lendbox, and Perform also serve as a platform for borrowers and lenders to meet each other online.

Recently, Amazon has also entered the field of lending by offering vendor loans and educational loans to its key student clients. Many other changes are happening and will happen in the future. People are moving towards a fully automated world where everything inside their smartphones is available online. Because people have also started using high-priced smartphones, which can be used as the birthright for short-term loans in the future.

2.7 Challenges of Digital Loan Application System

There are many difficulties associated with the manual loan process. It includes a waste of time. It also includes multiple visits to the banks and also there is no guarantee of the loan getting approved. It involves a lot of paperwork and there is less security of customer information documents (Kgoroadira, Burke & van Stel, 2019). The goal for choosing the online loan approval system or application process as a response variable is due to the structure of the loan application. The official loan application starts with the lead arriving on the websites after it is opted to be acquired. Here, the applicants begin the process to apply for the loan. The user begins to provide more financial information by visiting every step of the process (Benamati & Serva 2007). After that, the loan should be processed for the applicants. Most money lending companies work by analyzing the financial history of their applicants and choosing whether or not the applicant is too risky to be given a loan. If the applicant seems safe then the company determines the terms of the loan. To acquire these customers, lending companies can receive them through their websites/apps often with the help of advertisement campaigns. Lending companies also partner with the peer lending market to acquire

leads of possible applicants (Suryono, et al., 2019). Some of the challenges of using digital loan applications are

- Start-up may take time: To register for your bank's online program, you will probably have to provide an ID and sign a form at an organization's branch. A lender with a piece of low knowledge about technology faces challenges of system complexity and
- Learning curve: Banking sites can be difficult to navigate at first. Navigation of some banking sites can be very difficult to be dealt with at times.
- Site changes: Even the largest banks periodically upgrade their online programs, adding new features in unfamiliar places. In some cases, you may have to re-enter account information.
- Trust: For many people, the biggest hurdle to online transactions is learning to trust them. Did my transaction go through? Did I push the transfer button once or twice? Best bet: always print the transaction receipt and keep it with your bank records until it shows up on your site and/or your bank statement (Maina & Njuguna, 2008).
- An unreliable network is another challenge facing the online loan application system. This is because the internet connection which linked the systems together could easily fail to result in the collapse of the e-banking network system which affects loan applications. However, the internet service is not provided by the banks.

2.8 Benefits of Digital loan application

The digital loan application system is fast. It automates the submission of a digital loan application and uploading of relevant documents, which traditionally would take

customers a day off from work to complete. Digital loan application systems are integrated with rules to help evaluate the application in seconds. Moreover, background checks of the application system can access 3rd party credit institutions to assess applicants' creditworthiness (Banna & Alam, 2021). With a digital loan application system, banks can eliminate all geographical barriers since customers can originate loan applications wherever they are. After filling in their details and the loan products they prefer, applicants just need to upload identification documents onto their mobile app. Most of today's digital loan application systems can smartly fill information with eKYC technologies. This feature helps avoid typing errors and speed up the application process. They can even scan bank statements for information within only seconds. These features help to ensure a fast and convenient user experience.

The digital banking landscape is now more dynamic than ever. Every bank now wants everything, including loans, to be processed instantly in real time. Customers are no longer willing to wait for days - not to mention to leave their homes - for a loan. A digital loan application system enables lenders to automate the decision-making process (Han & Greene, 2007). It makes sure that banks can instantly automate the lending process with background checks and verifications. The digital loan application system offers a convenient application and decision process.

Digital loan application systems replace human decisions with AI/ML decision rules. This technology ensures that the process is always consistent and error-free. Pre-configured workflows and automatic decision rules make sure that the applicants are assessed under the appropriate risk limits and loan terms. As a result, no human bias or error is involved. The systems just adhere to pre-configured rules sets to ensure the consistency of the loan origination processes and credit policies.

The digital loan application system can help banks reach the highest number of potential lenders. Today's people cannot live without their smartphones. All of their daily activities, including financial transactions for all their activities and they prefer doing their financial transactions on it too. They want the convenience of applying for a loan anytime from anywhere. Also, they will not think twice before abandoning the loan application and moving to the next lender if they have a bad experience. In this case, digital loan application act as a one-stop solution with little manual data input and fast turnaround time from loan application to money in the account. Customers can move seamlessly from one device to another to complete the application forms, be it the web or mobile interfaces.

Digital loan application systems make it easier for first-time borrowers to originate loans. Today's customers are comfortable with automation and smartphone for all their banking activities. The digital platform automates the entire loan process while offering user-friendly features and requiring very little manual input. Embedded decision rules make sure that loan applications are free from human bias or error and make the entire experience efficient, effective, and enjoyable (Meher et al., 2020). Embedded with advanced analytics, a digital loan application system can help lenders track customer behaviours and understand market trends to have a deeper insight into the loan process. In the long run, this analysis helps financial institutions to predict and allocate appropriate underwriting resources to accommodate seasonal demands (Rigbi, 2013). Analytics can provide essential information about decision bottlenecks and the scope for process improvements.

Financial institutions' resources can be used to explore new opportunities while the loan process is completely automated. As time passes, digital loan application systems can

help save overhead costs. The traditional manual loan system was a pain for both lenders and borrowers. It relies on human intervention and physical interaction at every step. Customers had to make multiple trips to the banks and submit all kinds of documents, and manually fill out several forms (Carter et al., 20 2007). These forms were manually verified by the officers at the premises of the financial institutions before final approval was given and the loan is disbursed. This entire process can take up to weeks and be subject to human errors at every level. The digital loan application system is a paradigm shift in the leading landscape. Its advantages are too huge for banks to ignore. The digital lending platform automates the entire loan lifecycle from application to approval, offering a far superior.

Digital loan application systems allow applicants to submit all information and proof them online, which eliminates the pain of paperwork and manual processes (Limonyo, 2020). This time saving can be leveraged to engage clients in non-digital relationship-building activities which enhance customer service. The digital loan application system can sync data from credit bureaus and other banks to make sure that all uploaded data and documents are verified. The system uses decision rules and underwriting algorithms to determine how risky the loan application is. By combining artificial intelligence and machine learning, digital lending software delivers a better underwriting process than human judgment.

2.9 Related studies of Online Loan Application

There are limited studies related to the digital loan application. However, Zhan and Yin (2018) studied fraud detection of loan applications on knowledge graphs and neural networks. They concluded by proposing a new way to do loan application fraud detection by using borrower call history data. Another study was done by Marlon et al

(2020) on bank loan applications. They concluded that if this database is introduced and implemented, it would help future loan applicants' speed up their loan approval. Also, in this time of the pandemic, having such a database would minimize contact among individuals. Also, Siraj et al (2011) studied i-SME: Loan decision support system using the neuro-CBR approach. The study concluded by proposing an automated decision support prototype for the SME sector that can be used by management to accelerate loan application processing.



CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the research methodology which involves the research design, the rationale for the research design, the population of the study, sample and sampling techniques and sample determination for factor analysis. The chapter further reports on data collection instruments, the reliability and validity of the research instruments and analysis procedures.

3.1 Research Design

Research design is the general plan or building a structure for research which constitutes the outline for data collection, reliability, validity and analysis to address the research (Leavy, 2022). From the perspective of this study, a cross-sectional survey research design with a quantitative approach to data collection was employed to examine factors affecting the usage of digital loan application systems in the traditional banking sector. In a cross-sectional study, outcomes are measured and Data from the participants of the study are collected and measured once at a particular time (Kassaw, & Pandey, 2022; Nardi, 2018; Showell et al., 2022). This design is the best research design that provides widespread information about a particular area or exposure (Setia, 2016; Weldesenbet, Worku & Shumbej, 2019).

3.1.1 Rational for the Design

The current study aimed to examine factors affecting the usage of digital loan application systems in the traditional banking sector. To address this aim, it was significant to select a research design that is used for a survey based on population and

investigate the prevalence of the situation based on the data collected from the samples involving exposure and outcome. Therefore, the present study employed a cross-sectional survey design because of its strengths in investigating sample groups with similar characteristics.

3.2 Population of the Study

The target population of this present study is customers in traditional banks in Ghana. However, the accessible population is selected customers in the traditional banks in the Central Region of Ghana. The choice of the population was because those traditional banks focus more on paper-based loan application systems and pay little attention to the digital loan application system.

3.3 Sample and Sampling Techniques

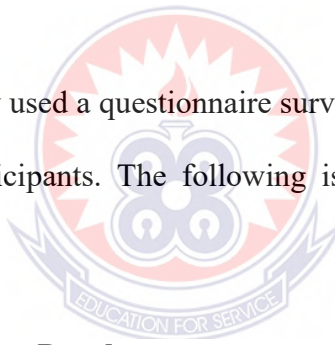
Sampling is the method of selecting a section of the population to represent the accessible population of the study (Asiamah, Mensah & Oteng-Abayie, 2022). From the perspective of the present study, the purposive sampling procedure was employed to select two hundred and sixty-seven (267) customers. This sampling approach is systematic in nature of selecting the participants for a study entrenched in the standards and principles that are imperative to the research questions of the study (Andrade, 2021). Purposive sampling enables the identification portion of the study population in quantitative research by selecting participants appropriate for the study based on specific criteria and the judgement of the researcher (Robson, 1993). López (2022) in his study indicated that purposive sampling is one of the best sampling techniques based on its assumptions.

3.3.1 Sample Size in Factor Analysis

Since the sample size should be the right representation of the study population, there is a need to justify the sample size employed for the study. Therefore, Cattell (1978) called for a desirable minimum sample size of 250 for factor analysis while Guilford (1954) argued that at least the sample size should be 200. Moreover, Alreck and Settle (1985) recommended that a sample size between 200 to 1000 participants in a particular study applies to a population of 10,000 or above. Moreover, Gorsuch (1983) and Kline (1979) recommended that the sample size should be at least 100. These recommendations from these previous empirical studies inform this present study to select a sample size of 267.

3.4 Research Instrument

The present empirical study used a questionnaire survey instrument as a research tool to collect data from the participants. The following is the development of the survey questionnaire instrument.



3.4.1 Survey Questionnaire Development

The survey questionnaire instruments consist of two sections to examine the research questions as well as a formulated research hypothesis. The first section of the survey questionnaire involves questions to find out the participant demographics. The other section consists of seven latent variables with thirty-one (31) observed variables adapted from existing literature. Which are performance expectancy and social influence (Abbad, 2021; Raffaghelli et al., 2022; Venkatesh et al., 2011; Venkatesh et al., 2003), Online load fraud(Chu et al. (2021), message factors (Wu & Wang, 2011; Kotler & Keller, 2008), multi-model digital literacy (Lin & Lin, 2019; Oluwajana &

Adeshola, 2021), behavioural intention (Lin & Lin, 2019; Venkatesh et al., 2003) and usage behaviour (Lin & Lin, 2019).

3.4.2 Scoring of the Research Instrument

The Likert scale is one of the best commonly approved measurements of research questionnaires in social and applied sciences research (Alabi & Jelili, 2022). The measurement of all items was done using the five-point Likert scale with a rating scale from Strongly Disagree (SD = 1) - Strongly Agree (SA = 5). The 5-Likert scale was selected because it takes a minimum amount of time, is very simple to use, and needs less effort to complete as compared to higher-point scales (Dourado et al., 2021).

3.5 Reliability and Validity

3.5.1 Reliability of the Research Instrument

Reliability in research is commonly observed as the fundamental criterion for assessing research instruments and predicting the truthfulness of data collected from the participant of the research. The establishment of reliability in research is important to certify that respondent data are complete and replicable, and yield accurate results. Reliability evaluates the homogeneity of the observed items or finds out the extent to which the observed items on a test are consistent (Nimon, Zientek & Henson, 2012). In most studies, the reliability coefficient is used to measure internal consistency from a single administration of a test (Hogan et al., 2000; Henson, 2001). Therefore, the survey questionnaire was first piloted to check internal consistency. The next section reports the reliability of the piloted respondent data.

3.5.1.1 Reliability of Pilot Study

For the testing of the reliability of the study, the present study conducted a pilot study not only to test the reliability only but to find out whether there are errors such as spelling mistakes in the observed variables. Forty-seven (47) customers out of the selected banks of the study were used for the pilot study. Cronbach's alpha has been defined as "one of the most important and pervasive statistics in research involving test construction and use" (Cortina, 1993, p. 98) and it is used for studies that measure multiple-item (Schmitt, 1996). The reliability analysis was done using Cronbach's Alpha (Cronbach, 1951). From the analysis, the value of the Cronbach Alpha was 0.89 which suggested good internal consistency.

3.5.1.2 Reliability of the Actual Studies

The reliability of data collected from the participants of the study was tested using the Cronbach Alpha. Table 3.1 displays the values of reliability of the study. The reliability of the latent variable of this study ranged from 0.897 to 0.952 representing better or best internal consistency of the study. Since the accepted rule of Cronbach's alpha value of 0.70 or greater is widely considered desirable (Taber, 2018), equal to or exceeding 0.80 is recommended as better (Henseler et al., 2009) and equal to or above 0.90 is the best (Hair et al., 2010; Nunnally, 1978).

