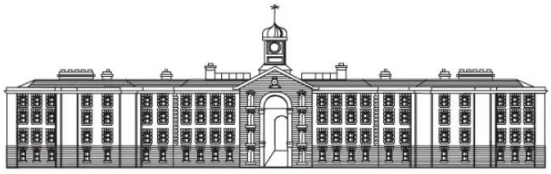

Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Population in India

Research dissertation presented in partial fulfilment of the requirements
for the degree of
MSc in Accounting & Finance Management

Griffith College Dublin

Dissertation Supervisor: **Dr. George Latridis**

Student Name: Javad Muneer Pallipath

Date of submission: 06-09-2024

Candidate Declaration

I, Javad Muneer Pallipath, hereby certify that the dissertation entitled " Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Population in India," submitted for the degree of MSc in Accounting and Finance Management, is the culmination of my own work. Throughout this research, I have diligently adhered to academic integrity standards, ensuring that any references to the work of others are duly acknowledged.

In the pursuit of this dissertation, I have conducted thorough research and analysis, drawing upon various scholarly sources and methodologies. Any contributions from external sources have been appropriately cited, recognizing the intellectual property of others. I affirm that this document represents my original insights, interpretations, and conclusions derived from my personal academic endeavors.

Student Number: 3136041

Supervisor Name: Dr George Latridis

Student Signed: Javad Muneer Pallipath

Supervisor Signed:

Date: 06-09-2024

Acknowledgements

I extend my heartfelt gratitude to Dr. George Latridis for his exceptional guidance and unwavering support throughout the development of this research. His insightful feedback and readiness to address my numerous inquiries have been instrumental in shaping the quality of this study. Furthermore, I would like to express my sincere gratitude to Dr. Garatte Ryan, my research faculty, for his insightful advice and knowledge, which greatly influenced the course of this study. Their commitment to creating a stimulating learning atmosphere has really aided my education, and for that I am especially grateful. I am also deeply grateful to all the participants who took the time to engage with the survey. Their valuable contributions and willingness to share their insights have greatly enriched this research.

As I complete my MSc in Accounting and Finance Management, I wish to express my profound appreciation for the stimulating learning environment and the opportunities for personal and professional growth provided by Griffith College. The knowledge and experiences gained throughout this program have been immensely beneficial.

Finally, I would like to acknowledge the support of my family and friends. Their encouragement and understanding have been a crucial foundation of my success throughout this academic journey.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

DFL: Digital Financial Literacy

OFL: Objective Financial Literacy

SFL: Subjective Financial Literacy

PMJDY: Pradhan Mantri Jan Dhan Yojana

UTAUT: Unified Theory of Acceptance and Use of Technology

SPSS: Statistical Package for the Social Sciences

RBI: Reserve Bank of India

PMGDISHA: Pradhan Mantri Gramin Digital Saksharta Abhiyan

VISAKA: Village Self-Employment and Knowledge Awareness Campaign

ABSTRACT

Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Populations in India

Javad Muneer Pallipath

This study investigates the impact of financial literacy on the adoption of digital banking services among rural population in India. The primary objective was to understand how both subjective and objective financial literacy influence rural users' willingness and ability to engage with digital banking technologies. To achieve this, a quantitative approach was employed using structured surveys to collect data from rural participants. The research utilized SPSS software for data analysis, focusing on regression techniques to explore the relationships between financial literacy and digital banking adoption.

The findings reveal a nuanced impact of financial literacy on digital banking adoption. Hypothesis 1, which posits that subjective financial literacy positively influences digital banking adoption, is partially supported. Specifically, understanding financial terminology used in digital banking was found to significantly affect adoption rates. However, other subjective factors, such as confidence in financial management and decision-making trust, did not demonstrate a significant impact.

Conversely, Hypothesis 2, suggesting that objective financial literacy positively impacts digital banking adoption, is strongly supported. The study identifies significant predictors of digital banking adoption, including financial calculation skills, understanding of financial products, and awareness of financial risks. These factors align with the hypothesis and underscore the critical role of actual financial knowledge in facilitating digital banking usage.

Overall, the results highlight that while subjective financial literacy contributes to digital banking adoption, objective financial literacy has a more pronounced effect. These insights suggest that while improving subjective financial knowledge is valuable, enhancing objective financial skills is crucial for promoting digital banking, especially in rural areas. The study provides valuable guidance for designing targeted financial education initiatives and strategies to improve digital banking adoption among rural populations in India.

The research underscores the need for comprehensive financial education programs that address both subjective and objective aspects of financial literacy. Future initiatives should focus on practical financial skills and awareness of financial risks to effectively promote digital banking adoption in rural communities.

INTRODUCTION

The evolution of technology has impacted the improvement of many fields, and the financial sector has undergone changes in the use of digital banking services (Barroso and Laborda, 2022). The purpose of this research will be to establish the relationship between financial literacy and the adoption of digital banking among the rural residents of India. In this chapter, the reader will be provided with information about the background and justification for the study, the statement of the research problem, the research question and aims. Also, the theoretical framework will be discussed, and the literature review will be provided to give the reader a clear understanding of the topic.

Background

Digital banking has rapidly become one of the most revolutionary changes in the financial industry especially in the developing world in the recent past, especially in India. The use of the digital banking services has been because of the following factors, one of which is financial literacy which determines the user's capability and willingness to use the technologies (Prabhakaran & L. Mynavathi, 2023). Therefore, financial literacy has two components, which are the cognitive and the affective, and these affect the uptake of digital banking in different ways particularly in the rural areas where the knowledge and access to financial services may not be the same.

Subjective financial literacy is a measure of people's perceived knowledge and confidence in financial matters and about digital banking in this study. Another element of consumers' financial literacy is the personal beliefs and attitudes towards the financial tools and services which play an important role in the use of digital banking services. In rural India where the digital technology is still in its nascent stage of penetration, the self- perceived financial literacy and digital literacy has a significant influence on the extent of utilization of such services (Sindakis and Showkat, 2024). For example, consumers with financial literacy are inclined to use digital banking services since they believe in handling digital transactions and comprehending online financial products (Lusardi & Mitchell, 2014).

In contrast, the objective financial literacy refers to the factual knowledge and practical competencies in the financial matters including the budgeting, financial planning and knowledge about the financial instruments (Nejad and Javid, 2018). This dimension of financial literacy is very important in the use of digital banking because it has a material

foundation in the decision-making process of users' financial activities and investments. The analysis of objective financial literacy revealed a positive relationship between the levels of financial literacy and the effectiveness of financial decisions as well as the engagement in digital financial services (Klapper & Lusardi, 2020). In the context of the Indian rural people, there is scope to improve the objective financial literacy and thereby the ability to use the digital banking services effectively while filling the gap between availability and usage of such services (Mandal and Garima, 2023).

India has made remarkable progress in digital banking due to schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY) and Digital India that seeks to enhance the financial inclusion and awareness (Rastogi, Sharma and Panse, 2020). However, the rural segment still remains constrained by issues to do with digital literacy that affects the uptake of these services (Sindakis and Showkat, 2024). Research has also shown that despite the higher percentage of digital banking users in the urban areas than the rural areas, the latter's uptake is significantly low because of low levels of perceived and actual financial literacy (Sindakis and Showkat, 2024). Thus, the knowledge of the influence of perceived FL on the propensity of the rural population to use digital banking services is crucial to design intervention strategies. Thus, identifying the impact of self-efficacy of financial literacy on digital banking will allow policymakers as well as the banking sector to design improved educational programs and advertisements more effectively (Abdallah, Tfaily and Arrezou Harraf, 2024). Similarly, the actual financial literacy that can be enhanced through the introduction of the formal courses and training can enhance the use of the digital banking services since it enhances the capability of the rural user to engage with the digital financial services (Ekasari and Ansori, 2024).

Research Aim

The purpose of this research is to identify the influence of financial literacy on the usage of digital banking services in the rural area of India. Specifically, the study intends to explore the extent to which the rural population's perceived and actual financial literacy, as perceived and actual attitudes, beliefs, and knowledge about finances, influence the use of digital banking technologies.

Research Objectives

The objectives of this research are:

1. **To assess the impact of subjective financial literacy on digital banking adoption in the rural population of India.**

This objective will seek to find out if the level of subjective financial literacy influences the use of digital banking applications among the rural people. Perceived financial literacy also has a significant impact as it influences people's attitudes and readiness to engage in digital banking. Research has revealed that people with higher levels of subjective financial literacy are more inclined to use new technologies in managing their finances since they feel more capable of handling their finances through technology (Phuong Dinh, 2022; Prabhakaran and L. Mynavathi, 2023). It is imperative to grasp these perceptions toward developing appropriate financial literacy programs to support digital banking uptake in rural regions.

2. **To assess the impact of objective financial literacy on adopting digital banking services in the rural population of India.**

This objective focuses on the relationship between objective financial literacy, which is the actual knowledge and skills in the management of finances including budgeting, planning for the finance, and saving and the usage of the digital banking services. Practical financial literacy is important because it prepares people with the necessary skills needed for operating banking technologies. Studies show that objective financial literacy is positively associated with the adoption of digital finance since people are in a better position to comprehend and apply these technologies (Prabhakaran and L. Mynavathi, 2023; Lusardi & Mitchell, 2014). By comparing pre and post-test scores on objective financial literacy, the study seeks to establish areas of deficient financial understanding that could be targeted to enhance the uptake of digital banking in the rural areas.

Research Questions

1. What is the impact of financial literacy on the adoption of digital banking services among the rural population of India?

Research Problem

As the digitization affects diverse segments of society, the financial sector, especially banking has also experienced changes (Prabhakaran and L. Mynavathi, 2023). Currently, there are many digital services from banks such as internet banking, mobile banking, digital money and investment (Murinde et al., 2022). These innovations have complemented the existing banking services in the developing countries to increase the use of digital banking channels as indicated by Alsmadi et al., (2023). The Fintech in India has changed the

population in a way of digital revolution and has positioned India in the forefront of financial inclusion through technology (Kukreja et al., 2021).

However, financial illiteracy remains a significant barrier to digital banking services in the rural regions of India even with the current innovations. In Chan et al., (2022) it was found that to use digital banking, people require a basic understanding of how the financial system works. Nevertheless, knowledge regarding the relationship between financial literacy and digital banking adoption is limited, particularly concerning the Indian rural population. It is revealed that the given demographic has a difficult time using the instruments offered by digital banking, which may negatively affect their financial accessibility.

It is therefore important to establish the relationship between financial literacy and the use of digital banking services. Understanding rural customers' perception and usage of digital banking services is crucial to financial services providers. This research will help to fill this gap by examining the connection between financial literacy and digital banking in rural India. Understanding these factors will enable policy makers and banking institutions to formulate viable policies that will enhance the level of financial literacy as well as advance the use of digital banking in the rural areas.

Research Gap

Although India has seen a tremendous growth in the use of digital banking and financial services, there is lack of literature regarding the importance of financial literacy in the process especially in the rural areas. Previous studies primarily target either urban consumers or consumers in general, hence little is known concerning the experience and needs of rural consumers (Kukreja et al., 2021; Chan et al., 2022). Besides, the literature tends to focus on the technological and infrastructural factors of digital banking adoption, excluding the function of financial literacy on users' behaviour and choices (Murinde et al., 2022). This gap is relevant because the financial literacy rate in the rural areas which is usually low might need different strategies to embrace the digital banking. Hence, this study intends to fill this research gap by focusing on the relationship between both self-reported and actual financial literacy on the usage of digital banking services in rural India, and the results of which could be useful to inform policies and education in the right direction.

Research Contribution

The present research work is an empirical study to investigate the impact of financial literacy on use of digital banking services in rural area of India employing quantitative research

method. Expanding the framework that Corley and Gioia (2011) have provided for organizational research, the study aims to contribute to the development of the theory and practice in the field of financial literacy and promotion of digital banking services for stakeholders.

Academic Implications

In line with Corley and Gioia (2011) call for more theory development and identification of research gaps, this study aims to extend knowledge of how different levels of financial literacy, perceived and actual, affect the uptake of the digital banking services in the rural regions of India. Hence, using the literature review as a methodology, the study will attempt to synthesize the theoretical models which have been proposed in the past and add new models that will be more relevant to the context of rural Indians. Besides, it contributes to the development of theoretical knowledge and offers a deeper analysis of the socio-economic determinants of the digital banking choice.

Methodologically, the study will utilize reliable quantitative approaches like questionnaires and statistical tools (for example, regression analyses, structural equation modelling) to support theoretical hypotheses. In this regard, the study aims at generating new knowledge that fills the gap in the existing body of literature on financial literacy and digital banking by quantitatively measuring the relationships between the two constructs for refinement of theory and presentation of future research agenda.

The findings of this study will be targeted to publish in the scholarly journals related to finance, economics, and digital innovation to enhance the understanding of financial literacy's effect on the use of digital banking and its consequences on the economy. Through publishing the results in well-known academic journals, the work is intended to encourage additional academic research on the best practices for increasing people's financial literacy and adopting digital banking services.

Practitioner Implications

Besides, this research has implications for practitioners, such as policymakers, financial educators, and organizations that support the spread of digital banking in rural regions of India. The study seeks to identify the specific channels that are impacted by financial literacy so as to guide the development of relevant financial literacy programs and policies for encouraging the use of digital banking services. These findings may aid practitioners to develop more appropriate interventions which are more aligned to the socio-economic

environment of rural India in order to enhance economic access as well as financial well-being.

It is also important to note that the research might uncover how financial institutions can enhance the relevance of the services to the rural consumers and their capabilities. The study can be useful for practitioners to know how to develop the digital products and services of banking that would meet the consumers' needs and as a result, enhance customer satisfaction to support the economic development of the rural people.

Thus, this research provides a theoretical framework and literature review on the role of financial literacy in the use of digital banking services in the rural areas of India. Thus, the present research will provide empirical and practical knowledge and recommendation that will be useful to the stakeholders for enhancing the financial position and the sustainable economic development of the region.

LITERATURE REVIEW

The increase of the use of digital banking products in the performance of various operations highlights the need for an adequate level of financial literacy among consumers. Financial literacy is the ability to understand financial concepts, make appropriate decisions, and have the confidence to do so, which is essential when functioning in today's financial environment (Lusardi & Mitchell, 2014). Since the concept of digital banking is still not fully developed especially in the rural areas of India the dimensions of financial literacy becomes very important. These papers have described the issues of how financial literacy influences consumers' adoption of digital banking from the individual and environmental perspectives. Such subjective measure of financial literacy, or people's estimate of their financial literacy is more accurate when it comes to the prediction of the financial behaviour and performance (Koskelainen et al., 2023). These dimensions will be discussed in this literature review with reference to their impact on digital banking adoption particularly in rural regions, and the new research directions.

Concept of Financial Literacy

Financial literacy refers to the understanding, capability, and self-confidence that one has in handling personal financial matters effectively (Lusardi & Mitchell, 2014). However, defining financial literacy is a task that is filled with difficulties because of the variety of opinions on the subject and the constant changes in the financial system (Remund, 2010; Worthington, 2016). Financial literacy is commonly defined as the capacity of using financial knowledge and financial skills in personal finance. Lusardi and Mitchell (2014) define it as the capability of understanding the economic information and make relevant decisions on matters concerning financial planning, wealth, pension and credit. This broad definition also emphasizes the need of not only learning the basic concepts of finance, but to be able to apply them to one's own financial situation for the rest of his life.

Chen and Volpe (1998) posit that financial literacy requires the understanding that is needed in order to make appropriate financial decisions. Some of them posit that poor financial literacy is linked with poor financial behaviours such as high levels of indebtedness and poor financial management. In support of this view, Huston (2010) notes that financial literacy might affect people's capacity to make sound financial decisions and, therefore, their financial outcomes. According to Lusardi (2019), financial literacy includes a range of competencies: knowledge of financial matters, financial literacy and financial literacy. This

wide view includes even such simple skill as calculating the interest on a loan and as basic financial skills that are needed to plan the future expenses and save money. In the same way, Atkinson and Messy (2012) define financial literacy as the ability that has to do with financial well-being such as budgeting, saving and managing of debts.