Table 3.1. Result of reliability analysis

Construct	Number of items	Cronbach alpha (α)	Recommendation
Performance Expectancy	6	0.952	Excellent
Social Influence	5	0.931	Excellent
Online load fraud	4	0.926	Excellent
Message factor	4	0.897	Good

Multi-Model Digital Literacy	3	0.921	Excellent
Behavioural Intention	5	0.942	Excellent
Usage Behavioural	4	0.931	Excellent

3.5.2 Validity of the Research Instrument

The validity of the research instrument is the extent to which the observed variables used in the research measure what they are projected to measure. The confirmation of validity is fundamental to guarantee the truthfulness and quality of a research instrument (Chetwynd, 2022; Kimberlin & Winterstein, 2008). Testing the validity is a basic feature in the assessment of any measurement research instrument for good research and further represents the truthfulness.

Research of findings (Altheide & Johnson, 1994; Souza et. al., 2017). Although the research instrument was adopted from previous literature with a confirmed validity test, the present study sought face validity of the research instrument from the colleague MBA students in Human Resource Management to review the observed item for spelling mistakes errors to improve the face validity as reported by (Mostert, 2022). More so, as suggested by Souza et al. (2017, the questionnaire items were given to experts in the area of study, particularly the research supervisor to review and provide constructive feedback about the measurement research instrument. The study further examines construct validity which is based on the vital theory of measuring variables and which the research instrument is grounded. Construct validity is used to find out the difference between what is measured by the research instrument in the study and the theoretical framework that provide a firm general thumb rule for the measurement. Thus, construct validity is the “extent to which its observed associations with measures

of other variables match theoretical predictions about how it should be associated with those variables” (Westen & Rosenthal, 2003, p. 609). This type of validity focuses on the results collected with the use of the instrument but is not necessarily about the research instrument itself. (Clark & Watson, 2019). In conclusion, several methods have been established to test for construct validity but in respect of this present study, convergent validity and discriminant validity were tested to establish construct validity.

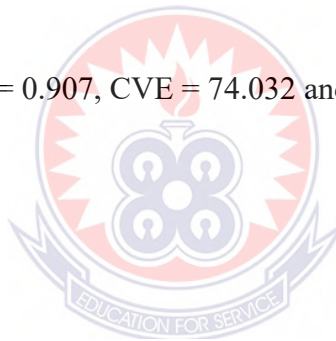
3.5.2.1 Convergent validity

The present study employed factor loadings, composite reliabilities (CR) and average variance extracted (AVE) to test the convergent validity. The factor loading values ranged from 0.787 to 0.894 whereas CR ranged from 0.872 to 0.948 and AVE ranged from 0.695 to 0.785. For the convergent validity which suggests that all the observed variables measured what they are supposed to measure, the values of factor loading should be more than 0.6 (Bagozzi, 1981), CR should exceed 0.7 (Henseler et al., 2009) and AVE greater than 0.5 (Chin, 1988; Hair et al. (2014)). Table 3.2, all the values for the three measurements with the threshold. Thus, the observed variables that should be highly related to each other are indeed related.

Table 3.2: Summary of Exploratory Factor Analysis (EFA)

Construct	Measurement	Factor loading	Skewness	Kurtosis
Performance expectancy	AVE = 0.753, CR = 0.948, CVE =15.971 and E = 8.493			
PE1		0.884	-1.081	-0.014
PE2		0.842	-0.892	0.110
PE3		0.875	-1.198	0.543
PE4		0.880	-1.065	-0.024

PE5		0.840	-0.923	0.184
PE6		0.883	-1.194	0.431
Social Influence	AVE = 0.761, CR = 0.941, CVE = 54.334 and E = 3.254			
SI1		0.881	-1.593	1.771
SI2		0.894	-1.636	2.065
SI3		0.894	-1.638	2.024
SI4		0.881	-1.565	1.665
SI5		0.809	-1.425	1.435
Online load fraud	AVE = 0.724, CR = 0.913, CVE = 64.447 and E = 2.121			
OLF1		0.865	-1.475	1.743
OLF2		0.848	-1.537	2.303
OLF3		0.875	-1.534	1.709
OLF4		0.815	-1.549	1.637
Message Factor	AVE = 0.711, CR = 0.907, CVE = 74.032 and E = 1.688			
MF1		0.787	-1.391	1.270
MF2		0.831	-1.697	1.729
MF3		0.877	-1.678	1.712
MF4		0.874	-1.778	1.921
Multi-Model Digital Literacy	AVE = 0.695, CR = 0.872, CVE=81.572 and E = 1.383			
MMDL1		0.808	-1.240	0.527
MMDL2		0.859	-1.251	0.755
MMDL3		0.833	-1.278	0.806
Behavioural Intention	AVE = 0.763, CR = 0.941, CVE = 41.934 and E = 4.474			
BI1		0.869	-1.635	2.043
BI2		0.869	-1.630	2.008
BI3		0.864	-1.615	1.869
B14		0.876	-1.513	1.486



BI5		0.889	-1.509	1.603
Usage Behavioural	AVE = 0.785, CR = 0.948, CVE=28.978 and E = 4.689			
UB1		0.890	-1.326	0.513
UB2		0.892	-1.329	0.696
UB3		0.889	-1.285	0.569
UB4		0.866	-1.252	0.630
UB5		0.892	-1.289	0.419

AVE: Average Variance Extracted = $\sum \rho^2 / n$, CR: Composite Reliability = $(\sum (\rho)^2) / (\sum (\rho)^2 + (\sum a))$, $a = 1 - \rho^2$, Factor Loadings < .500 were omitted Varimax with Kaiser Normalization

3.5.2.2 Discriminant validity

The approach introduced by Fornell and Larcker (1981) was applied to test for discriminant validity. This approach has been used by several empirical studies (Amankwa & Asiedu, 2022; Bossman & Agyei, 2022; Hanaysha & Al-Shaikh, 2022; Oluwajana & Adeshola, 2021).

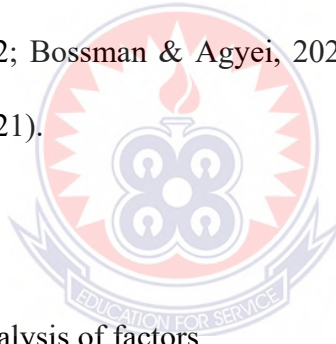


Table 3.3: Discriminant Analysis of factors

	PE	SI	OLF	MF	MMDL	BI	UB
PE	(0.868)						
SI	0.267	(0.872)					
OLF	0.202	0.293	(0.852)				
MF	0.221	0.124	0.08	(0.843)			
MMDL	0.579	0.198	0.209	0.171	(0.806)		
BI	0.158	0.155	0.488	0.104	0.191	(0.873)	
UB	0.059	0.115	0.138	0.405	0.123	0.045	(0.886)

Note: The diagonal scores (parenthesis) indicate the square root of AVEs.