A more complex definition is given by Buckland (2010) who differentiates between two aspects of financial literacy: a 'narrow' and a 'broad' one. In a narrow sense, financial literacy refers to the ability to use the learned financial knowledge in a normative way. The second meaning is more general and includes assessment of the financial systems, appreciation of socio-economic circumstances and abilities such as bargain and risk taking (Buckland, 2010). This view is in concordance with the demand that consumers are not only expected to gain knowledge about financial products but also utilize them for enhancement of economic welfare.

According to Lusardi and Mitchell in a study conducted in 2014, the level of financial literacy determines the decisions that one makes regarding his or her finances and the behaviours that the person embraces. From this relationship one is forced to conclude that financial literacy is a very powerful determinant of financial and economic performance. This is supported by Mandell (2008) who noted that the decision-making entails the evaluation of the different financial assets and making of decisions that would be in the long-term benefits of the business.

However, there are some criticisms that has been made by some scholars on the assessment and use of financial literacy. Lusardi (2019) and Hung et al. (2009) have pointed out that the financial literacy has been described as financial awareness and financial cognition. But not only the definition and recognition of the financial concepts and ideas, but also the ability to solve various problems with their help. For example, financial literacy is the act of releasing financial details while financial education is the act of sharing the ascertained knowledge. The Financial Consumer Agency of Canada defined financial literacy as the capacity to make sound financial decisions and that would include knowledge, skill, and confidence. This definition attached much importance to self-confidence as one of the sub-processes of the financial management process that is a key part of the achievement of the financial fitness.

Nevertheless, this problem persists due to the fact that there is no commonly accepted definition of financial literacy. This is because there are differences in the perception of what is relevant and valuable knowledge and skills in the field of finance. Thus, with the growth

of financial markets and its tools, there is a necessity to create a stable and effective notion of financial literacy that would reflect the economic reality of the present day (Fernandes et al., 2014; Worthington, 2016). To put it in simple terms, financial literacy can be described as the ability and knowledge of an individual or a community to manage finances properly; however, the definition of the term is debatable among scholars and practitioners. The idea encompasses knowledge of the financial concepts, use of such knowledge in the decision-making process and the demonstration of confidence in financial activities. Given that the nature of financial systems is constantly changing, the continued research and development of the dominant definitions of financial literacy will prove essential to guaranteeing that individuals can adequately engage and profit from the progressive changes to financial environments (Lusardi & Mitchell, 2014).

Dimensions of Financial Literacy: Subjective vs. Objective

Financial literacy encompasses three critical dimensions: financial literacy, which encompasses knowledge, behaviour and attitude (Banthia & Dey, 2022). These dimensions are interrelated with each other that shape the ways people provide financial management and monetary choices. Knowledge of these dimensions helps to comprehend the impact of financial literacy on the management of personal finances and people's economic condition.

Financial Knowledge

Financial knowledge forms the foundation of financial literacy. It refers to a person's awareness about some of the financial concerns such as expenditure, savings and investment among other ones (Arifin, Kevin and Siswanto, 2017). Yahaya et al. (2019) in their recent study reveal that enhanced FL influences the financial behaviour and attitudes. For example, the study by Chowa, Despard & Osei-Akoto (2012) shows that individuals with high levels of financial literacy have a better understanding of risks and the ability to make sound investment decisions. They also get higher life satisfaction due to better financial regulation and budgeting. This goes to show that there is need for improvement in the financial literacy that is used in improving the ability to make proper financial decisions.

Financial Behavior

Financial behavior combines the principles of behavioral and cognitive psychology with the conventional finance to explain why people may make undesirable financial decisions (Bai, 2023). It encompasses matters concerning the preparation of a budget, saving, investing and

the management of credit. Studying shows that financial behavior is an immediate result of financial knowledge and financial attitude. Those people who have sound financial literacy and have favorable financial beliefs are more inclined to be financially responsible by paying bills on time and making wise investment decisions (Moko, Sudiro and Kurniasari, 2022). On the other hand, low financial literacy results in poor financial management and, therefore, increased financial pressure (Lusardi, 2019).

Financial Attitude

Financial attitude can be defined as the perception that a person has regarding the management of financial affairs. It shows how those individual handles and perceives financial difficulties and choices, which defines his or her financial conduct (Ameliawati and Setiyani, 2018). Overall financial well-being is usually improved when a person assumes a positive financial outlook and approaches financial problems and issues in a positive way (Adiputra and Patricia, 2019). On the other hand, negative financial attitude results to reckless expenditure and poor financial management (Sugiyanto, 2019). Therefore, it is necessary to build a positive financial attitude to be able to manage one's financial resources well and attain financial sustainability in the long run.

Thus, the interaction of financial knowledge, financial behavior, and financial attitude is crucial for the study of financial literacy. Research reveals that regardless of the level of financial literacy, one will not engage in good financial behaviours if the financial attitude is negative (Mireku, Appiah and Agana 2023). For instance, while the level of financial literacy is high, the attitude towards financial planning is negative; this implies that even if one is financially literate, he or she cannot manage his or her finances properly (Jali et al., 2023). On the other hand, positive attitude towards it even if there is no enough knowledge about it will lead to right decisions concerning finances provided there is enough knowledge and financial tools.

Financial Literacy: Subjective Aspects

Subjective Financial Literacy (SFL) is an understanding of the extent to which an individual feels financially literate. Subjective factor is also crucial in explaining how people manage their financial condition, and their financial position in general (Koskelainen et al., 2023). Several studies have indicated that SFL could be a better predictor of financial behaviour than the actual content knowledge. Woodyard and Robb (2016) therefore asserted that perhaps, the more structured and standardized measures of financial literacy may not be as

effective in the prediction of future financial behaviors or choices as the more individual and created ones. This assertion emphasizes the notion that perceptions of financial competence are the primary determinants of financial actions and financial mentality. However, to gain a more complete understanding of the concept under consideration, it is imperative to consider both, the subjective and the objective characteristics of financial literacy. In the same study, Allgood and Walstad (2016) also stressed that using both factual and self-report data would give a better picture of the respondents' financial literacy, beliefs and self-confidence. This approach is particularly relevant especially in the case of the impact of financial literacy, which is comprised of elements such as, e-banking.

A few studies published more recently provide some information about the subjective side of financial literacy. For instance, Morgan and Trinh (2020) also noted that there was a positive relationship between financial literacy and awareness of fintech in Vietnam, albeit moderate with regard to the usage of fintech, which suggests that the perceived level of financial literacy may influence the use of fintech in another way. Yet, as Jünger and Mietzner (2020) also noted, the extent of trust in technology and financial knowledge impacted the German consumers' choice of fintech, which implies that objective financial literacy affects technology adoption. It is therefore seen that SFL involvement is not only restricted to the financial behavior; it influences the financial satisfaction and consequently the financial health. Using the study by Lind et al. (2020), it was established that there is a positive correlation between the subjective financial literacy or the self-assessed financial knowledge and different aspects of financial well-being such as financial strain and financial resilience. In support of this finding, Woodyard and Robb (2016) conducted a study and realized that those with higher level of subjective financial knowledge were more likely to express higher level of satisfaction in their financial status than those with higher objective financial knowledge but low subjective self-confidence.

When it comes to the use of digital banking products by the rural people in India, the notion of financial literacy, specifically the subjective component, is rather appropriate. Nevertheless, rural population is still lower in terms of adoption of digital financial instruments, this can be due to the lack of objective knowledge and the perception of the same can also be lacking (Yang, Wu and Huang, 2023). Of such challenges, one could be the lack of confidence and trust that customers have in the digital banking platforms (Chan et al., 2022). Chan et al. (2022) notes that there is a likelihood of skepticism that may affect the

uptake of the fintech, and the level of financial knowledge does improve the level of trust in the fintech. Skepticism arising from perceived financial literacy can therefore be a barrier to the uptake of digital banking services. The above-mentioned problem of India depicts the actual and the perceived state of financial literacy. For example, objective financial literacy at the rural population is low, but subjective perceived financial self-efficacy is not. Analyzing the results that were received during the study conducted by the NCFE in 2019, it was found out that only 27% of the respondents reached the minimum level of financial literacy; nevertheless, regional differences were revealed in terms of objective knowledge and self-efficiency. This gap therefore has to be addressed with more real financial literacy programs that could correspond to the perceived as well as the real knowledge that would enhance the use of digital banking. Noticeably, the subjective financial literacy is most important for the rural people of India for boosting the level of subjective financial self-efficacy to increase the utility of the digital banking, as well as the financial health of the people (Mandal and Garima, 2023).

Financial Literacy: Objective Aspects

The objective financial literacy (OFL) can be defined as a level of financial literacy an individual has obtained (Nejad and Javid, 2018). Thus, it is possible to suggest the following tests in order to assess the degree of efficiency of OFL in the given context, namely, the standardized ones and questionnaires that would provide numerical references for the approximate level of financial literacy. The literature review in this research study reveals that decision makers who have higher OFL are more accountable for their decisions (Woodyard & Robb, 2011). For instance, the finding by Hadar et al (2013) reveals that higher OFL is associated with lower risk taking in the investments and this provides evidence that improved financial literacy results to more cautious financial behaviors.

OFL is quite useful particularly for handling the rural people of India with a lot of value. This accounts for the disparity in the extent of financial literacy, in which people are likely to participate in the utilization of financial instrument and/or service in different measures. For example, in the NCFE (2019) survey, in addition to 49% of the respondents passing the minimum score in objective financial literacy, many of them still remain under informed. This can be evidenced by the fact that rural households do not incur much on the digital banking solutions because they cannot afford to learn more about it because of their low OFL. One should note that the improvement of the objective financial literacy is not only the

financial choice but also the financial behaviour. Based on the work conducted by Ramalho and Forte (2019), OFL has a direct impact and an indirect impact on financial behaviour. In particular, OFL enhances the ability to make appropriate financial decisions, thereby eradicating credit outside the conventional financial institutions, which is prevalent in the rural regions of India. This relationship also highlights the necessity to improve OFL to improve the financial literacy so as to improve the utilization of the formal financial services (RBI Household Finance Committee, 2017). According to the RBI Household Finance Committee (2017), the demand for financial products in the rural areas is still very low, and this is an indication that there is a lack of financial literacy that can be addressed by increasing OFL.

Recent research also supports the notion that increasing OFL leads to better financial performance. Besides, there was a positive relationship between OFL and the financial status including increased rates of having an emergency fund and better management of the finances as highlighted by Allgood and Walstad (2013). The result of this study will be of utmost benefit to the rural people of India as the enhancement of OFL can lead to better financial stability and also increase the use of digital banking services. OFL plays a crucial role in the financial flow and decision-making. The influence of OFL on the use of digital banking services among the rural people of India also points towards the direction that there is a requirement of enhancing OFL through effective financial literacy campaigns. In this way, the identified gaps in financial literacy can help policymakers and financial institutions to promote the use of digital banking and other formal financial services to increase financial inclusion and stability in rural regions.

Table 1: Comparative Analysis of Subjective and Objective Financial Literacy

Author(s)	Focus Area	Key Findings
Lusardi & Mitchell (2014)	Objective Financial Literacy	Higher financial literacy levels are associated with better financial behaviors and decision-making abilities.
Chen & Volpe (1998)	Objective Financial Literacy	Financial literacy is crucial for sound financial decision-making and is linked to problematic financial behaviors when lacking.
Woodyard & Robb (2016)	Subjective Financial Literacy	Subjective perceptions of financial capability are strong predictors of financial behaviors and decision-making.
Morgan & Trinh (2020)	Subjective Financial Literacy	Subjective financial knowledge influences fintech awareness and adoption differently based on individual perceptions.

Nejad & Javid (2018)	Objective Financial Literacy	Objective financial literacy is a measurable factor that affects financial behavior, with higher literacy reducing risky financial behaviors.
Koskelainen et al. (2023)	Subjective Financial Literacy	Subjective financial literacy is pivotal for understanding financial behaviors and well-being, often predicting financial outcomes better than objective measures.

Digital Banking and Financial Literacy in Rural India

The integration of digital technology in the financial sector has revolutionalised the banking system across the world, making traditional banking almost irrelevant in some parts of the world (Werth et al., 2020). In India too, this change has been quite evident, and more and more people are opting for digital banking. However, the use of mobile banking in the rural areas of India shows the synthesis between the modern technology and financial literacy (Sindakis and Showkat, 2024). Digital banking in India has progressed significantly over the past decade. The Digital India initiative, launched in 2015, aimed to enhance digital infrastructure and literacy across the country (IBEF, 2015). As of 2023, India ranks 49th on the Inclusive Internet Index (Arora, 2021), indicating a substantial but uneven growth in digital accessibility. The 'Report on Currency and Finance (RCF) for the year 2023-24' reveals that rural areas, where 46% of the population are wireless phone subscribers and 54% are active internet users, are witnessing significant digital inclusion. With over two lakh gram panchayats connected via BharatNet, and a substantial portion of FinTech consumers and digital payment users originating from these regions, rural areas are crucial in narrowing the digital divide and advancing India's digital economy (Report on Currency and Finance (RCF), 2024).

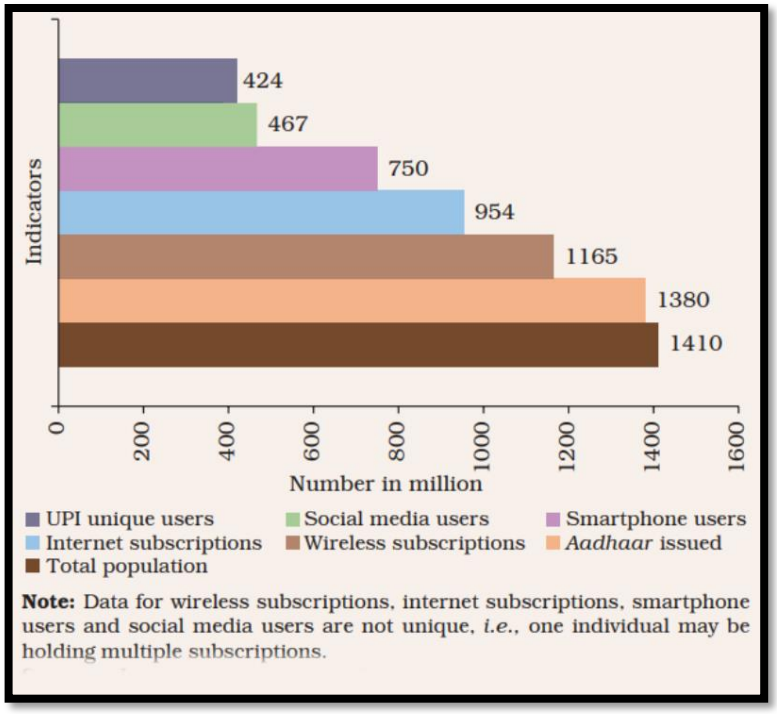

Figure 1: Digital Connected Population in Rural, India (Report on Currency and Finance (RCF), 2024)

Mobile banking, in particular, has witnessed explosive growth, with transactions in rural India increasing by over 200% in the past three years (Assocham & PwC, 2022; Patil, 2024). This surge underscores the transformative potential of digital banking for rural populations. However, the benefits of digital banking are not uniformly distributed. Despite numerous government initiatives, including the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) and the Vittiya Saksharta Abhiyan (VISAKA), challenges persist (Prasad Meghwal & Dayama, 2018). These programs aim to improve digital literacy among rural populations, but their effectiveness is hindered by various factors.

One of the main challenges to adopting digital banking in rural areas of India is the poor level of financial digital literacy. Another study by Nedungadi and colleagues found that many rural consumers lack the fundamental understanding of digital finance, which hampers their interaction with digital banking (Nedungadi et al., 2018). This illiteracy is further worsened by a poor internet connection which although has had improvement is still a problem. According to the Telecom Regulatory Authority of India (TRAI) while the Internet is widely used in rural areas with the Internet usage being 33% the usage in the urban areas is 99%

(TRAI, 2020). This digital divide limits people's ability to access online banking and hinders the development of digital banking solutions.

However, there are other factors that make financial literacy even worse among the rural populations; these include language barriers and the reluctance of the rural population to use digital technologies. Most of the digital banking applications are developed in English or Hindi for users who are not so fluent in these languages are at a disadvantage (Singh & Malik, 2019). Also, the issues of fraud and insecurity are other factors that dissuade the users from adopting digital banking solutions especially those from the rural areas. Nallainathan (2021) found out that, rural people avoid online shopping due to the following reasons; fear of being scammed, lack of adequate knowledge regarding cybersecurity. These are challenges that can only be overcome by a complex solution. Measures that increase digital environment quality, for instance, increasing broadband connection, should be taken to increase digital banking penetration in the rural regions. Furthermore, it is possible to create unique financial literacy programs that will consider the needs and languages of local populations and help rural inhabitants to navigate digital finance services. With advancements in digital banking, it will be important in the future to make sure that the rural people are adequately trained and informed to attain total financial literacy.

Importance of Financial Literacy for Digital Banking Adoption

Digital banking has remained to be incorporated into the society because of the enhancement of 4.0 technology and the growing number of people using mobile telecommunication (Kuswandi et al., 2022). The instruments of financial have evolved into multiple, easily accessible and timely saving for the hassles of handling cash. This is especially the case of the countries like India where the digital economy is expected to account for 20% of the GDP by 2026 from the current 10% (The Economic Times, 2023).

The knowledge of financial concepts in the populace influences the level of adoption and usage of digital banking services. An informed consumer is capable of grasping the complexities of the digital financial instruments and to make proper decisions as to their financial state. As per the current statistics, it is evident that financial literacy leads to lower vulnerability to financial fraud, better handling of debts, and improved investment decisions (Sabri et al., 2023). However, when people have low levels of financial literacy, they can hardly maximize on utilization of the digital banking services, hence their economic welfare and financial security may be impacted (Lusardi & Tufano, 2015). As a result, the study

introduces the concept of Digital financial literacy (DFL) as an integration of financial literacy and digital literacy as a key factor for improving the level of digital banking in the rural area. There is a new wave of financial services, digital financial services, which has brought the feature of financial inclusion, but on the other hand, the use of these services requires the user to be much more digitally savvy (Tony & Desai, 2020). With an increased adoption of mobile banking applications, people have to not only possess elementary financial literacy but also skills in handling mobile technologies like smartphones and tablets for proper handling of their finances (Carlin et al., 2019). In rural India, people remain financially illiterate as compared to their urban counterparts and the advent of the digital banking system is a boon as well as bane. According to recent statistics, more than 50% of FinTech consumers are from semi-urban and rural areas showing the great future of digital banking in these areas (Ammar & Ahmed, 2016).

Empirical evidence points to the fact that enhancing financial literacy in rural households is essential for optimal outcomes in digital banking. Research has also established that the level of financial literacy affects an individual's ability to save, invest and even support the retirement phase (Morgan & Long, 2020). Similarly, the digital literacy increases the ability of the users to undertake the several facets of mobile banking thus enhancing the accessibility of the financial products. This paper used the OECD (2018) where he noted that digital financial literacy should be included in policy initiatives to enhance the financial access and economic growth.

Thus, to overcome these challenges, it is crucial to consider both goals and attitudes to financial literacy in the context of digital banking. Objective aspects include; availability of financial education programs and material for the rural people which will improve their knowledge on the digital finance tools and services. Subjective factors include enhancing users' trust and ease in using digital technologies and this can be done by having good interfaces and customer service (Gurtner et al., 2014; Hanafizadeh et al., 2014). The level of financial literacy is central to the adoption of digital banking in that its lack is more prevalent in the rural areas where the digital gap is large. Through the improvement of financial and digital literacy, the rural people can effectively interact with digital financial services hence improving the economic status and financial access.

Theoretical Models Related to Financial Literacy and Digital Banking

Digital transformation is gradually affecting different industries, and the financial industry is no exception. Conventional banking is not easily available in rural belts of India and hence digital banking is a viable solution. Nevertheless, the extent of the digital banking revolution in these areas depends on financial literacy (Subbarayan, Banerjee and Poornima, 2023). Digital banking tools require the understanding of financial concepts and the ability to manage them, which is defined as financial literacy (Lusardi & Mitchell, 2019). Campbell et al., (2011) have found out that, there is a positive relationship between financial literacy and ability to use digital financial services, risks management, and decision making. The combination of digital literacy with financial literacy is most appropriate in the case of digital banking. Digital literacy encompasses the efficient use of technologies such as smart phones and internet applications which are crucial in the use of digital financial services (Carlin et al., 2019). In the case of rural users, and especially in developing countries, technology adoption is a challenge and digital literacy becomes a hindrance to the incorporation of digital banking services (Vogels & Anderson, 2019). Hence, digital literacy is as important as the financial literacy in the promotion of digital banking.

Theoretical frameworks including the Unified Theory of Acceptance and Use of Technology (UTAUT) form a basis through which the impact of financial and digital literacy on the use of digital banking can be explained (Rahi, Abd. Ghani and Hafaz Ngah, 2019). UTAUT assumes that performance expectancy, effort expectancy and social influence are the critical factors influencing adoption of technology. However, in the case of digital banking the above factors are mitigated by financial and digital literacy. For example, higher financial literacy would make the perception of digital banking as valuable and easy to use thus improving adoption levels (Jadil, Rana and Dwivedi, 2021). In this study, the factors that define the level of digital banking by the rural population of India are financial and digital literacy. Financial literacy empowers a person with the necessary knowledge to manage his/her financial affairs effectively while digital literacy empowers a person to use an item of technology effectively. Educating people and implementing policies that will improve both forms of literacy will help to drive the increased take up of digital banking and therefore increase the level of financial inclusion in rural regions of India.

Research Gaps in Financial Literacy and Digital Banking

While the existence of digital banking in India is growing fast, there is still a lack of empirical literature on the impact of financial literacy in the adoption of digital banking, especially in rural regions. Although the banking services have been digitized and mobile applications and digital payment platforms have been launched (Murinde et al., 2022; Alsmadi et al., 2023), the financial literacy levels are still a major factor affecting the uptake (Kukreja et al., 2021). Previous studies pay more attention to the technological and structural developments rather than addressing the issue of financial literacy (Chan et al., 2022). Most of the studies are done on urban samples or larger samples and there is a dearth of research on the issues that rural population of India goes through (Kukreja et al., 2021). This is rather surprising especially given that rural customers are likely to have low financial literacy and, therefore, experience challenges towards embracing digital banking (Murinde et al., 2022). The second significant gap that has been established is that there is no review study that could compare both the attitudinal and the behavioural approach to financial literacy in the context of digital banking. Subjective financial literacy can be defined as respondent's perception of his or her level of financial skills while on the other hand, a measure of actual knowledge is often referred to as objective financial literacy (Koskelainen et al., 2023; Nejad and Javid, 2018). This means that there is need to further conduct research to establish the relationship between these dimensions and the extent of utilization of digital banking by the rural clients.

Furthermore, there is a limited empirical literature on the comparative efficacy of various financial education interventions to address the divide and to translate the consumers' financial literacy and understanding of the new mode of banking for the rural consumer's segment in India. With regard to this gap, there is a need to fill the above-discussed policy and intervention gap for enhancing financial literacy and facilitate the underbanked population in the use of digital banking solutions (Yang, Wu, and Huang, 2023). Future research should be conducted on this cross-section to establish other factors that have hindered the growth of digital financial services in the rural areas.

Hypothesis Development

Hypothesis 1: Subjective financial literacy and digital banking adoption among rural populations in India.

Subjective financial literacy, or an individual's self-assessment of their financial knowledge, can also influence digital banking adoption. his form of literacy involves the level of

confidence one has in handling financial issues and the use of technology (Lusardi & Mitchell, 2014). Customers who believe they have the necessary financial literacy are willing to use the online banking services, they think they can handle their finances well online (Gerrans et al., 2014). This self-confidence can result in increased usage rates as customers feel at ease in managing their digital banking channels and in making financial transactions on the Internet (Hastings & Tejeda-Ashton, 2008). For the rural population of India, improving the level of SFL could, therefore, be one of the ways of increasing the uptake of digital banking since it is in tandem with their perceived capability of using such technologies (Wood & Zaichkowsky, 2004). Therefore, this hypothesis asserts that higher levels of subjective financial literacy are positively associated with the adoption of digital banking among these communities.

H1: Subjective financial literacy is positively associated with digital banking adoption among rural populations in India.

Hypothesis 2: Objective financial literacy is positively associated with digital banking adoption among rural populations in India.

The objective financial literacy that relates to the factual knowledge about financial products, concepts, and services have a considerable impact on digital banking. Some of the studies done have provided evidence that enhanced objective amount of financial literacy is helpful in comprehending and using the e-banking gadgets (Chen & Volpe, 1998). This is even more so in the Indian rural setting where the use of Digital Banking is still poor because of poor Financial literacy (Lusardi & Mitchell, 2014). The financial literacy at higher level is helpful to attain the required skills to deal with the digital context which raises the readiness of people to use the particular services (Beck et al., 2016). The consumers in the rural areas will readily adopt digital banking since they have prior understanding in matters financial and they are aware of the significance and operations of the digital banking (Muiruri et al., 2020). Therefore, this hypothesis posits that objective financial literacy positively impacts the likelihood of digital banking adoption among rural populations.

H2: Objective financial literacy is positively associated with digital banking adoption among rural populations in India.

METHODOLOGY

This chapter explains how the study was conducted by using the research onion as a guide as suggested by Saunders, Lewis and Thornhill. This framework will help in the conduct of the research through the identification of the research philosophy, approach, strategy, and method. The points to be addressed are the research methodology, instruments, and the issues of ethical considerations, which give the description of the study process and make the results more reliable.

Conceptual Framework and Theoretical Models

Conceptual framework is a significant aspect in the process of structuring research as it serves as a link between the theoretical and empirical perspectives as well as assists in analyzing the findings of the research. It gives insight on the relationship of some concepts and how they aid in solving research questions (Adom, Hussein and Adu-Agyem, 2018). In the context of digital banking adoption among rural populations in India, the conceptual framework integrates two primary variables: financial inclusion which can be defined as the digital banking adoption which is the dependent variable and financial literacy: The objective and subjective financial literacy as the independent variable. However financial literacy is categorized into two components, these being the objective financial literacy and the subjective financial literacy. The first of them is the test of a person's financial knowledge as far as the amount of facts (Nejad and Javid, 2018), the second one is the rating given by the person to his/her financial literacy (Hadar, Sood and Fox, 2013). Thus, the outlined relationships make it possible to present the conceptual framework as a systematic approach to studying the effects of financial literacy on the adoption of digital banking. It helps in identifying which of the two concepts, enhanced objective financial literacy or superior self-perceived financial literacy helps in increasing the usage of the digital banking services. In addition, the framework allows the researchers to evaluate the state of knowledge and if the current frameworks fail to account for the findings, it allows the researchers to propose new knowledge or theory.

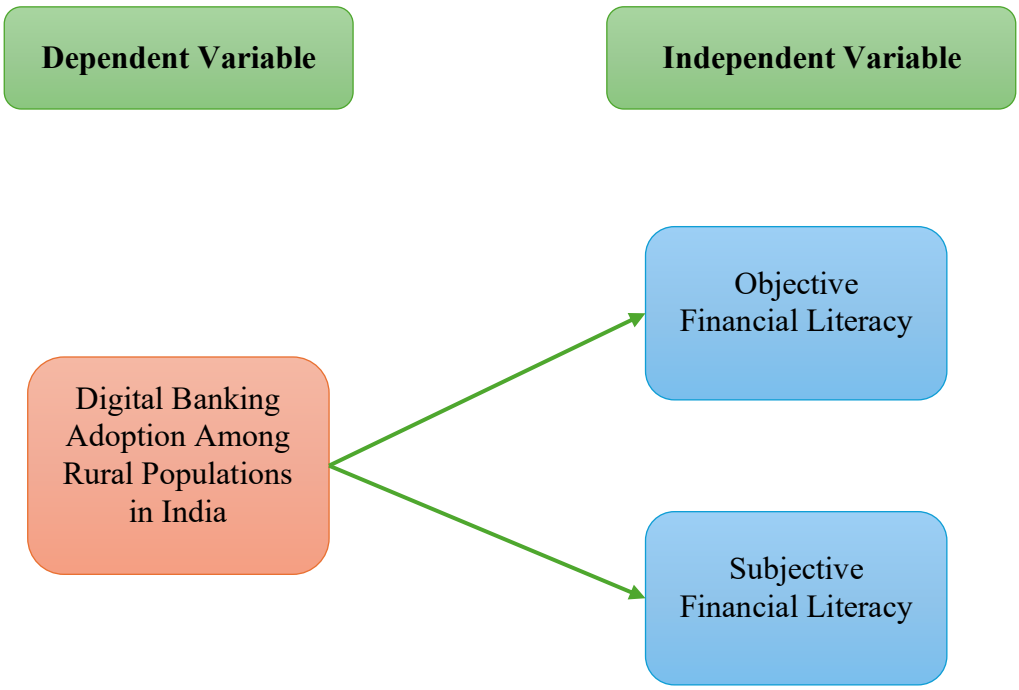

Figure 2: Conceptual Framework (Created by Author)

Theoretical Models

Technology acceptance model and its four components form the foundation for the components of financial and digital literacy in the framework. One of the models is the Unified Theory of Acceptance and Use of Technology (UTAUT) model. UTAUT, developed by Venkatesh et al. (2003), identifies four key constructs: These four factors include performance expectancy, effort expectancy, social influence and facilitating condition. These constructs are also moderated by individual characteristics including financial and numeracy skills.

1. **Performance Expectancy:** This assessment is in connection to the perceived advantage of using technology in a venture with the aim of enhancing efficiency or productivity at the workplace. This means that within the digital banking context, the financially intelligent are predisposed to perceiving the services as possessing higher utility and therefore the boost to the uptake of the services.
2. **Effort Expectancy:** This has to do with the usability factor that comes with a particular technology. Digital literacy affects effort expectancy; those who have a

better understanding of technology will find digital banking easier to use hence improving the level of adoption.

3. **Social Influence:** This construct looks at how the social networks and peer pressure affect the use of technologies. Within the rural setting, social influence might be moderated by the local leaders or the trainers of the financial literacy who support digital banking.
4. **Facilitating Conditions:** These are the resources and support systems that are available to support technology integration. In the rural areas of India, there is a lack of technological infrastructure which poses a problem for digital banking. Therefore, increasing the digital facilities is inevitable.

The application of these theories further emphasizes the need to consider financial and digital literacy to enhance digital banking. In the context of rural India where the facilities of financial inclusion are scarce, improving the financial literacy may assist in making right choices regarding digital banking. However, it is also crucial to address barriers that are associated with the technology adoption to improve the digital literacy (Subbarayan, Banerjee & Poornima, 2023). The gap between these variables can only be closed by educational programs which focus on financial and digital literacy. For example, programs that teach financial literacy together with hands-on practice of how to use and access digital banking tools can enable the users to harness the digital banking services. Policies and community initiatives related to the use of public services should aim at enhancing the quality of digital resources and offering the financial and digital tools (Campbell et al., 2011).

Therefore, the conceptual framework and theoretical models offer a clear perception of the factors that impact the digital banking adoption among rural dwellers in India. With financial and digital literacy incorporated into these frameworks, researchers and policymakers will be able to design contextualized interventions for increasing the use of digital banking services and improving financial access.

Research Onion

Saunders, Lewis, and Thornhill (2019) have developed a research onion to guide the research process and divide it into layers to cover all aspects. The outermost layer, research philosophy, refers to the assumptions made on reality (ontology) and knowledge (epistemology) of the study. In this research, positivism is the philosophy that is used, which is based on the principles of positivism that focus on the material reality.

The next layer is research approach which focuses on the manner in which knowledge is developed, and in this case is deductive. This approach validates theories and hypotheses and enables creation of prediction based on the concepts developed. Going further to the internal strategy, the research strategy defines the approaches to data gathering and analysis. Here, one of the survey strategies is chosen to collect quantitative data on financial literacy and digital banking.

These layers are the innermost and they deal with data collection techniques and data analysis techniques. In this study, quantitative data is obtained through structured questionnaires to assess the level of financial literacy and its influence on digital banking. It will then be followed by statistical analysis to support hypothesis testing and other analytical works.