The recommended criterion for discriminant validity, suggests that the square root of the AVEs of the latent variable should exceed the correlated value between the latent variable and any other latent for the discriminant validity condition to be accepted (Fornell & Larcker, 1981). Table 3.2, reports that the values in diagonal (in parenthesis) indicate the square root of AVEs square which is more than the value of the correlation between the variables, indicating the satisfaction of discriminant validity.

3.6. Common Method Bias

To ensure that, there is no common method bias in the data collected from the participants, the study employed collinearity or multicollinearity statistics. The study tested collinearity to find out whether predicting latent variable are not correlated. Since correlated independent variables cannot predict the dependent variables in a statistical model. In the present study, collinearity testing was done using the values of values tolerance and variance inflation factor (VIF) where Tolerance should be greater than 0.1 (O'Brien, 2007) and VIF less than 3.3 (Kock, 2015) or the value of VIF value should not exceed 10 (Hair et al., 1998). Table 3.5 indicated the values tolerance values range from 0.627 and 0.964 and variance inflation factor (VIF) values ranged from 1.038 to 1.596 which are lower than the expected threshold value. This indicates no perfect collinearity or multicollinearity among the predictor latent variables. Therefore, the multicollinearity problem does not exist.

Table 3.4 Collinearity Statistics

Dependent	Independent	Tolerance	VIF
BI	PE	0.627	1.596
	SI	0.865	1.156

	OLF	0.888	1.127
	MF	0.944	1.059
	MMDL	0.654	1.529
UB	BI	0.964	1.038
	MMDL	0.964	1.038

3.7 Testing for Data Normality

The normality of the collected data from the participants of the study was tested using Bartlett's test of Sphericity and Kaiser–Meyer–Olkin (KMO), skewness and kurtosis. The accepted threshold suggested significant statistics of $\chi^2 (496) = 9936.617$ ($p = 0.000 < 0.05$) and the KMO measure = $0.807 > 0.500$. Moreover, From Table 3.1, skewness and kurtosis indices ranged from -1.778 to -0.892 and 0.014 to 2.303 respectively which are less than |2.3| indicating normality of the collected data from the participants as suggested by Lei and Lomax (2005). As a result, the collected data from the participants were normally distributed.

3.8 Data Collection Procedure and Analysis

The survey questionnaire instrument was administered with the support of some employees working in the bank to increase the response rate and to make the collection easier. The questionnaires were administered in person and the respondents were allowed to use any time of their choice to complete the question items on the questionnaire.

3.8.1 Ethical Consideration

Research ethical considerations are established principles or certain codes of conduct that guide research practices, particularly when collecting data from human participants. Therefore, for ethical approval for the study, the research proposal was submitted to the

bank management for organisational review and approval of data collection at the start of the study. Moreover, Informed consent was considered in the data collection, where the participants were given all information needed to feel free to participate or withdraw from the study without negative outcomes or consequences to their refusal to participate in the study. The participants are guaranteed anonymity, where their personally identifying information will not be part of the data collection.

3.9 Data Collection Analysis Procedure

The analysis of the data collected was guided by a two-step method of analysis research model introduced by Anderson and Gerbing (1988). The study combined two statistical tools, namely Statistical Package for the Social Sciences (SPSS) version 23.0 and linear structural relation (LISREL) 9.30 version were used to analyse the data collected from the participants. The SPSS platforms offer a friendly interface and several robust features that allow data analysis in research quickly and bring about actionable insights from your data. The SPSS was used to test the internal consistency, content, convergent and discriminant validity. Also, LISREL is a statistical software package often used for structural equation modelling (SEM) to investigate the suitability, measure flexibility, and determine factors that impacted each other in a particular research model. The LISREL was employed to examine the model fitness and generate the structure model equation.

3.10 Measurement of the model Fit

In structural equation modelling analysis of a model, Kline (2015) suggested that at least the chi-square, the RMSEA, the CFI and the SRMR of the model should be reported.

Table 3.5: Structural Equation Model Indices of Goodness of Fit

Fit indices	Criteria	Research model
P-value	< 0.05	0.039
Chi-square/degree of freedom ($\chi^2/d.f.$)	≤ 3.00	2.338
Normed Fit Index (NFI)	≥ 0.90	0.994
Goodness of Fit Index (GFI)	> 0.95	0.996
Adjusted Goodness of Fit Index (AGFI)	≥ 0.90	0.906
Incremental Fit Index (IFI)	≥ 0.90	0.945
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.071
Comparative Fit Index (CFI)	≥ 0.90	0.996
Root Mean Square Residual (RMR)	< 0.08	0.0084
Standardized RMR	< 0.08	0.009

However, the current study reports the results of the additional seven measurements of absolute fit indices of the LISREL. Thus, p-value, Chi-square/degree of freedom, Normed Fit Index (NFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Incremental Fit Index (IFI), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR) and Standardized RMR provided an adequate model fit (p-value = 0.039, Chi-square/degree of freedom = 2.338, NFI = 0.994, GFI = 0.996, AGFI = 0.906, IFI = 0.945, Root Mean Square Error of Approximation (RMSEA) = 0.071, CFI = 0.996, RMR = 0.008 and SRMR = 0.009). The fit indices presented in Table 3.6 are within the criteria, suggesting the Goodness fit model.



CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter deliberates on the results of the study and presents a discussion associated with the research questions. The results of the study are presented in two sections. The first section presents participants' demographic information while the second part reports results and discussion associated with the research questions.