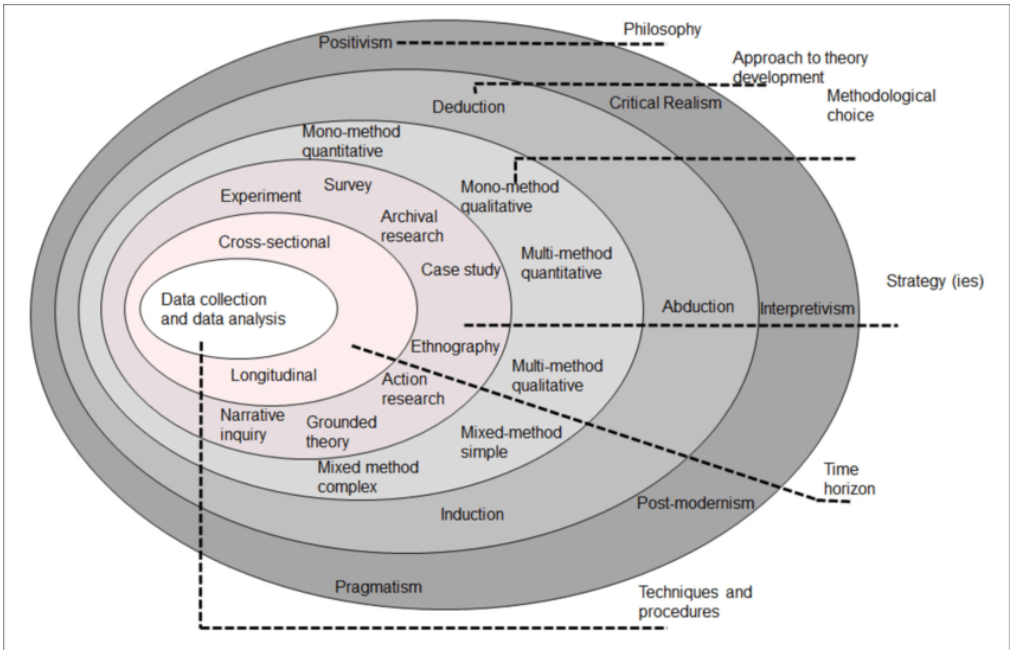

Figure 3: Research Onion (Saunders et al., 2019)

This study seeks to establish the following research question: How does financial literacy impact the use of digital banking by inhabitants of rural regions in India? Thus, the study is underpinned by a positivist epistemology and a deductive research strategy with the aim of providing a quantitative and factual understanding of how financial literacy levels impact on the adoption of digital banking services in the rural context.

Research Design

Research design can be defined as a well-thought-out plan that aims at solving certain research questions, handling data in the best way possible, and coordinating the different

factors and methods of data collection and analysis (Saunders, Lewis, & Thornhill, 2019). It involved decisions concerning the type of study to be carried out which included decisions between descriptive, correlational or experimental research in addition to defining the sub categories of the study type selected such as the descriptive-longitudinal case study. It also entails development of hypotheses and choice of the method of data collection and analysis (Creswell, 2014).

The study used descriptive research design where the researcher aims at describing and recording the research topic at his or her own free will. This approach facilitated the search for patterns and trends in the data collected since effects of financial literacy on the use of digital banking were grouped at different levels. The design allowed the study to offer some findings and add to the knowledgebase regarding the financial behaviours in the rural areas.

Research Philosophy

This research philosophy affected the research by describing how the research questions were defined and pursued (Tsang, 2016). As for the current study, positivism was adopted as the research philosophy. Positivism also emphasizes on empirical, factual and statistical research tools that are in line with systematic scientific research. This philosophy also supported the use of a large sample and measurement that incorporated numeracy to increase the reliability of the study findings. Therefore, the positivism approach of only focusing on the quantitative factors and the numbers enabled the study to establish the impact of financial literacy on the use of digital banking among the rural people of India. This approach enabled an objective analysis of the connection between the levels of financial literacy and the extent of digital banking adoption as all the conclusions were based on numerical data and the results of the application of specific, proven methods.

Research Approach

There are basically two broad categories of research approaches, which include the inductive research approaches and the deductive research approaches. The inductive approach works in the opposite way, that is, it starts from particulars, observations, or data and then builds up generalizations or theories. It stresses the process of deriving theoretical knowledge from more general propositions by going up from specific cases (Trochim, 2006). This method is inductive and develops theories from the patterns and results of a study. On the other hand, the deductive approach assumes a general theory or hypothesis to be true and tries to prove it by means of empirical data. This method is characterized by the potential of moving from

the general to specific in order to justify or refute the theory under consideration (Creswell and Plano Clark, 2007). It is mostly used in research that seeks to assess the validity of theories that have been developed after careful analysis and data collection.

In this study, the deductive approach was used because this approach allows for testing the existing theories within the context of financial literacy and digital banking adoption. This method was useful to employ because it was possible to start with an assumed hypothesis of the effects of financial literacy and assess it in light of the data obtained from the rural population in India.

Research Strategy

A research strategy is a carefully coordinated plan of the approach that is going to be taken in carrying out a study in order to address the research questions and to meet the objectives of the research. Saunders et al. (2012) have pointed out that there are several methods and they include experiments, surveys, case studies, and action research each of which is appropriate when undertaking certain types of research and for certain kind of data. The type of strategy to be adopted depends on the goals of the study, the kind of data that is required and the questions that are being asked.

For the purpose of this study, survey-based approach was used. This approach was chosen because the focus of the study is on the effects of financial literacy on the use of digital banking services by the rural population in India; when identifying these effects, it is necessary to collect a large amount of quantitative data from many participants at a time. It is easy to gather data through surveys as it is normally in a standard form that can be analyzed statistically to reveal certain patterns or relationship. This method is compatible with the objective of this study in that it aims at developing hypotheses and measuring the degree of relationships between variables. By so doing the research could be in a position to arrive at a conclusive and accurate result with regards to the rural population.

Methodological Choice

The methodological decision defines the points of view on the study and the paradigm suitable for the tasks of a particular research and the type of data to be used. Therefore, the most appropriate approach of performing this study was to use a quantitative research approach. Collis and Hussey (2013) define quantitative research as a method that involves the use of numbers and figures in the analysis of data with the view of either supporting or negating hypothesis and trends. It is most appropriate for research that is meant to evaluate

the level of occurrence of various phenomena and establish general averages from large data samples.

Quantitative method can be applied in the framework of the study to analyze the correlation between financial literacy and digital banking adoption among the rural population in India because it allows for the systematic collection of data from a large number of respondents. This enables the assessment of variables like financial literacy and its link with the adoption of digital banking. Through the use of statistical analysis, the study seeks to establish the direction and strength of the relationships hence providing an objective and generalizable analysis on the factors influencing the adoption of digital banking among the rural populace. It aligns with the study's goal to provide empirical evidence and detailed results that are based on reliable methods.

Time Horizon

The time horizon in research defines where in the time line data is collected and analyzed and therefore determines the nature of the study. It generally falls into two categories: longitudinal and cross-sectional (Saunders et al., 2012). A longitudinal design involves the evaluation of the same subjects or phenomena at different time intervals, which provides knowledge of how the variables evolve. This method is especially useful when looking at the patterns and even more when studying the effects that temporal factors have on the considered variables (Caruana et al., 2015).

Therefore, a cross-sectional time horizon is considered appropriate for this study. This entails gathering information at a particular time; therefore, it offers only the cross-sectional data on the current state of financial literacy and digital banking. Cross-sectional research design allows for the comparison of various groups in the sample and is appropriate in establishing various patterns and relationships at a given point in time. This choice aligns with the objectives of the study which is to assess the impact of financial literacy on the adoption of digital banking as of the current time without having to make the comparison at a later time.

Data Collection and Analysis

Data Collection Tools and Procedures

In this study the quantitative data was mainly administered through structured questionnaire. This questionnaire had close-ended questions which used Likert scale in order to measure the level of the participant's opinion on various statements concerning digital banking. The questions developed were in such a way that it would measure perceived usefulness,

perceived ease of use and perceived security of the digital banking services. This approach made the data collected to be systematic and measurable thus enabling an effective assessment of factors that lead to the adoption of digital banking by the rural people in India.

Study Area

The survey was conducted only in rural areas of India so that the results could be compared with the urban areas where the use of digital banking is high and people are more financially literate. To achieve these objectives, the research targeted the rural areas since it aimed at getting the experiences of digital banking in somewhat less developed regions. It allowed the research to focus on the role of financial literacy when it comes to the use of the digital banking services and provided more details about the rural consumers.

Sample Size

The method of Green (1991) was utilized to calculate sample size, which was calculated as 50 plus 8 times the number of independent variables. Since there are two independent variables, this led to a recommended sample size of 66.

$$\text{Sample size} = [50 + 8(2)] = 66$$

Therefore, with regard to the practical consideration, the final sample size was chosen to be 70 to 100 participants.

Research Population and Sampling Procedures

The study aimed at the rural people of India, particularly those who use digital banking services. To achieve this, convenience sampling was used whereby data was collected from participants who were easily accessible and willing to participate. This approach enabled the gathering of data from the targeted rural areas in an efficient manner and also ensured that the sample comprised of the various subgroups of people who are in touch with the digital banking services.

Study Phases

The current study was carried out in one phase design, which included the design phase, data collection phase, analysis phase and the reporting phase. First, a specific survey instrument was developed to capture the rural Indian people's attitude towards digital banking. The further procedure included the distribution of online questionnaires to receive the feedback from the target population. The analysis phase entailed the following activity; The activity involved the process of analyzing the data in a bid to identify patterns that are associated with

digital banking. Finally, a report was prepared in an effort to record the findings of the research study. Time was managed by using a Gantt chart so that each of the phases was done in the correct manner and within the correct timeframe.

Variables and Their Measurement

- **Digital Banking Adoption Among Rural Populations in India:** This variable measures the extent to which rural populations in India are adopting digital banking services. Adoption levels were assessed based on usage frequency, engagement with digital banking features, and overall acceptance.
- **Objective Financial Literacy:** Objective financial literacy refers to the actual knowledge of financial concepts and products. It was measured by evaluating respondents' understanding of basic financial terms and digital banking functionalities through specific, factual questions.
- **Subjective Financial Literacy:** Subjective financial literacy pertains to individuals' self-assessed understanding of financial matters. It was gauged using self-reported ratings on confidence in managing personal finances and using digital banking tools, measured through a Likert scale.

These variables were measured using a structured questionnaire with Likert scale items to quantify perceptions and knowledge levels.

Statistical Analysis

In this study statistical analysis was carried out with the help of Statistical Package of Social Science System (SPSS). The quantitative data was therefore described using frequencies and percentages because it aimed at summarizing the data collected and other inferential methods such as regression analysis were used in estimating the relationship between objective and subjective financial literacy, digital banking adoption (Garth, 2008).

In this research, regression analysis was conducted to assess the relationship between subjective and objective financial literacy (independent variables) and digital banking adoption (dependent variable). The analysis used multiple linear regression to evaluate how these variables predict digital banking usage among rural populations in India. The model revealed that most variables related to subjective financial literacy were statistically insignificant, indicating that self-assessed confidence in financial management does not directly influence digital banking adoption. In contrast, objective financial literacy, such as familiarity with digital payment methods and the ability to interpret bank statements, was

significantly associated with increased digital banking adoption. These findings highlight the need for practical financial education to boost digital banking usage.

Ethical Considerations

It is crucial to adhere to ethical principles when conducting research in order to maintain the accuracy of data and results. In this study, ethical considerations were followed so that the participants would be treated fairly in the research. Based on Saunders, Lewis, and Thornhill (2019), the first ethical consideration was the informed consent. The participants were given brief details on the nature of the study, what would be involved therein, possible hazards and gains that may arise from the undertaking.

To ensure that participants' information was not exposed, responses were kept anonymous and data collected stored securely. The study also followed the ethical consideration by asking the respondents to participate in the study willingly without any coercion and that the respondent could decline to continue with the study whenever they wished to. Also, the study was carried out with some level of respect for culture and tradition especially given the fact that all the participants were from rural areas. These ethical practices wanted to make certain that the research was properly done and done in a proper manner to the people involved.

FINDINGS

This chapter presents the findings of the study in relation to data analysis that was done using the SPSS software. The type of analysis that will be performed are frequency distribution, descriptive analysis, correlation analysis and regression analysis. The chapter will discuss the results of these analyses which will further explain the relationship between financial literacy and digital banking. It will also give a comparison of the findings that has been gotten from the regression analysis with the hypothesis that has been postulated at the onset of the whole process.

Frequency Analysis

Age of Respondents

The table below presents the age distribution of the respondents in the study and this indicates that the sample used for the study is fairly representative of the different age groups. The largest group of respondents are people of 18-25 years old and they account 40% of the participants. This could be an indication that there is a greater proportion of young people in the population hence they are more open to digital banking.

The second largest is the 26-35 years' age group which represents 31 percent of the sample population. This demographic is also important, which can be attributed to people who are gradually becoming financially independent and might require digital banking services. The 36-45 age group is 14% of the sample and 46-55 age group is 12% of the sample. These age brackets are moderately represented, which indicates that the use of digital banking is expanding across the ages.

Lastly, the respondents who are 56 years old and above account for 3% of the total sample. The lower percentage may be due to older population groups having less exposure or concern for digital banking. In conclusion, the sample is inclusive of different age groups, which may help in comparing the effects of financial literacy on digital banking uptake across different age brackets in rural areas of India.

Table 2: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	40	40.0	40.0	40.0
	26-35	31	31.0	31.0	71.0
	36-45	14	14.0	14.0	85.0
	46-55	12	12.0	12.0	97.0

	56 and above	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

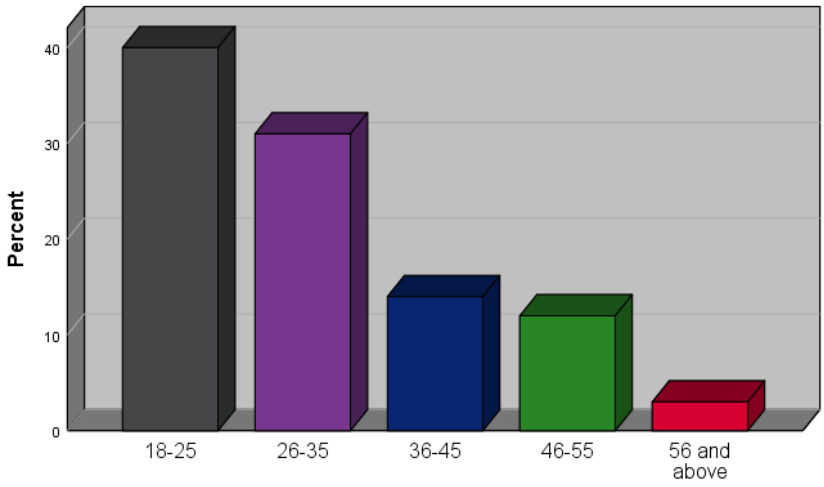

Figure 4: Age of Respondents

Gender of Respondents

The gender distribution of respondents in the study is fairly equal with a marginal leaning towards females. Out of the 100 participants, 45 are male while 50 are female, which is a nearly equal distribution of both sexes.

Furthermore, 5% of the respondents chose the non-binary or did not wish to disclose their gender option. This inclusion is an attempt to ensure that the study is sensitive to gender diversity.

The gender distribution is also relatively equal, which means that the study conducted will be able to capture the extent of the use of digital banking and financial literacy among different gender categories. This balance makes sure that the study results do not have a bias towards any gender and hence gives a clearer picture of how financial literacy influences digital banking uptake among all the genders in the rural areas of India.

Table 3: Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	45	45.0	45.0	45.0
	Female	50	50.0	50.0	95.0
	5.00	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

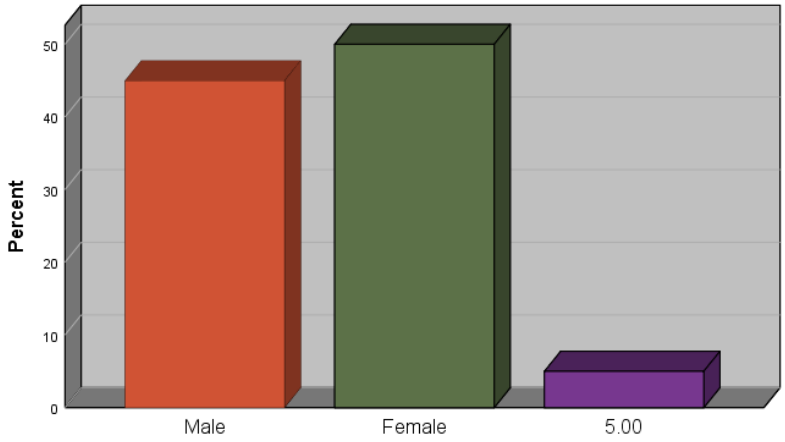

Figure 5: Gender of Respondents

Education Level of Respondents

The education level distribution of respondents in the study, indicates that a major chunk of respondents has acquired higher levels of education. Out of the 100 participants, 72% have a graduate degree or above. This infers that most of the respondents have attained higher education hence the level of formal education among the sample is relatively high.

The remaining 1% of respondents have no formal education, 6% completed primary level education, 12% completed secondary level education, and 9% completed higher secondary level education. This distribution displays a very strong tendency towards higher education with very limited presence of lower education.

This could be due to the fact that the sample contained a large number of graduates and above, so the results are likely to be biased towards individuals with higher education. This distribution should be taken into consideration when analyzing the relation between financial literacy and the usage of digital banking since the subjects with higher education levels can be characterized as more digitally and financially literate.

Table 4: Education Level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No formal education	1	1.0	1.0	1.0
	Primary education	6	6.0	6.0	7.0
	Secondary education	12	12.0	12.0	19.0
	Higher secondary education	9	9.0	9.0	28.0
	Graduate and above	72	72.0	72.0	100.0
	Total	100	100.0	100.0	

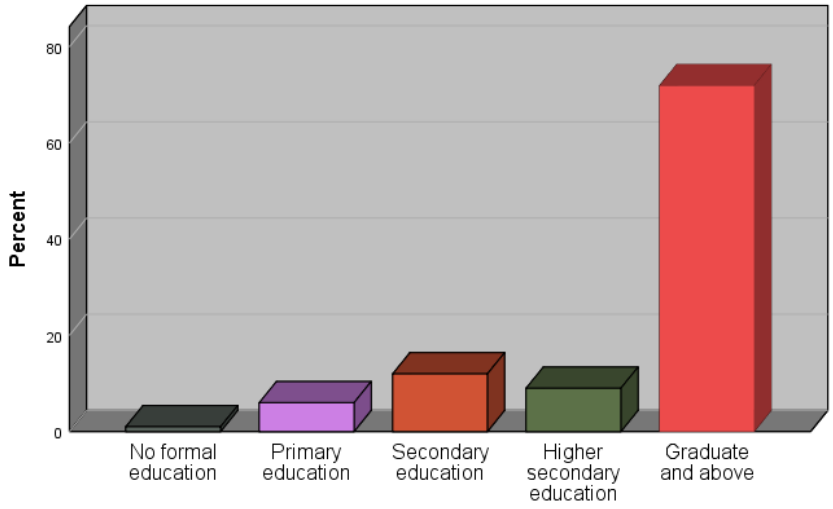

Figure 6: Education Level of Respondents

Occupation of Respondents

The employment status of the respondents in the study, indicates the variety of occupations. Of 100 participants, 44% are paid a salary, meaning they are likely to have a steady income and possible access to financial instruments.

Unemployed and self-employed people represent 21 percent of the sample, which indicates a significant number of people earning irregular income or having no steady job. Some 3% of the respondents are farmers, which is reasonable given the rural setting of the study. Additionally, other 11% of participants can be labeled as 'Other' this is a very broad category that may contain almost any occupation.

This distribution reveals a wide range of employment experience among the participants especially those who are wage and salary workers. Employment status is also diverse important to consider when testing how the various working conditions can impact financial literacy and the use of digital banking services.

Table 5: Occupation of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unemployed	21	21.0	21.0	21.0
	Self-employed	21	21.0	21.0	42.0
	Salaried	44	44.0	44.0	86.0
	Farmer	3	3.0	3.0	89.0
	Other	11	11.0	11.0	100.0

Total	100	100.0	100.0	

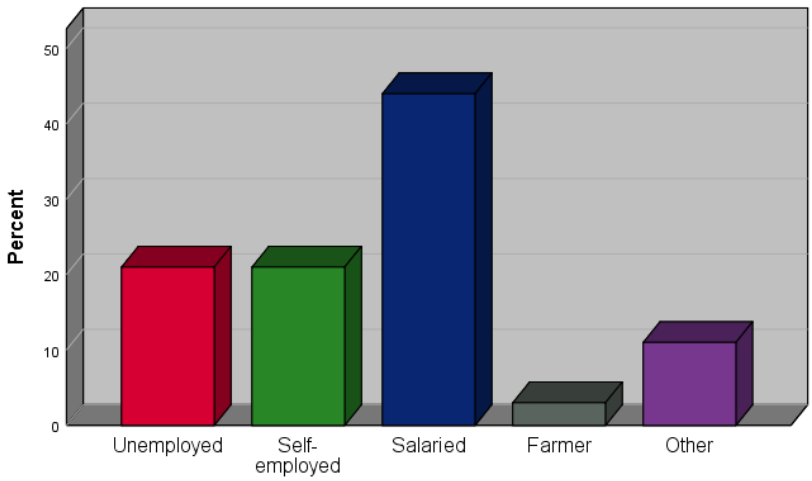

Figure 7: Occupation of Respondents

Monthly Household Income

The distribution of monthly household income of the respondents in the study, indicates the various financial status. A large number of 42% participants earn more than ₹40,000 per month, which confirms the higher income group in the sample. This implies that a significant proportion of the rural population in the study possesses relatively stable livelihood assets. On the other hand, 10% of the respondents have a monthly income of less than ₹10,000, which is considered as low income group. The rest of the participants seem to be fairly divided across the other income categories: 13% earning between ₹10,000 and ₹20,000, 15% between ₹20,001 and ₹30,000, and 20% between ₹30,001 and ₹40,000. This income distribution shows the economic heterogeneity of the respondents, which is crucial when considering how different income levels may affect the financial literacy and the usage of digital banking services.

Table 6: Monthly Household Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 10,000	10	10.0	10.0	10.0
	10,000 - 20,000	13	13.0	13.0	23.0
	20,001 - 30,000	15	15.0	15.0	38.0
	30,001 - 40,000	20	20.0	20.0	58.0
	Above 40,000	42	42.0	42.0	100.0

Total		100	100.0	100.0

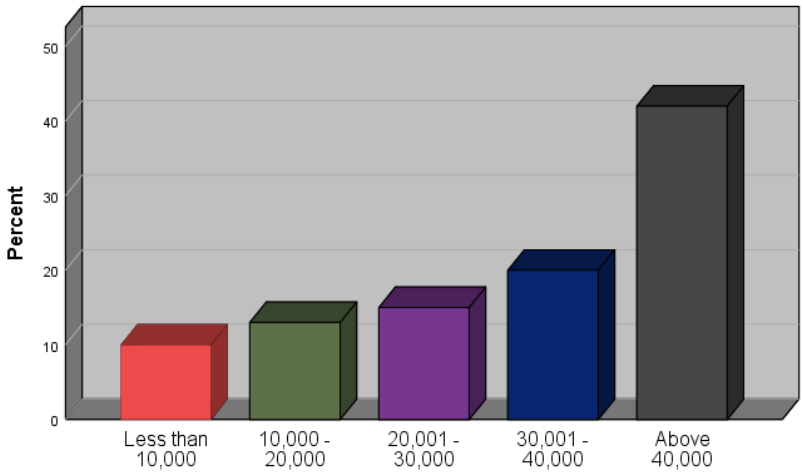

Figure 8: Monthly Household Income

Access to Internet

The table on "Access to Internet" shows that 100% of respondents have access to the internet. This complete access rate indicates that all participants in the study can potentially engage with digital platforms and services, including digital banking. The uniformity in internet access is crucial for evaluating the adoption of digital banking services, as it ensures that the entire sample can interact with online financial tools.

Table 7: Access to Internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	100	100.0	100.0	100.0

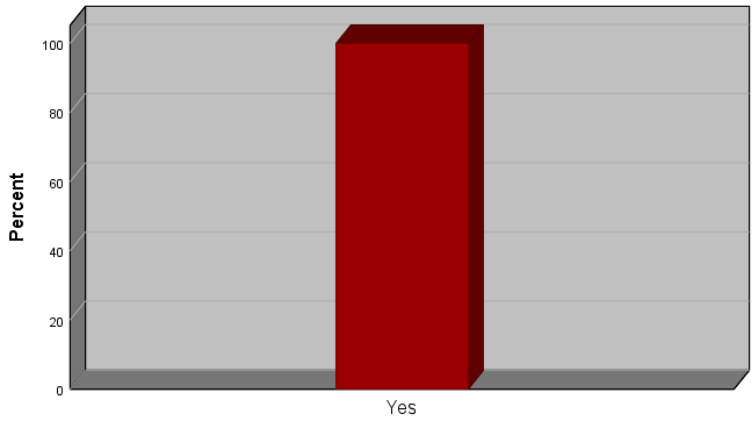

Figure 9: Access to Internet

Use of Digital Banking Services

Below table reveals that 96% of respondents actively use digital banking services. This high adoption rate suggests widespread acceptance and use of digital banking among the sample population. Only 4% of respondents do not use these services, indicating that digital banking has penetrated almost all segments of the surveyed group, which is essential for analyzing the impact of financial literacy on digital banking adoption.

Table 8: Use of Digital Banking Services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	96	96.0	96.0	96.0
	No	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

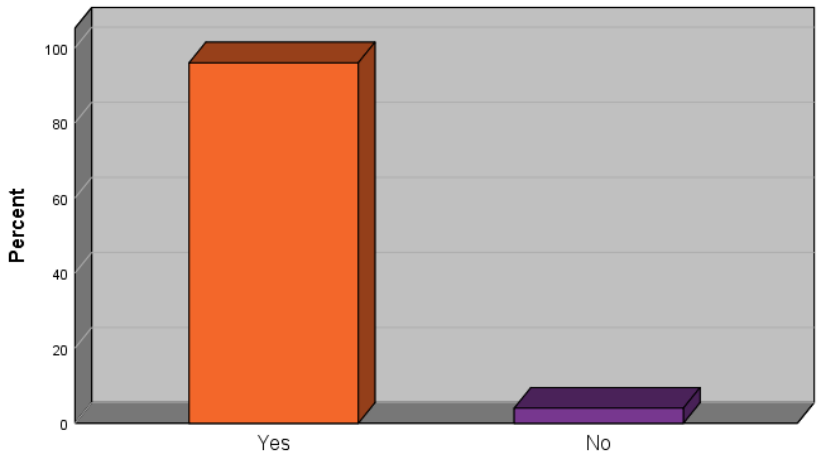

Figure 10: Use of Digital Banking Services

Descriptive Analysis

The descriptive statistics reveal key insights into the dataset for the study on digital banking adoption and financial literacy among rural populations in India as detailed in table 9 below. The **age of respondents** ranges from 1 (18-25 years) to 5 (56 and above), with a mean of 2.0700, indicating that the majority of participants were in the younger age groups. The standard deviation of 1.13933 suggests moderate variation in age distribution.

Regarding **gender**, the data shows a mean of 1.7000, with values ranging from 1 (Male) to 5 (Other). The standard deviation of 0.90453 indicates that while most respondents identified as male, there is some representation of other gender categories.

For **education level**, the mean of 4.4500 indicates that most respondents had at least a graduate degree. The standard deviation of 0.98857 reflects less variability, suggesting a relatively homogenous educational background among the participants.

The **occupation** variable has a mean of 2.6200, with a standard deviation of 1.17877. This suggests a mix of self-employed and salaried individuals, with a few in farming or other occupations, showing a varied occupational profile among the respondents.

The **monthly household income** data shows a mean of 3.7100, with values spanning from less than 10,000 to above 40,000. The standard deviation of 1.38750 indicates a broad range of income levels among the participants, suggesting varied economic backgrounds.

For **subjective financial literacy**, the mean score of 3.6360 and standard deviation of 0.86474 reflect a moderate level of perceived financial knowledge among respondents. Similarly, **objective financial literacy** has a mean of 3.6680 with a standard deviation of 0.86933, indicating that participants generally feel confident in their actual financial knowledge.

Finally, **digital banking adoption** has a mean of 3.9680 and a standard deviation of 0.86303, suggesting that most respondents have a positive inclination towards digital banking, with some variability in their adoption levels.

Table 9: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age of Respondents	100	1.00	5.00	2.0700	1.13933
Gender of Respondents	100	1.00	5.00	1.7000	.90453
Education Level of Respondents	100	1.00	5.00	4.4500	.98857
Occupation of Respondents	100	1.00	5.00	2.6200	1.17877
Monthly Household Income	100	1.00	5.00	3.7100	1.38750
Subjective Financial Literacy	100	1.00	5.00	3.6360	.86474
Objective Financial Literacy	100	1.00	5.00	3.6680	.86933
Digital Banking Adoption	100	1.00	5.00	3.9680	.86303
Valid N (listwise)	100				

These descriptive statistics provide a foundational understanding of the demographic and financial literacy characteristics of the study's participants, setting the stage for further analysis of relationships between these variables.

Correlation Analysis

The descriptive statistics analysis presented in Table 9 gives an overall summary of the main variables in the study of digital banking adoption and financial literacy. The correlation analysis also extends the understanding of interactions between these variables.

The mean scores for subjective financial literacy, objective financial literacy and digital banking adoption reveal moderate to high mean scores which indicate moderate to high level of financial knowledge and positive attitudes towards the use of digital banking among the respondents. Namely, the self-reported financial literacy score represents participants' perceived financial literacy level, and the actual financial literacy score represents their actual level of financial literacy. Another element that shows that people are willing to use digital services in banking is the relatively high mean score in case of digital banking.

Table 10 shows that **subjective financial literacy** is significantly positively correlated with both **objective financial literacy** ($r = 0.682$, $p < 0.01$) and **digital banking adoption** ($r = 0.588$, $p < 0.01$). This indicates that individuals who perceive themselves as financially knowledgeable also tend to have higher actual financial knowledge and are more likely to adopt digital banking services.

Similarly, **objective financial literacy** is strongly correlated with **digital banking adoption** ($r = 0.761$, $p < 0.01$), highlighting that those with greater actual financial knowledge are more inclined to use digital banking services.

Table 10: Correlations Analysis

		Subjective Financial Literacy	Objective Financial Literacy	Digital Banking Adoption
Subjective Financial Literacy	Pearson Correlation	1	.682**	.588**
	Sig. (2-tailed)		.000	.000
	N	100	100	100
Objective Financial Literacy	Pearson Correlation	.682**	1	.761**
	Sig. (2-tailed)	.000		.000
	N	100	100	100

Digital Banking Adoption	Pearson Correlation	.588**	.761**	1
	Sig. (2-tailed)	.000	.000	
	N	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

These correlations underscore the importance of both subjective and objective financial literacy in influencing digital banking adoption. The significant relationships observed suggest that enhancing financial literacy in both forms could positively impact digital banking uptake among rural populations.

Regression Analysis

Subjective Financial Literacy and Digital Banking Adoption in Rural India

Table 11 presents the results of the regression analysis examining the impact of subjective financial literacy on digital banking adoption in rural India. The model includes several subjective financial literacy indicators and their relationships with digital banking adoption. The regression analysis reveals the following insights:

Confidence in Managing Finances: The coefficient for confidence in managing finances is negative (-0.107) and not statistically significant (p = 0.302). This indicates that, despite individuals' self-reported confidence in managing their finances, it does not have a substantial impact on their adoption of digital banking services. The lack of significance suggests that confidence alone may not directly influence digital banking adoption.

Understanding Financial Terms: The variable related to understanding financial terms used in digital banking applications shows a positive coefficient (0.379) and is statistically significant (p = 0.000). This suggests that a better understanding of financial terminology is strongly associated with increased adoption of digital banking services. Individuals who are more familiar with these terms are more likely to use digital banking platforms.

Belief in Effective Use: The belief in one's ability to effectively use digital banking services has a positive coefficient (0.151) but is not statistically significant (p = 0.322). This result indicates that while personal belief in one's ability to use digital banking services positively correlates with adoption, the relationship is not strong enough to be considered significant in this model.

Knowledge about Protecting Financial Information: The coefficient for knowledge about protecting financial information online is positive (0.083) but not significant (p = 0.425).

This suggests that, although knowledge about online security is beneficial, it does not significantly impact digital banking adoption in the context of this study.

Trust in Financial Decision-Making: The trust in one's ability to make financial decisions using digital banking platforms also shows a positive coefficient (0.078) and is not statistically significant ($p = 0.505$). This indicates that trust in one's financial decision-making skills does not have a meaningful effect on the likelihood of adopting digital banking services.