4.1 Participants' Demographic Information

Out of Two hundred and sixty-seven (267) who participated in the study, 48.31% (n = 129) were female and 51.7% (n = 138) were male as reported in Figure 4.1. and Table 4.1

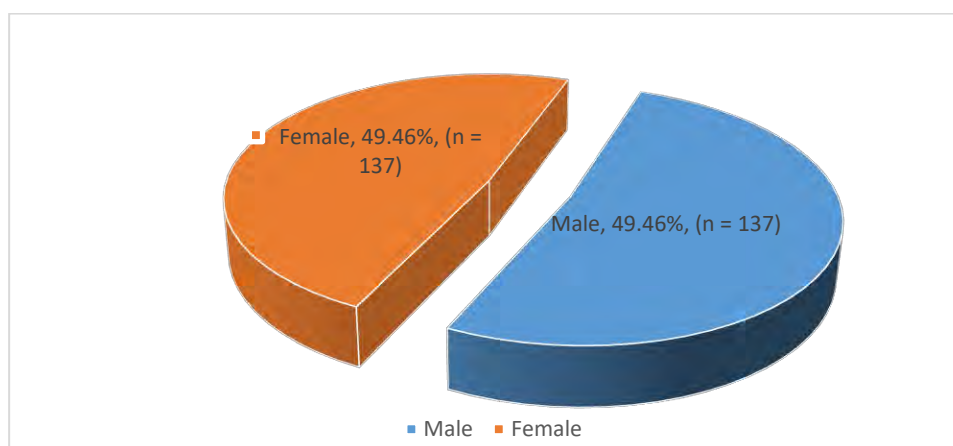


Figure 4.1: Participant Gender Distribution

Table 4.1 reported the age distribution frequency and percentages of participants' age. Out of 267 participants, 17.6% (n = 47), 34.5% (n = 92) and 23.6% (n = 63), 24.3% (n = 65) ranged Below 25, the 25 - 35 years, 26 to 46 years and above 46 years respectively. Moreover, the participants were asked about the year they have been a customer of the bank. Out of the 267 participants, 14.2% (n = 38), 30.7% (n = 82), 28.5% (n = 76), 14.2% (n = 38), 4.9% (n = 25) and 3.0% (n = 8) indicated that they are customer less than 1 year, 1- 4 years, 5 - 8 years, 5 - 8 years, 9 – 12 years, 13 -16 years and above 16 years respectively.

Table 4.1: Participants Frequency Distribution Category of gender, age and years of being a customer to the bank

Demography Category	Frequency	Percentage (%)
Gender		

Female	129	48.3
Male	138	51.7
Age		
Below 25	38	13.7
25 -35 years	31	11.2
36 – 46 years	97	35.0
Above 46 years	86	31.1
Years of being a customer		
Less than 1 year	38	14.2
1 – 4 years	82	30.7
5 – 8 years	76	28.5
9 – 12 years	38	14.2
13 – 16 years	25	9.4
Above 16 years	8	3.0



The participants were to report how long it takes them to secure the loan. From Figure 4.2. Out of the 267 participants, 4.5% (n = 12), 7.5% (n = 20), 35.6% (n = 95) and 52.4% (n = 140) were able to secure a loan from 1 – 2 days, 3 - 4 days, 5 - 6 days and about 6 days respectively as indicated in Figure 4.2.

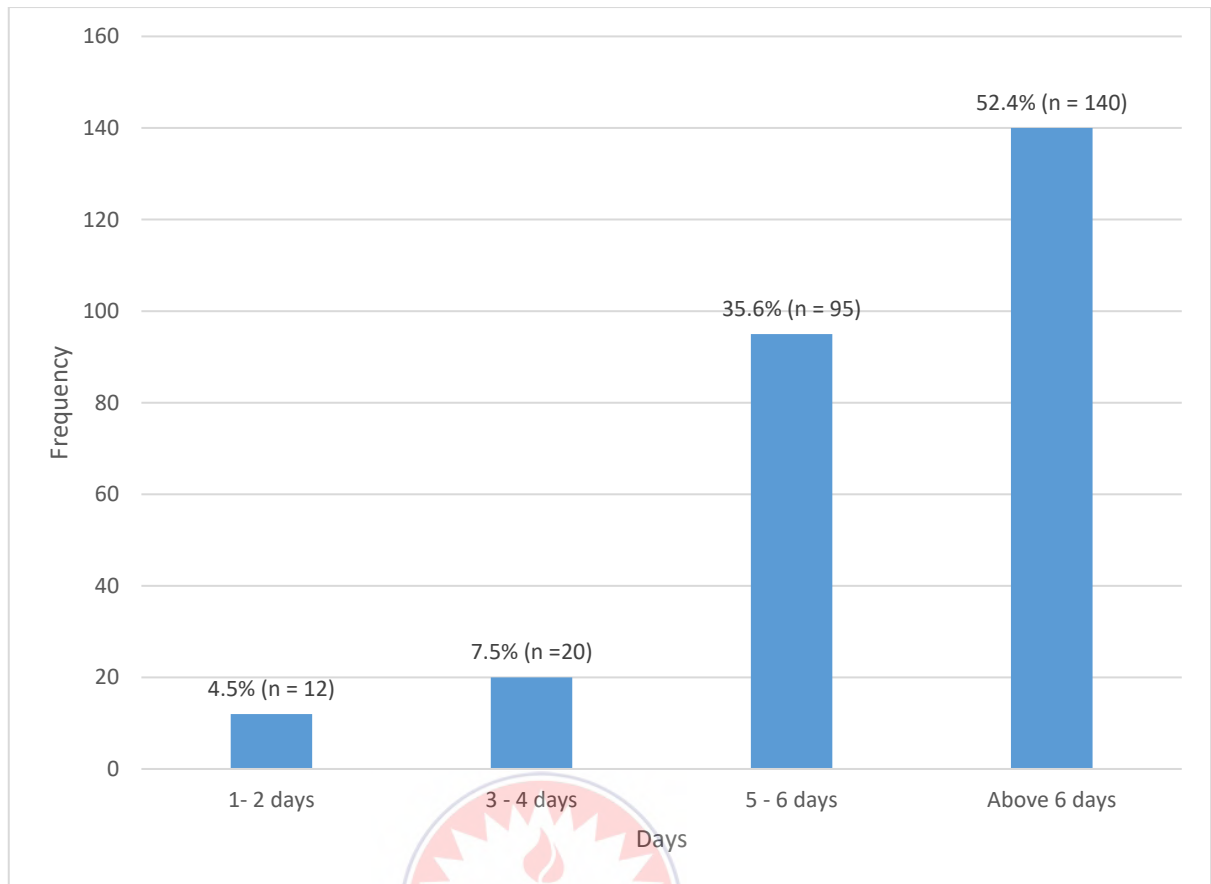


Figure 4.2: Days to secure a loan

4.2 Results and Discussions Related to Research Questions

4.2.1 Results and Discussion Related to Research Question One: *What are the effects of performance expectancy and social influence introduced by UTAUT on intention to use digital loan application systems in traditional banking?*