Table 11: Regression Analysis (a)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.861	.313		5.937	.000
	I feel confident in managing my finances.	-.107	.103	-.119	-1.037	.302
	I understand the financial terms used in digital banking applications.	.379	.099	.438	3.834	.000
	I believe I can effectively use digital banking services.	.151	.152	.175	.996	.322
	I feel knowledgeable about how to protect my financial information online.	.083	.104	.094	.801	.425
	I trust my ability to make financial decisions using digital banking platforms.	.078	.117	.101	.669	.505

a. Dependent Variable: Digital Banking Adoption

Overall, the analysis indicates that among the subjective financial literacy factors examined, understanding financial terms used in digital banking is the only significant predictor of digital banking adoption. This highlights the importance of financial education programs focusing on financial terminology to improve digital banking uptake. The other subjective factors, while relevant, do not have a significant direct impact on adoption according to this model.

Objective Financial Literacy and Digital Banking Adoption in Rural India

Table 12 presents the results of the regression analysis assessing the impact of objective financial literacy on digital banking adoption among rural populations in India. The analysis includes several indicators of objective financial literacy and their influence on the use of digital banking services.

Knowledge of Budgeting: The coefficient for knowing how to create and manage a budget is -0.028 with a standard error of 0.067. This coefficient is negative but not statistically significant ($p = 0.679$). This suggests that while budgeting knowledge is an important financial skill, it does not significantly impact digital banking adoption in this sample. The lack of significance indicates that simply knowing how to budget does not directly translate into increased usage of digital banking services.

Familiarity with Digital Payment Methods: Familiarity with using digital payment methods like UPI or mobile wallets has a positive coefficient of 0.221 and is statistically significant ($p = 0.011$). This finding indicates that individuals who are familiar with digital payment processes are more likely to adopt digital banking services. This result underscores the importance of familiarity with digital payment technologies in promoting the use of digital banking.

Understanding of Saving: The variable related to understanding the importance of saving and using digital tools effectively has a positive coefficient of 0.119 but is not statistically significant ($p = 0.141$). While understanding saving practices is beneficial, it does not show a strong direct impact on digital banking adoption. The lack of significance suggests that knowledge about saving, in isolation, does not significantly affect the likelihood of adopting digital banking services.

Ability to Calculate Interest: The coefficient for the ability to calculate interest on savings accounts or loans is 0.102 with a standard error of 0.075. This variable is not statistically significant ($p = 0.180$). This result implies that while calculating interest is a useful skill, it does not have a direct and significant impact on the adoption of digital banking services in the rural population studied.

Interpreting Bank Statements: Knowledge of how to read and interpret bank statements online shows a positive coefficient of 0.317 and is statistically significant ($p = 0.000$). This finding highlights that individuals who can effectively interpret their bank statements online are more likely to engage with digital banking. The significant positive coefficient suggests

that the ability to understand and manage one's financial statements online is crucial for digital banking adoption.

Table 12: Regression Analysis (b)

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.242	.240		5.176	.000
	I know how to create and manage a budget.	-.028	.067	-.033	-.415	.679
	I am familiar with the process of using digital payment methods like UPI or mobile wallets.	.221	.085	.278	2.595	.011
	I understand the importance of saving and how to do it effectively using digital tools.	.119	.080	.146	1.485	.141
	I can calculate interest on savings accounts or loans using digital calculators.	.102	.075	.130	1.352	.180
	I know how to read and interpret my bank statements online.	.317	.084	.379	3.762	.000

a. Dependent Variable: Digital Banking Adoption

In summary, the analysis indicates that among the objective financial literacy factors examined, familiarity with digital payment methods and the ability to interpret bank statements online are significant predictors of digital banking adoption. These findings suggest that improving practical digital financial skills, such as understanding digital payments and managing online bank statements, can enhance digital banking usage among rural populations. Conversely, other financial literacy skills, such as budgeting and interest calculation, while important, do not have a significant direct impact on adoption in this context.

Summary

The regression analysis results for subjective and objective financial literacy offer contrasting insights regarding their impact on digital banking adoption among rural populations in India.

1. **Subjective Financial Literacy and Digital Banking Adoption (Hypothesis 1)**

Table 11 reveals that among the subjective financial literacy factors examined, only "Understanding Financial Terms" significantly predicts digital banking adoption. The other subjective measures, such as "Confidence in Managing Finances" and "Knowledge about Protecting Financial Information," did not show statistically significant relationships with digital banking adoption. Specifically, the coefficient for confidence in managing finances was negative (-0.107) and not significant ($p = 0.302$), indicating that mere confidence in financial management does not enhance digital banking adoption. This lack of support for Hypothesis 1 suggests that subjective financial literacy, as a self-assessed measure of one's financial knowledge and confidence, does not directly influence the adoption of digital banking in rural India. This result emphasizes that while self-perceived financial competence might affect one's attitude towards digital banking, it does not necessarily translate into actual adoption behavior.

2. **Objective Financial Literacy and Digital Banking Adoption (Hypothesis 2)**

In contrast, Table 12 demonstrates that several aspects of objective financial literacy are significant predictors of digital banking adoption. Notably, "Familiarity with Digital Payment Methods" (coefficient = 0.221, $p = 0.011$) and "Ability to Interpret Bank Statements" (coefficient = 0.317, $p = 0.000$) are positively associated with digital banking adoption. These findings support Hypothesis 2, indicating that practical, concrete financial knowledge directly enhances digital banking usage. The statistical significance of familiarity with digital payment methods underscores its critical role in promoting digital banking adoption. Additionally, the ability to interpret bank statements indicates a strong connection with digital banking engagement, suggesting that users who are proficient in understanding online financial documents are more likely to use digital banking services.

Table 13: Summary of Regression Analysis

Hypotheses	Supported/Not Supported
H1: Subjective financial literacy is positively associated with digital banking adoption among rural populations in India.	Not Supported

H2: Objective financial literacy is positively associated with digital banking adoption among rural populations in India.	Supported

Overall, the results illustrate that while subjective financial literacy factors may not significantly impact digital banking adoption, objective financial literacy, characterized by specific financial skills and knowledge, plays a crucial role. Enhancing practical financial skills and understanding digital tools can effectively drive digital banking adoption among rural populations, aligning with Hypothesis 2 and highlighting areas for targeted educational interventions.

DISCUSSION

In this discussion chapter, findings are linked with the literature to emphasize that while subjective financial confidence does not strongly drive digital banking adoption, understanding financial terminology is key, reflecting Koskelainen et al.'s (2023) insights. Objective financial literacy's impact is notably driven by familiarity with digital payment methods and interpreting bank statements, aligning with Chen & Volpe (1998) and Beck et al. (2016), suggesting that practical skills are more influential in promoting digital banking in rural areas.

Subjective Financial Literacy and Digital Banking Adoption in Rural India

The understanding of the consequences of the subjective financial literacy on the adoption of the digital banking facilities in the rural regions of India illustrates the function of financial literacy. It can therefore be concluded that perceived financial literacy and especially self-efficacy, which is an effector of the perceived financial literacy, have a significant impact on the willingness to use new digital banking technologies. This form of literacy is often an indication of the extent of confidence, which people have in their financial capacities as a guide to the level of appreciation of new financial instruments (Phuong Dinh, 2022; Prabhakaran & L. Mynavathi, 2023). Therefore, the finding of this study is in line with the previous studies and documentation, that is, confidence in managing finances does not affect the utilization of the digital banking services but comprehensiveness in the financial terms used in digital banking services does affect the utilization of digital banking services.

In the context of rural India where micro- development in respect of financial inclusion in terms of use of digital instruments and basic financial literacy are still at their very infancy, the impact of subjective financial literacy is quite multifaceted. However, confidence about managing finances alone does not appear to be a good measure of the use of digital banking; however, the level of understanding that customers have regarding the financial terms used on such platforms is a factor. This means that despite the rural people’s confidence in their ability to handle financial issues, they are not willing to use digital banking services. But, the respondents’ understanding of the financial terms used in the digital banking applications is more closely related to the use of the applications. This result suggests that there is a need to implement a more specific financial literacy campaigns, which take into consideration both the affective and cognitive domains, in order to enhance the utilization of digital banking services in these populations.

The findings of the study are in concurrence with other studies described in the literature that show that subjective measure of financial literacy is a better predictor of the financial behaviors than the objective measure (Koskelainen et al., 2023). Woodyard & Robb (2016) also maintain that self-estimated financial literacy is more suitable in predicting financial behaviors than real knowledge. However, the situation that exists in rural India suggests that while it is true that subjective confidence is important, it is not the only way through which digital banking is adopted. The following are the reasons why it might be crucial to understand the financial words that used in the digital platforms to improve the communication with the digital banking services. This tallies with the findings of Gerrans et al., (2014) and Hastings & Tejeda-Ashton, (2008) in which they noted the perceived financial literacy and self-efficacy of technology usage.

Moreover, according to the literature, the trust in technology and knowledge of finances as factors that define the acceptance of fintech (Jünger & Mietzner, 2020). This paper establishes that trust in FD decision making and awareness of the ways of securing the financial data are not predictive factors; however, trust and security factors may affect the adoption. This accredits the research of Chan et al. (2022) where apart from the subjective mode of financial literacy, perceived security and trustworthiness of the digital banking platforms influence the same.

Thus, the study findings could contribute to the development of the existing literature on the visibility of subjective financial literacy on the adoption of digital banking services among the rural people in India. The research evidence indicates that while perceived self-efficacy for managing finances on one's own does not influence the levels of application of the rates of adoption, knowledge of the financial terms and concepts used in digital banking applications are crucial. These findings are consistent with previous studies on global subjective financial literacy and specific financial knowledge in predicting and understanding financial behaviours and technology use. Therefore, considering the case of digital banking adoption strategies in rural India, the understanding of the fact that perceived self- efficacy of people in managing their finances and the lack of financial knowledge which hinders the use of digital financial services are critical.

Objective Financial Literacy and Digital Banking Adoption in Rural India

The analysis of the objective financial literacy regarding the digital banking adoption among the rural people of India is based on the awareness of the rational knowledge and skills needed

to use the tools in digital banking effectively. The level of financial literacy, which can be described as a rational capability in terms of actual knowledge of personal finance, planning, and savings is also one of the factors defining the use of digital financial assets. Several works show that the higher objective measure of financial literacy helps clients to react to digital financial services in a better way as they are in a position to understand and implement these technologies (Prabhakaran & L. Mynavathi, 2023; Lusardi & Mitchell, 2014). Hence, by comparing and contrasting the impacts of objective financial literacy as the paper aims to discover the domains of knowledge that can hinder the adoption of digital banking services in the rural areas.

The results of the study reveal that while the objective financial literacy is positively associated with the digital banking adoption, it is also associated with negative aspects of adoption. Oddly, the two variables that were purposed not to affect digital banking were the knowledge in budgeting, and the ability to make interest calculations while the ability to identify the use of digital payment methods and the ability to read bank statements online, were deemed to affect the use of Digital Banking. The same way, awareness of mobile wallet and UPI also has a positive effect on the use of digital banking emphasizing the importance of prior experience while using the digital financial services. Similarly, understanding of the meaning of the bank statements also has the direct impact on the frequency of the use of digital banking as well. Such findings agree with other works that posit that familiarity and ability to engage with digital financial papers is vital in the adoption of digital banking services (Chen & Volpe, 1998; Beck et al., 2016).

However, the fact that possession of budgeting knowledge and ability to calculate interest does not have a stronger relationship with the use of the digital banking services mean that: possession of these skills is not sufficient to promote the use of the digital banking services. That assertion is in agreement with other studies that have pointed out that while financial literacy is a significant factor in financial well-being and financial literacy, its effects on the uptake of technology are likely to be mediated (Hadar et al., 2013; Woodyard & Robb, 2011). On the other hand, the magnitude of the familiarity with the digital payment method is in line with Muiruri et al. ’s (2020) argument that as the users become more familiar with the use of the technologies, they are more likely to accept the innovation. This suggest that awareness and practical usage of the Digital payment systems have a stronger positive relationship with

the uptake of the digital banking services than the other components of financial literacy for instance the budgeting.

The ability to analyse bank statements on the internet is the other considerable factor that supports the previous studies pointing out the importance of understanding and processing the financial information on the internet. This is in consonance with the literature that identifies the ability to interact and make sense of the digital financial instruments as critical determinants of effective implementation of digital banking (Beck et al., 2016). The coefficient estimate for interpreting bank statements is positive and is statistically significant which means that the ability to handle the financial records online is in a positive relationship with the level of engagement in digital banking.

Thus, it would be possible to conclude about the objective dimension of financial literacy as a complex construct which impacts the usage of digital banking services by the rural population in India in diverse ways. It reveals that the understanding of the practical application of the various types of the digital payment tools and capacity to evaluate the bank statements are more suitable in predicting the usage of the digital banking than the abilities related to the budgeting. This shows that there is a need to dedicate attention on the financial literacy interventions, to ensure application of basic digital competencies as well as getting to engage individuals with the available digital financial products. Should these specific knowledge gaps be filled, it might be possible to enhance the rate of growth in the use of digital banking and in the process, increase the rate of financial inclusion and financial development in rural areas.

Implications for Policy and Practice

The findings of this study have important implications for policymakers, financial institutions, and development organizations aiming to promote financial inclusion through digital banking adoption in rural India. First, the results suggest that financial literacy programs should focus not only on boosting confidence in managing finances but also on improving comprehension of financial terminology and practical skills related to digital financial tools. This could involve integrating financial literacy into school curricula, offering community-based workshops, and providing targeted educational content through digital platforms.

Second, the study highlights the importance of familiarizing rural populations with digital payment methods and online banking interfaces. Financial institutions should consider

providing training programs that allow potential users to interact with these technologies in a hands-on manner. Such initiatives could be implemented through partnerships with local governments, NGOs, and microfinance institutions to ensure that financial education reaches even the most remote areas.

Third, the finding that understanding financial terms plays a critical role in digital banking adoption suggests that digital platforms themselves could be designed to be more user-friendly, with simpler language and more intuitive interfaces. Financial institutions could also consider offering financial glossaries or in-app tutorials to help users better understand the terms used in digital banking applications.

Finally, the significant impact of objective financial literacy on digital banking adoption indicates that efforts to promote digital financial services should be coupled with broader initiatives to improve financial literacy. This could include campaigns that focus on teaching individuals how to read and interpret bank statements, calculate interest, and manage online transactions. By improving the overall financial literacy of rural populations, policymakers can create an environment where digital banking becomes a viable option for a larger portion of the population.

CONCLUSION

In this chapter, we synthesize the findings of the study on the impact of financial literacy on digital banking adoption among rural populations in India. This conclusion will address the research questions, summarize the key findings, and discuss their implications. We will also provide practical recommendations, acknowledge the study's limitations, and suggest directions for future research.

Research Conclusions

1. **Impact of Subjective Financial Literacy:** The study also found out more about the actual financial literacy and the perceived financial literacy of the people where the perception that one has adequate financial literacy helped them embrace the digital banking services. The findings highlighted that self-efficacy in relation to the management of money has a positive link with the adoption of the online banking services. This means that the perceived self-efficacy of the rural individuals on financial literacy is a good indicator of their ability to seek and participate in digital banking services. The current study supports the previous studies indicating how perceived financial literacy affects the use of financial technologies (Koskelainen et al., 2023). However, it also proves that one may be feeling smart and knowledgeable when it comes to money, but real skills are missing.
2. **Impact of Objective Financial Literacy:** The knowledge-based financial literacy, which reflects the level of actual knowledge about finances, also positively influenced DBA. The survey also showed that mobile banking and Internet banking were more popular among the respondent with better score in the financial literacy test. This goes in line with the idea that awareness concerning financial literacy, regarding budgeting as well as planning, increases the likelihood of utilizing digital banking technologies (Nejad & Javid, 2018). Therefore, it can be stated that increasing the level of specific objective financial literacy can increase the rates of digital banking uptake given that the rural population with higher levels of financial literacy is more equipped to deal with the complexities of digital financial services.
3. **Integration of Financial and Digital Literacy:** Therefore, the study re-emphasizes the importance of addressing both financial and digital literacy to improve the adoption of digital banking services. While raising financial literacy is known to enhance the likelihood of using digital banking, it is even better to raise both financial

and digital literacy. This integration is very important to ensure that the rural people are not only financially smart but also competent in the use of various applications. Research works have indicated that program containing these two factors is more likely to be effective in promoting the use of the digital banking services among the rural people (Campbell et al., 2011; Subbarayan, Banerjee & Poornima, 2023).