The results from structural equation modelling of path coefficients analysis as indicated in Figure 4.3 and Table 4.2. H2 was not supported. Thus, social influence ($\beta = 0.002$, $t = -0.079$, $p = 0.937 > 0.050$) has no significant effect on the behavioural intention to use digital loan application systems in traditional banking. This finding is contrary to the UTUAT theory, which suggested that people's behaviour to use technology is significantly affected by social influence (Venkatesh et al., 2003). However, H2 was

supported. Thus, Performance expectancy ($\beta = 0.069$, $t = 3.042$, $p = 0.002 < 0.050$) has a significant effect on the behavioural intention to use digital loan application systems in traditional banking. Therefore, this finding suggests that the customers of the traditional banking sectors believe that digital loan application systems will enable them to secure a loan as anticipated. This finding conforms to the UTUAT theory (Venkatesh et al., 2003), suggesting that performance expectancy influences the intention to use technology. In agreement, Jadil, Rana and Dwivedi (2021) reported in their study that performance expectancy appeared as the strongest predictor of intention. The finding is also consistent with the study conducted by Suroso and Wahjudi (2021), where it was indicated that the technology's usefulness is important to predict behaviour intention. This is also in line with the findings from the study conducted by Tam and Oliveira (2016).

4.2.2 Results and Discussion Related to Research Question Two: *What is the effect of message factors introduced by the Yale model of communication and persuasion on intention to use digital loan application systems in traditional banking?*

Research question two examines the effect of message factors introduced by the Yale model of communication and persuasion on the intention to use digital loan application systems in traditional banking. In Figure 4.3 and Table 4.3, the results from structural equation modelling of path coefficients analysis indicate that H3 is supported. That is, the message factors ($\beta = 0.644$, $t = 17.070$, $p = 0.000$) contribute significantly to behavioural intention to use digital loan application systems in traditional banking. This interesting finding suggests that message factors which include the type of appeal, explicitness of the appeal and order of argument have a significant effect on the intention to use digital loan application systems in traditional banking. Even though

Petty et al. (1987) in their study indicated that message factors tend to impact people's attitudes, this finding is unique in terms of the usage of a digital loan application system.

4.2.3 Results and Discussion Related to Research Question three: *What is the effect of online load fraud on the intention to use digital loan application systems in traditional banking?*

From Table 4.1 and Figure 4.3, H4 was supported. Thus, online load fraud ($\beta = 0.199$, $t = 5.011$, $p = 0.000 < 0.050$) has a negative significant effect on customer behavioural intention to use digital loan application systems in the banking sectors. Meaning, customer behaviour intention is not likely to be affected if the digital loan application system is found vulnerable to online fraud. This finding agrees with the study conducted Jansen & Van Schaik (2018), where they indicated that the behaviour of customers plays a significant role and may be influenced by online-banking fraud. Interestingly, to the best of the knowledge of the researcher, it appears that there is no study related to online load fraud, particularly in the field of digital loan application systems in banking.

4.2.4 Results and Discussion Related to Research Question four: *What is the effect of multi-modal digital literacy on the behavioural intention and usage behaviour of digital loan application systems in traditional banking?*

The findings of this study reported that H5 and H6 were supported as reported in Table 4.1 and Figure 4.3. Thus, the customer's behavioural intention ($\beta = 0.872$, $t = 37.655$, $p = 0.000 < 0.050$) and usage behaviour ($\beta = 0.486$, $t = 14.857$, $p = 0.000 < 0.050$) of digital loan application system is positively influenced by multi-model digital literacy. Meaning, that behavioural intention and usage behaviour are influenced when

customers can view, read, understand, respond to and interact with multimedia and digital texts. This finding is unique and therefore to the best of the knowledge of the researcher, no study has focused on multi-model digital literacy implications on the usage of the digital loan application system in financial sectors.

4.2.5 Results and Discussion Related to Research Question five: *What is the effect of customer behaviour intention on the usage of digital loan application systems in traditional banking?*

The findings of this study reported that H7 is supported as displayed in Table 4.1 and Figure 4.3. That is, the customers' behavioural intention ($\beta = 0.524$, $t = 14.063$, $p = 0.000 < 0.050$) has a positive and significant effect on the usage behaviour of using digital loan application systems in the banking sector.