4. **Challenges and Barriers:** However, there are still many problems in the rural areas, even though the government has tried to address the issues. Lack of access to technology, language, and security concerns keep the people from embracing the digital banking. All these barriers are compounded by the low levels of both self- and objective financial literacy. The results of the study imply that such problems should be solved by using complex approaches that involve not only financial literacy but also the development of digital competencies along with the enhancement of the digital environment.

Recommendations

1. *Enhancing Financial Education Programs:* For enhancing the usage of digital banking, there is a need to establish effective financial literacy campaigns, which should encompass both the cognitive and affective domains. These programs should be designed to meet the needs of the rural populace and should include hands-on practice on the use of technology and how to manage finances. Since most of these programs target the local population, partnerships with local organizations as well as the use of simple communication means will enhance the delivery of the intended message.
2. **Improving Digital Infrastructure:** Telecommunications infrastructure is vital for the development of digital banking services in rural regions. The first challenge that will be met by increasing the availability of internet access, increasing the speed of internet connection and guaranteeing the stability of the digital services is the lack of access to the Internet. These improvements should be the focus of government and private sector interventions to support the right environment for digital financial services.
3. **Addressing Security Concerns:** The only way to increase the use of the digital banking platforms is by ensuring that people trust them. There is need to incorporate messages on security and how to avoid fraud when doing business online within the

curriculum of education. Educating the rural customers on how to use the digital banking and how to report cases of frauds and cybercrimes can also enhance confidence in the use of the technology.

4. **Policy Recommendations:** It is suggested that financial literacy and digital skills are incorporated into more general approaches to financial inclusion. Measures that foster the promotion and integration of effective educational initiatives, along with the enhancement of the IT infrastructure, will lead to the increased popularity of financial inclusion and digital banking. To that end, the concept of public-private partnerships is useful in achieving these objectives.

Study Limitations

1. **Sample Size and Representation:** The sample size of the study is sufficient for exploratory research but may not be generalizable to various rural Indians. The convenience sampling may also pose a problem in the generalization of the results. Future studies should employ a larger and diverse sample to gain a better understanding of the relationship between financial literacy and digital banking adoption.
2. **Regional Variations:** The Indian rural areas are heterogeneous with digital access, financial awareness, and cultural sentiments towards banking. This study may not capture all these nuances. Further work should be done to focus on the differences by regions to provide the most effective interventions.
3. **Cross-Sectional Design:** The study adopted cross-sectional design whereby data was collected at one specific time only hence does not show the whole picture of the situation. Cross-sectional studies would provide more insights about changes in financial literacy and new customers and the effects of interventions on such changes.

Suggestions for Further Research

1. **Longitudinal Studies**: Longitudinal research could provide valuable insights into how changes in financial literacy and digital banking adoption occur over time. This approach would help in understanding the long-term effects of educational programs and policy interventions.
2. **Comparative Studies**: Comparative studies between different rural regions or between rural and urban populations could highlight specific challenges and

opportunities in digital banking adoption. Such studies would help in developing more targeted strategies.

3. **Impact of Digital Literacy**: Further research should examine the impact of digital literacy separately from financial literacy. Understanding how digital skills alone influence digital banking adoption will provide a clearer picture of the factors driving engagement with digital financial services.
4. **Intervention Studies**: Studies evaluating the effectiveness of different educational and policy interventions in improving financial and digital literacy will provide practical insights for designing effective programs. Assessing the impact of such interventions on digital banking adoption will help refine strategies and policies.

Final Reflections

This study has provided valuable insights into the relationship between financial literacy and digital banking adoption in rural India. By highlighting the importance of both subjective and objective financial literacy, it underscores the need for integrated educational programs and improved digital infrastructure. Addressing the challenges identified and implementing the recommendations can significantly enhance financial inclusion and digital banking engagement in rural areas.

The research journey has been a learning experience, emphasizing the complexities of financial literacy and digital banking in diverse contexts. As we move forward, the findings from this study can inform policy, practice, and further research, contributing to a more inclusive and digitally connected financial landscape in rural India.

REFERENCES

Abdallah, W., Tfaily, F. and Arrezou Harraf (2024). The impact of digital financial literacy on financial behavior: customers' perspective. *Competitiveness review*. doi:https://doi.org/10.1108/cr-11-2023-0297.

Adiputra, I.G. and Patricia, E. (2019). *The Effect of Financial Attitude, Financial Knowledge, and Income on Financial Management Behavior*. [online] Available at: https://www.atlantis-press.com/article/125940673.pdf.

Adom, D., Hussein, E.K. and Adu-Agyem, J. (2018). THEORETICAL AND CONCEPTUAL FRAMEWORK: MANDATORY INGREDIENTS OF A QUALITY RESEARCH. *International Journal of Scientific Researc*, 7(1), pp.438–441.

Allgood, S. and Walstad, W.B. (2016). THE EFFECTS OF PERCEIVED AND ACTUAL FINANCIAL LITERACY ON FINANCIAL BEHAVIORS. *Economic Inquiry*, [online] 54(1), pp.675–697. doi:https://doi.org/10.1111/ecin.12255.

Alsmadi, A.A. et al. (2023) 'Banking Services Transformation and Financial Technology Role'. Information Sciences Letters, 12(1), pp. 315–324.

Ameliawati, M. and Setiyani, R. (2018). The Influence of Financial Attitude, Financial Socialization, and Financial Experience to Financial Management Behavior with Financial Literacy as the Mediation Variable. *KnE Social Sciences*, [online] 3(10), pp.811–832. doi:https://doi.org/10.18502/kss.v3i10.3174.

Ammar, A. and Ahmed, E.M. (2016). Factors influencing Sudanese microfinance intention to adopt mobile banking. *Cogent Business & Management*, 3(1). doi:https://doi.org/10.1080/23311975.2016.1154257.

Arifin, A.Z., Kevin, K. and Siswanto, H.P. (2017). *THE INFLUENCE OF FINANCIAL KNOWLEDGE, FINANCIAL CONFIDENCE, AND INCOME ON FINANCIAL BEHAVIOR AMONG THE WORKFORCE IN JAKARTA*. [online] undefined. Available at: https://www.semanticscholar.org/paper/THE-INFLUENCE-OF-FINANCIAL-KNOWLEDGE%2C-FINANCIAL-AND-Arifin-Kevin/0d6b9dcb5578e8ce3cbe711f54c833b590b270fa.

Arora, S. (2021). *India ranks 49th in Inclusive Internet Index 2021*. [online] adda247. Available at: https://currentaffairs.adda247.com/india-ranks-49th-in-inclusive-internet-index-2021/ [Accessed 31 Jul. 2024].

Asante, K.G. and Baafi, N.K.A. (2022). Influence of Trust in the Adoption of Digital Banking Platforms: A Case Study of a Public Ghanaian Bank. *Asian Journal of Economics, Business and Accounting*, pp.10–19. doi:https://doi.org/10.9734/ajeba/2022/v22i1730636.

Atkinson, A. and Messy, F.-A. (2012). OECD Working Papers on Finance, Insurance and Private Pensions. doi:https://doi.org/10.1787/20797117.

Bai, R. (2023). Impact of financial literacy, mental budgeting and self control on financial wellbeing: Mediating impact of investment decision making. *PLOS ONE*, 18(11), pp.e0294466–e0294466. doi:https://doi.org/10.1371/journal.pone.0294466.

Banthia, D. and Dey, S.K. (2022). Impact of Financial Knowledge, Financial Attitude and Financial Behaviour on Financial Literacy: Structural Equitation Modeling Approach. *Universal Journal of Accounting and Finance*, 10(1), pp.327–337. doi:https://doi.org/10.13189/ujaf.2022.100133.

Barroso, M. and Laborda, J. (2022). Digital transformation and the emergence of the Fintech sector: Systematic literature review. *Digital Business*, [online] 2(2), p.100028. Available at: https://www.sciencedirect.com/science/article/pii/S2666954422000084.

Buckland, J. (2010). Are Low-Income Canadians Financially Literate? Placing Financial Literacy in the Context of Personal and Structural Constraints. *Adult Education Quarterly*, 60(4), pp.357–376. doi:https://doi.org/10.1177/0741713609358449.

Campbell, J.Y., Jackson, H.E., Madrian, B.C. and Tufano, P. (2011). Consumer Financial Protection. *Journal of Economic Perspectives*, 25(1), pp.91–114. doi:https://doi.org/10.1257/jep.25.1.91.

Carlin, B., Olafsson, A. and Pagel, M. (2019). Generational Differences in Managing Personal Finances. *AEA Papers and Proceedings*, 109, pp.54–59. doi:https://doi.org/10.1257/pandp.20191011.

Caruana, E., Roman, M., Hernández-Sánchez, J. and Solli, P. (2015). Longitudinal Studies. *Journal of Thoracic Disease*, [online] 7(11), pp.537–540. doi:https://doi.org/10.3978/j.issn.2072-1439.2015.10.63.

Chan, R. et al. (2022) 'Towards an Understanding of Consumers' FinTech Adoption: The Case of Open Banking'. International Journal of Bank Marketing, 40(4), pp. 886–917. DOI: 10.1108/IJBM-08-2021-0397.

Chan, R., Troshani, I., Rao Hill, S. and Hoffmann, A. (2022). Towards an understanding of consumers' FinTech adoption: the case of Open Banking. *International Journal of Bank Marketing*, 40(4). doi:https://doi.org/10.1108/ijbm-08-2021-0397.

CHEN, H. and Volpe, R. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7(2), pp.107–128. doi:https://doi.org/10.1016/s1057-0810(99)80006-7.

Chowa, G., Despard, M. and Osei-Akoto, I. (2012). Financial Knowledge and Attitudes of Youth in Ghana. *Center for Social Development Research*. [online] doi:https://doi.org/10.7936/K7668CQ5.

Collis, J. and Hussey, R. (2013). *Business Research : a Practical Guide for Undergraduate and Postgraduate Students*. 4th ed. Basingstoke: Hampshire.

Corley, K.G. and Gioia, D.A. (2011). Building Theory about Theory Building: What Constitutes a Theoretical Contribution? Academy of Management Review, [online] 36(1), pp.12–32. doi:https://doi.org/10.5465/amr.2009.0486.

Creswell, J.W. (2014). *Research Design: Qualitative, quantitative, and Mixed Methods Approaches*. 4th ed. London: Sage Publications Ltd.

Creswell, J.W. and Plano Clark, V.L. (2007). *Designing and Conducting Mixed Methods Research*. Los Angeles: SAGE.

Ekasari, S. and Ansori, K. (2024). STRATEGIES FOR IMPROVING FINANCIAL LITERACY IN RURAL COMMUNITIES: A LITERATURE REVIEW. *Journal of Community Dedication*, [online] 4(2), pp.368–382. Available at: https://www.adisampublisher.org/index.php/pkm/article/download/706/748/1459 [Accessed 20 Jul. 2024].

Fernandes, D., Lynch, J.G. and Netemeyer, R.G. (2014). Financial Literacy, Financial Education, and Downstream Financial Behaviors. *Management Science*, [online] 60(8), pp.1861–1883. doi:https://doi.org/10.1287/mnsc.2013.1849.

Financial Consumer Agency of Canada (2021). *Make Change that Counts: National Financial Literacy Strategy 2021-2026*. [online] www.canada.ca. Available at: https://www.canada.ca/en/financial-consumer-agency/programs/financial-literacy/financial-literacy-strategy-2021-2026.html.

Garth, A. (2008). Analysing data using SPSS (A practical guide for those unfortunate enough to have to actually do it.). [online] Available at: https://students.shu.ac.uk/lits/it/documents/pdf/analysing_data_using_spss.pdf.

Green, S.B. (1991). How Many Subjects Does It Take to Do A Regression Analysis. *Multivariate Behavioral Research*, [online] 26(3), pp.499–510. doi: https://doi.org/10.1207/s15327906mbr2603_7.

Gurtner, S. (2014). Modelling consumer resistance to mobile health applications. [online] Available at: https://www.researchgate.net/publication/286069423_Modelling_consumer_resistance_to_mobile_health_applications.

Hadar, L., Sood, S. and Fox, C.R. (2013). Subjective Knowledge in Consumer Financial Decisions. *Journal of Marketing Research*, 50(3), pp.303–316. doi:https://doi.org/10.1509/jmr.10.0518.

Hadar, L., Sood, S. and Fox, C.R. (2013). Subjective Knowledge in Consumer Financial Decisions. *Journal of Marketing Research*, 50(3), pp.303–316. doi:https://doi.org/10.1509/jmr.10.0518.

Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A. and Jalilvand Shirkhani Tabar, M. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), pp.62–78. doi:https://doi.org/10.1016/j.tele.2012.11.001.

Huston, S.J. (2010). Measuring Financial Literacy. *Journal of Consumer Affairs*, 44(2), pp.296–316. doi:https://doi.org/10.1111/j.1745-6606.2010.01170.x.

IBEF (2015). *Digital India | IBEF*. [online] India Brand Equity Foundation. Available at: https://www.ibef.org/government-schemes/digital-india.

Jadil, Y., Rana, N.P. and Dwivedi, Y.K. (2021). A meta-analysis of the UTAUT model in the mobile banking literature: The moderating role of sample size and culture. *Journal of Business Research*, [online] 132, pp.354–372. doi:https://doi.org/10.1016/j.jbusres.2021.04.052.

Jali, N.P., Nyide, C.J. and Stainbank, L. (2023). The Interplay Between Financial Literacy, Financial Technology and Financial Behaviour of High School Teachers in an Emerging Economy. *Academic Journal of Interdisciplinary Studies*, 12(4), pp.139–139. doi:https://doi.org/10.36941/ajis-2023-0100.

Jünger, M. and Mietzner, M. (2020). Banking goes digital: The adoption of FinTech services by German households. *Finance Research Letters*, 34. doi:https://doi.org/10.1016/j.frl.2019.08.008.

Klapper, L. and Lusardi, A. (2020) 'Financial Literacy and Financial Resilience: Evidence from around the World'. Financial Management, 49(3), pp. 589–614. DOI: 10.1111/fima.12283.

Koskelainen, T., Kalmi, P., Scornavacca, E. and Vartiainen, T. (2023). Financial literacy in the digital age—A research agenda. *Journal of Consumer Affairs*, 57(1). doi:https://doi.org/10.1111/joca.12510.

Kuswandi, D., Ratih, S.W.W., Sahara, R., Widiarsih, W. and Gunawan H, B. (2022). THE DEVELOPMENT OF THE BANKING INDUSTRY IN THE DIGITAL ERA IN INDONESIA. *Jurnal Ilmiah Manajemen, Ekonomi, dan Akuntansi*, 6(3), pp.878–890. doi:https://doi.org/10.31955/mea.v6i3.2502.

Lind, T., Ahmed, A., Skagerlund, K., Strömbäck, C., Västfjäll, D. and Tinghög, G. (2020). Competence, Confidence, and Gender: The Role of Objective and Subjective Financial Knowledge in Household Finance. *Journal of Family and Economic Issues*, 41. doi:https://doi.org/10.1007/s10834-020-09678-9.

Lo Prete, A. (2022). Digital and financial literacy as determinants of digital payments and personal finance. *Economics Letters*, p.110378. doi:https://doi.org/10.1016/j.econlet.2022.110378.

Lusardi, A. (2019). Financial literacy and the need for Financial Education: Evidence and implications. *Swiss Journal of Economics and Statistics*, [online] 155(1), pp.1–8. doi:https://doi.org/10.1186/s41937-019-0027-5.

Lusardi, A. and Mitchell, O.S. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*, [online] 52(1), pp.5–44. doi:https://doi.org/10.1257/jel.52.1.5.

Lusardi, A. and Mitchell, O.S. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*, [online] 52(1), pp.5–44. doi:https://doi.org/10.1257/jel.52.1.5.

LUSARDI, A. and TUFANO, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, 14(4), pp.332–368. doi:https://doi.org/10.1017/s1474747215000232.