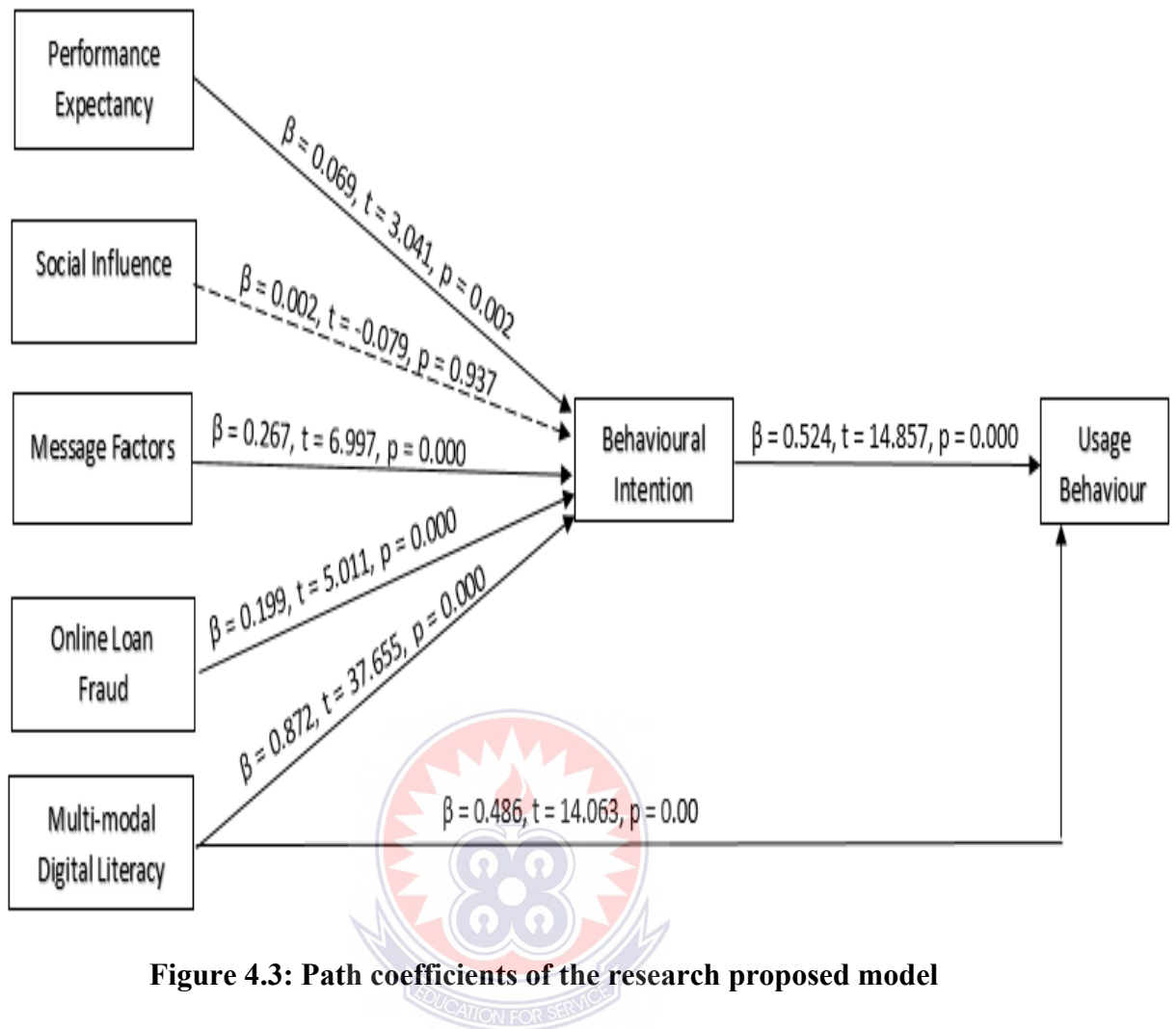


Figure 4.3: Path coefficients of the research proposed model

This finding supported the UTUAT model introduced by Venkatesh et al. (2003), where the study indicated that behavioural intention has a significant effect on the usage behaviour of technology in the study of information technology. This finding is also consistent with other studies which predicted the association between behavioural intention and usage behaviour. For instance, Oluwajana & Adeshola (2021) found that behavioural intention affects the usage behaviour of using computer collaborative learning. Furthermore, Chang et al. (2017) reported that behavioural intention is a predictor of students' usage of e-learning.

Table 4.2: Summary of the effect of coefficient path

Hypothesis	Coefficient (β)	T-value	P-value	Decision
H1: PE \rightarrow BI	0.069	3.041	0.002	Supported
H2: SI \rightarrow BI	0.002	-0.079	0.937	Not Supported
H3: MF \rightarrow BI	0.267	6.997	0.000	Supported
H4: OLF \rightarrow BI	0.199	5.011	0.000	Supported
H5: MMDL \rightarrow BI	0.872	37.655	0.000	Supported
H6: MMDL \rightarrow UB	0.486	14.063	0.000	Supported
H7: BI \rightarrow UB	0.524	14.857	0.000	Supported

Significance at $p < 0.005^*$



CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

This chapter discusses the summary of the study and the major findings. The chapter further presents the conclusion of the study, recommendations and future research implications for practice. It also highpoints some theoretical and policy implications.

5.1 Summary of the Study

The study examined factors affecting the usage of digital loan application systems in the traditional banking sector. The empirical study was based on the UTUAT and Yale model of communication and persuasion.

The following research questions are formulated to guide the study

1. What are the effects of performance expectancy and social influence on the intention to use digital loan application systems in traditional banking?
2. What is the effect of message factors introduced by the Yale model of communication and persuasion on intention to use digital loan application systems in traditional banking?
3. What is the effect of online load fraud on the intention to use digital loan application systems in traditional banking?
4. What is the effect of multi-modal digital literacy on the intention and actual usage of digital loan application systems in traditional banking?
5. What is the effect of customer behavioural intention on the usage of digital loan application systems in traditional banking?

The study employs a cross-sectional survey design with a quantitative approach to data analysis. The study used the survey questionnaire as a research instrument to collect data. The population for this study consisted of customers in selected banks in Ghana. However, customers in selected banks in the central region were the accessible population. Purposive sampling was employed to select 267 participants for the study. LISREL was used to generate a structuring modelling equation to answer the research questions with its associated proposed hypothesis.

5.2 Major findings

The following were the major findings of the study.

1. Performance expectancy introduced by Venkatesh et al. (2003) has a significant effect on customers' behavioural intention to use digital loan application systems in traditional banking sectors.
2. Social influence does not significantly affect the customer's behavioural intention to use digital loan application systems. This finding contradicts the finding of Venkatesh et al. (2003) which suggested that social influence predicts technology use.
3. Message factors introduced by the Yale model of communication and persuasion affect behavioural intention to use digital loan application systems in traditional banking
4. Online load fraud has a negative effect on the behavioural intention to use digital loan application systems in traditional banking
5. Multi-modal digital literacy has an effect on the behavioural intention and usage behaviour of digital loan application systems in traditional banking
6. Customer behavioural intention effect on the usage behaviour of digital loan application systems in traditional banking?

5.3 Conclusions

The main aim of the study was to examine the effects of performance expectancy, social influence, message factors, and multi-model digital literacy affects behavioural intention. It further examines multi-model digital literacy and behavioural intention affect usage behaviour. To the best of the researcher's knowledge, this is the first time such factors from the combined UTUAT and Yale model of communication and

persuasion theory have been employed to examine the use of digital loan application systems in the banking sectors, particularly in Ghana.

5.3.1 Theoretical Contribution

The present study integrates two theories namely the Unified Theory of Acceptance and use of Technology and the Yale model of communication and persuasion to examine the customers' use of digital loan application systems in the traditional banking sector. Online load fraud and multi-model digital literacy were introduced as new factors and added to two theories to examine the usage behaviour to use digital loan application systems in traditional banking sectors. Moreover, this present study contributes theoretically by extending Venkatesh et al. (2003) and Janis and Hovland (1959) on technology use in financial sectors. To the best of researchers' knowledge, this study is the first that combined the UTAUT model and the Yale model of communication and persuasion and extend with two factors, namely, online line fraud and multi-model digital literacy to investigate customer's intention and usage of the digital loan application system in developing country context of Ghana.

5.3.2 Implications for policy and practice

This research has productive implications for various levels of stakeholders in the banking sectors focusing on online loan application systems. The following are practice and policy implications for financial institutions, particularly banks.

Practice and Practice Implication for Performance Expectancy

The performance of technology employed in a banking setting influences a revolutionary change in customers' behavioural intentions. Thus the finding of the study revealed performance expectancy to be an important variable in forming customers' intention to use digital loan application systems in banks. Therefore, the management and the stakeholder dealing with the department of loan services should make sure the right technology for the online loan application is designed or purchased. Increasing loan application processes with technology is possible when the performance of the technology is improved. As result, the bank management should institute a system automation policy for the loan application systems where every part of the system is automated which should include the pre-qualification process, loan application, application and underwriting process, credit decision and disbursement of the loan to boost the confidence of online loan application users.

Practice and Practice Implication for Message factors

The finding of this study indicates that message factors including the type of appeal, explicit of appeal and order of argument contribute significantly to customers' intention to use digital loan application systems in banking sectors. This finding suggests that indicating that the higher the quality of the appeal included in the digital loan application system is, the higher the customers' intention to use the system to secure a loan. Therefore, digital loan application system messages should be stated clearly and in detail, leaving no room for confusion or doubt to stimulate an understanding and intentions of customers to comply with the use of a system. Financial Institutions are not created equally, but several of them follow the same procedure when is loan applications. Therefore, bank stakeholders in bank activities should best message

strategies to convince a customer to use an online loan application system to enhance borrowing in the banking sectors.

Policies Implication on Online load fraud

The finding of this study suggested that online fraud negatively affected the behavioural intention of customers to use digital loan application systems. Thus, online load fraud plays a crucial role in banking sectors and has a negative significant impact on customers' online borrowing intentions. For practice and policy implications, the management of the banks should implement online loan fraud prevention measures such as a well-designed fraud detection system and strengthen transactional data controls over authorizations. More so, the management of the bank should implement a policy that promotes customer education on online fraud detection. Online loan fraud can be prevented if customers are better informed about how to identify fraudulent activities and avoid them. More so, when customers have knowledge of online fraud and are conversant with the fraud dangers in question, they perceive the fraud as lower than if they have limited or no knowledge. Therefore, the banks should also work in conjunction with non-profit organisations, the private sector and law enforcement to provide online safety education related to loan applications to enable customers to identify fraudulent acts and protect themselves.

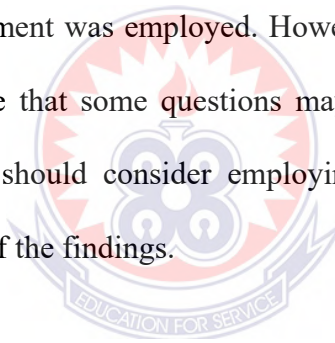
Practical and policy Implication for Multi-model digital literacy

Finally, the study revealed that Multi-model digital literacy is the most important predictor of customers' intention to use digital loan applications in the banking section. That is if customers are able to the ability of an individual to make meaning through observing, reading, understanding, interpreting, responding to, and interacting with multimedia and digital texts on financial issues, he or she is like to have a positive

behavioural intention to use the online loan application systems. Therefore, policymakers at banks should find a strategic means to strengthen customers' education on digital content related to the loan application. This could give the customers the information, skills, and abilities they need to be informed users of the digital loan application system. Educating customers would enable them to realize how the system can be put to good use for them to start exploiting them to their full potential. Through education, customers using a system will have some experience and knowledge to deal with challenges that may confront during the usage of the system.

5.4 Limitations and Recommendations for Further Studies

Despite the important and systematic approach of this present study, a questionnaire survey as a research instrument was employed. However, the survey questionnaire has the tendency or the chance that some questions may be ignored or left unanswered. Therefore, further studies should consider employing other research instruments to expand the generalization of the findings.



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APPENDIX A

Instructions

Thank you for taking the time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtful and truthful responses will be greatly appreciated. Data will be used for research purposes only. Your responses will be kept completely **confidential**. Please read the following statements and kindly provide the information required.

Please, tick the option that best reflects how you associate with each of the following statements.

PART 1 – Background Information

1. Gender Female Male
2. Age Below 25 25-35 36- 46 Above 46
3. Years of being a customer Less than 1 year 1-3 years 4-6 years
 7-9 years More than 10 years
4. Have you taken a loan before Yes No

5. How long did it take to secure the loan [] 1 – 2 days [] 3 – 4 days []
5 – 6 days [] above 6 days

Rating Scale: Strongly Disagree (SD = 1), Disagree (D = 2), Undecided (U= 3), Agree (A = 4) and Strongly Agree (SA = 5)

Construct	Code	Item	Source
Performance expectancy (PE)	PE1	"I find digital loan application system (DLAS) useful in my loan application"	Abbad (2021), Raffaghelli et al. (2022)
	PE2	"Using DLAS will enable me to accomplish my loan process more quickly"	Venkatesh et al. (2011) And
	PE3	"Using DLAS increases my loan productivity"	Venkatesh et al. (2003)
	PE4	"The use of DLAS increases my chances of getting a better loan from my bank "	
	PE5	"I find the DLAS platform useful in my banking services"	
	PE6	"In general, DLAS will help in my loan process"	
Social Influence (SI)	SI1	"People who influence my behaviour think I should use DLAS"	Abbad (2021), Raffaghelli et al. (2022)
	SI2	"People who are important to me think that I should use DLAS"	Venkatesh et al. (2011)
	SI3	"The lean officer in my bank is helpful in the use of DLAS"	

	SI4	other customers at the bank think the system is good	
	SI5	"In general, the bank has supported the use of DLAS"	
Online loan fraud	OLF1	Online loan fraudsters exaggerate the benefits and characteristics of their offerings	Román, S. (2010)
	OLF2	Online loan fraudsters use misleading tactics to convince customers to come for a loan	
	OLF3	It is not entirely truthful about what online loan fraudsters offer	
	OLF4	Online loan fraud attempts to persuade me to come for a loan	
Message Factors	MF1	The message of DLAS mainly describes the loan services, benefits and value	Wu and Wang (2011)
	MF2	DLAS message spreads a certain atmosphere, emotion and feeling	Kotler and Keller (2008).
	MF3	I find DLAS message plainness and ambiguity	
	MF4	DLAS the message send and receive messages argument is orderly	
Multi-Model Digital Literacy	MM	I support multiple platforms for digital reading and data	Lin and Lin (2019)
	DL1		
	MM	I like a platform that provides interaction with multimedia and digital texts	Oluwajana and Adeshola (2021)
	DL2		

	MM DL3	The platform enables me to be more active in a discussion via the use of my choice of application available	
Behavioural Intention	B11	I intend to use the digital platform to improve my loan application effectiveness in the future	Lin and Lin (2019)
	B12	I plan to use the digital platform to improve my loan application service in the future	
	B13	I plan to use the digital platform for my loan application in the future	
	B14	I have the intention to choose DLAS over the traditional application	
	B15	The DLAS is the best to use in future	
Usage Behaviour	UB1	I frequently use the platform to discuss the project with my group members	Lin and Lin (2019)
	UB2	I often follow the interaction of other students through the platform	
	UB3	I often review my class assessments on the Teams platform before the final exam	
	UB4	I will use the DLAS for my loan applications	