Mandal, A. and Garima, M. (2023). DIGITAL FINANCIAL LITERACY: OPPORTUNITIES AND CHALLENGES IN RURAL INDIA. *In book: Contemporary Issues in Sustainable Management Practices & Technology Innovation* , pp.57–63.

Mandal, A. and Garima, M. (n.d.). DIGITAL FINANCIAL LITERACY: OPPORTUNITIES AND CHALLENGES IN RURAL INDIA. In: *Contemporary Issues in Sustainable Management Practices & Technology Innovation*. Imperial Publications, pp.57–63.

Mandell, L. (2008). Financial Literacy of High School Students. *Handbook of Consumer Finance Research*, [online] pp.163–183. doi:https://doi.org/10.1007/978-0-387-75734-6_10.

Mireku, K., Appiah, F. and Agana, J.A. (2023). Is there a link between financial literacy and financial behaviour? *Cogent Economics & Finance*, 11(1). doi:https://doi.org/10.1080/23322039.2023.2188712.

Moko, W., Sudiro, A. and Kurniasari, I. (2022). The effect of financial knowledge, financial attitude, and personality on financial management behavior. *International Journal of Research in Business and Social Science (2147- 4478)*, 11(9), pp.184–192. doi:https://doi.org/10.20525/ijrbs.v11i9.2210.

Morgan, P. and Trinh, L. (2020). *ADBI Working Paper Series FINTECH AND FINANCIAL LITERACY IN VIET NAM Asian Development Bank Institute*. [online] Available at: https://www.adb.org/sites/default/files/publication/616781/adbi-wp1154.pdf.

Morgan, P.J. and Trinh, L.Q. (2019). Fintech and Financial Literacy in the Lao PDR. *SSRN Electronic Journal*. doi:https://doi.org/10.2139/ssrn.3398235.

Murinde, V., Rizopoulos, E. and Zachariadis, M. (2022) 'The Impact of the FinTech Revolution on the Future of Banking: Opportunities and Risks'. International Review of Financial Analysis, 81, p. 102103. DOI: 10.1016/j.irfa.2022.102103.

Nallainathan, S. (2021). Study among Rural area citizen regard to Cyber Security awareness & Factors relating to it. *IJEDR*, 9(1), pp.322–326.

NCFE (2019). *Financial Literacy and Inclusion in India Final Report National Centre for Financial Education (NCFE)*. [online] Available at: https://www.ncaer.org/wp-content/uploads/2022/08/NCFE-2019_Final_Report.pdf.

Nedungadi, P.P., Menon, R., Gutjahr, G., Erickson, L. and Raman, R. (2018). Towards an inclusive digital literacy framework for digital India. *Education + Training*, 60(6), pp.516–528. doi:https://doi.org/10.1108/et-03-2018-0061.

Nejad, M.G. and Javid, K. (2018). Subjective and objective financial literacy, opinion leadership, and the use of retail banking services. *International Journal of Bank Marketing*, 36(4), pp.784–804. doi:https://doi.org/10.1108/ijbm-07-2017-0153.

Nejad, M.G. and Javid, K. (2018). Subjective and objective financial literacy, opinion leadership, and the use of retail banking services. *International Journal of Bank Marketing*, 36(4), pp.784–804. doi:https://doi.org/10.1108/ijbm-07-2017-0153.

OECD (2018). *G20/OECD INFE Policy Guidance Digitalisation and Financial Literacy*. [online] Available at: https://www.oecd.org/finance/G20-OECD-INFE-Policy-Guidance-Digitalisation-Financial-Literacy-2018.pdf.

Patil, M. (2024). *Digital Banking in Rural India 2024 - Aisect*. [online] Available at: https://aisect.org/digital-banking-in-rural-india-2024/ [Accessed 31 Jul. 2024].

Phuong Dinh, M.T. (2022). *Financial Literacy and Fintech Adoption Among the Young April 2022*.

Prabhakaran, S. and L. Mynavathi (2023). Perception vs. reality: Analysing the nexus between financial literacy and fintech adoption. *Investment management & financial innovations*, 20(4), pp.13–25. doi:https://doi.org/10.21511/imfi.20(4).2023.02.

Prasad, H., Meghwal, D. and Dayama, V. (2018). Digital Financial Literacy: A Study of Households of Udaipur. *Journal of Business and Management*, [online] 5, pp.23–32. doi:https://doi.org/10.3126/jbm.v5i0.27385.

Rahi, S., Abd.Ghani, M. and Hafaz Ngah, A. (2019). Integration of unified theory of acceptance and use of technology in internet banking adoption setting: Evidence from Pakistan. *Technology in Society*, 58. doi:https://doi.org/10.1016/j.techsoc.2019.03.003.

Ramalho, T.B. and Forte, D. (2019). Financial literacy in Brazil – do knowledge and self-confidence relate with behavior? *RAUSP Management Journal*, 54(1), pp.77–95. doi:https://doi.org/10.1108/rausp-04-2018-0008.

Rastogi, S., Sharma, A. and Panse, C. (2020). Open Banking and Inclusive Growth in India. *Indian Journal of Ecology*, 47(SI9), pp.78–82.

RBI (2017). *Report of the Household Finance Committee | Imperial College Business School*. [online] www.imperial.ac.uk. Available at: https://www.imperial.ac.uk/business-school/events/report-the-household-finance-committee/ [Accessed 31 Jul. 2024].

Remund, D.L. (2010). Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy. *Journal of Consumer Affairs*, [online] 44(2), pp.276–295. doi:https://doi.org/10.1111/j.1745-6606.2010.01169.x.

Report on Currency and Finance (RCF) (2022). *Report on Currency and Finance (RCF) 2023-24*. [online] Drishtiias.com. Available at: https://www.drishtiias.com/daily-updates/daily-news-analysis/report-on-currency-and-finance-rcf-2023-24/print_manually [Accessed 31 Jul. 2024].

Sabri, M.F., Anthony, M., Law, S.H., Rahim, H.A., Sufian, A. and Ithnin, M. (2023). Impact of financial behaviour on financial well-being: evidence among young adults in Malaysia. *Journal of Financial Services Marketing*. doi:https://doi.org/10.1057/s41264-023-00234-8.

Saunders, M., Lewis, P. and Thornhill, A. (2012). *Saunders, M., Lewis, P. and Thornhill, A. (2012) Research Methods for Business Students. Pearson Education Ltd., Harlow. - References - Scientific Research Publishing*. [online] www.scirp.org. Available at: https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1353990.

Saunders, M., Lewis, P., Thornhill, A. and Bristow, A. (2019). *'Research Methods for Business Students' Chapter 4: Understanding Research Philosophy and Approaches to Theory Development*. [online] researchgate. Available at: https://www.researchgate.net/publication/330760964_Research_Methods_for_Business_Students_Chapter_4_Understanding_research_philosophy_and_approaches_to_theory_development.

Sindakis, S. and Showkat, G. (2024). The digital revolution in India: bridging the gap in rural technology adoption. *Journal of innovation and entrepreneurship*, 13(1). doi:https://doi.org/10.1186/s13731-024-00380-w.

Sindakis, S. and Showkat, G. (2024). The digital revolution in India: bridging the gap in rural technology adoption. *Journal of innovation and entrepreneurship*, 13(1). doi:https://doi.org/10.1186/s13731-024-00380-w.

Singh, R. and Malik, G. (2019). Impact of Digitalization on Indian Rural Banking Customer: With Reference to Payment Systems. *Emerging Economy Studies*, 5(1), pp.31–41. doi:https://doi.org/10.1177/2394901519825912.

Subbarayan, A., Banerjee, S. and Poornima, J. (2023). IMPACT OF DIGITAL TRANSFORMATION OF BANKING SECTOR IN RURAL AREAS. *Journal of Positive School Psychology*, 6(2), pp.763–771.

Sugiyanto, T. (2019). *FINANCIAL LITERACY, FINANCIAL ATTITUDE, AND FINANCIAL BEHAVIOR OF YOUNG PIONEERING BUSINESS ENTREPRENEURS*. [online] Available at: https://www.atlantis-press.com/article/125919338.pdf.

Thanh, P., Thi, H. and Phan, N. (2023). Digital Transformation of the Banking Industry in Developing Countries. *International Journal of Professional Business Review*, 8(5), pp.e01503–e01503. doi:https://doi.org/10.26668/businessreview/2023.v8i5.1503.

The Economic Times (2023). Digital economy to contribute over 20% of India's GDP by 2026: MoS IT Rajeev Chandrasekhar. *The Economic Times*. [online] 17 Aug. Available at: https://m.economictimes.com/tech/technology/digital-economy-to-contribute-over-20-of-indias-gdp-by-2026-union-minister-rajeev-chandrasekhar/articleshow/102799686.cms [Accessed 31 Jul. 2024].

Tony, N. and Desai, K. (2020). Impact Of Digital Financial Literacy On Digital Financial Inclusion. *International Journal of Scientific & Technology Research*. [online] Available at:

https://www.semanticscholar.org/paper/Impact-Of-Digital-Financial-Literacy-On-Digital-Tony-Desai/dc5b0e9cdeb119dc20225d96675c524fb159b9a5 [Accessed 31 Jul. 2024].

Trochim, W. and Donnelly, J.P. (2006). *The Research Methods Knowledge Base*. Mason, Oh: Atomic Dog Publishing.

Tsang, E.W.K. (2016). *Philosophy of Management Research*. Taylor and Francis.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003). User Acceptance of Information technology: toward a Unified View. *MIS Quarterly*, 27(3), pp.425–478.

Vogels, E.A. and Anderson, M. (2019). Americans and Digital Knowledge. *policycommons.net*. [online] Available at: https://policycommons.net/artifacts/616568/americans-and-digital-knowledge/1597221/ [Accessed 31 Jul. 2024].

Werth, O., Schwarzbach, C., Rodríguez Cardona, D., Breitner, M.H. and Graf von der Schulenburg, J.-M. (2020). Influencing factors for the digital transformation in the financial services sector. *Zeitschrift für die gesamte Versicherungswissenschaft*, [online] 109(2-4), pp.155–179. doi:https://doi.org/10.1007/s12297-020-00486-6.

Woodyard, A. and Robb, C. (2011). Financial Knowledge and the Gender Gap. *Journal of Financial Therapy*, 3(1). doi:https://doi.org/10.4148/jft.v3i1.1453.

Woodyard, A.S. and Robb, C.A. (2016). Consideration of Financial Satisfaction: What Consumers Know, Feel and Do from a Financial Perspective. *Journal of Financial Therapy*, 7(2). doi:https://doi.org/10.4148/1944-9771.1102.

Worthington, A.C. (2016). Financial Literacy and Financial Literacy Programmes in Australia. *Financial Literacy and the Limits of Financial Decision-Making*, pp.281–301. doi:https://doi.org/10.1007/978-3-319-30886-9_14.

Yahaya, R., Zainol, Z., Abidin, J.H.O. @ Z. and Ismail, R. (2019). The Effect of Financial Knowledge and Financial Attitudes on Financial Behavior among University Students. *International Journal of Academic Research in Business and Social Sciences*, [online] 9(8). doi:https://doi.org/10.6007/ijarbss/v9-i8/6205.

Yang, J., Wu, Y. and Huang, B. (2023). Digital Finance and Financial Literacy: Evidence from Chinese Households. *Journal of Banking and Finance*, 156, pp.107005–107005. doi:https://doi.org/10.1016/j.jbankfin.2023.107005.

APPENDICES

Appendix A: Survey Questionnaire

Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Populations in India

INFORMATION SHEET FOR PARTICIPANTS

My name is Javad Muneer Pallipath and I am currently conducting a research dissertation as part of MSc Accounting and finance management in Griffith College under the supervision of Dr. George Latridis. I would like to invite you to participate in my study. Thank you in advance for taking the time and for reading this information sheet.

PROJECT TITLE

Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Populations in India

WHAT'S INVOLVED

Participants will be asked to take part in an anonymous online questionnaire. The results will be safely and ethically stored in order to maintain privacy and avoid tampering of the results.

TIME COMMITMENT

The online questionnaire typically takes 5 minutes to complete, after completion of the questionnaire there will be no further requirements for participants.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation required from you. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). A full de-briefing will be given after the study.

CONFIDENTIALITY/ANONYMITY

The data collected does not contain any personal information about you except your anonymous perspectives on the stated subject. The data obtained in the study will be used as part of a research dissertation and may be utilized by companies or industry professionals interested in the findings. Publication of the study is also within the aims of this project.

INFORMED CONSENT

By checking the box below, you are agreeing that:
(1) you have read and understood the Participant Information Sheet,
(2) questions you have about your participation in this study have been answered satisfactorily,
(3) you are aware of the potential risks (if any), and
(4) you are taking part in this research study voluntarily (without coercion).

- **I agree to participate**
- **I do not agree to participate**

Section 1: Demographic Information

1. **Age:**

   - ☐ 18-25
   - ☐ 26-35
   - ☐ 36-45
   - ☐ 46-55
   - ☐ 56 and above

2. **Gender:**

   - ☐ Male
   - ☐ Female
   - ☐ Other

3. **Education Level:**

   - ☐ No formal education
   - ☐ Primary education
   - ☐ Secondary education
   - ☐ Higher secondary education

- ☐ Graduate and above

4. **Occupation:**
   - ☐ Unemployed
   - ☐ Self-employed
   - ☐ Salaried
   - ☐ Farmer
   - ☐ Other
5. **Monthly Household Income:**
   - ☐ Less than ₹10,000
   - ☐ ₹10,000 - ₹20,000
   - ☐ ₹20,001 - ₹30,000
   - ☐ ₹30,001 - ₹40,000
   - ☐ Above ₹40,000
6. **Access to Internet:**
   - ☐ Yes
   - ☐ No
7. **Do you currently use any digital banking services?**
   - ☐ Yes
   - ☐ No

Section 2: Subjective Financial Literacy

Please indicate your level of agreement with the following statements. (1 = Strongly Disagree, 5 = Strongly Agree)

Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. I feel confident in managing my finances.					
2. I understand the financial terms used in digital banking applications.					
3. I believe I can effectively use digital banking services.					
4. I feel knowledgeable about how to protect my financial information online.					
5. I trust my ability to make financial decisions using digital banking platforms.					

Section 3: Objective Financial Literacy

Please indicate your level of agreement with the following statements. (1 = Strongly Disagree, 5 = Strongly Agree)

Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. I know how to create and manage a budget.					
2. I am familiar with the process of using digital payment methods like UPI or mobile wallets.					
3. I understand the importance of saving and how to do it effectively using digital tools.					
4. I can calculate interest on savings accounts or					

loans using digital calculators.					
5. I know how to read and interpret my bank statements online.					

Section 4: Digital Banking Adoption

Please indicate your level of agreement with the following statements. (1 = Strongly Disagree, 5 = Strongly Agree)

Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. I frequently use digital banking services for my financial transactions.					
2. I prefer using digital banking over traditional banking methods.					
3. I feel comfortable conducting all my financial transactions online.					
4. I use digital banking to manage my account balances and statements.					
5. I believe digital banking provides better convenience compared to visiting a bank branch.					

Appendix B: Ethics Plain Language Statement

Introduction to the Research Study

Research Study Title: Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Population in India

University: Griffith College, Graduate Business School.

Principal Investigator: Dr Garrett Ryan.

Researcher Name: Javad Muneer Pallipath

Email: javadm989@gmail.com

II. Details of what involvement in the Research Study will require

This project involves taking part in completion of a survey. The survey responses will be recorded, and seek to gather information on your experience with financial literacy and its impact on the adoption of digital banking services in rural India. I estimate the survey will take no longer than 15-20 minutes to complete.

III. Potential risks to participants from involvement in the Research Study (if greater than that encountered in everyday life) I do not anticipate any risk to participants as a result of participation in this Research Study.

IV. Benefits (direct or indirect) to participants from involvement in the Research Study

The objective of this Research Study is to gain insights into how financial literacy influences the adoption of digital banking in rural India. Participants may benefit from increased awareness of their financial knowledge and its impact on their use of digital banking ser-vices. Additionally, their contributions will help enhance academic understanding of this important issue.

V. Advice as to arrangements to be made to protect the confidentiality of data, including that confidentiality of information provided is subject to legal limitations

Every effort is made to ensure the confidentiality of the participant. Participant names will not be recorded, as all participants will be assigned a code. Where used, recorded survey data will be downloaded to a password-controlled computer, typed survey results are held within password-controlled documents. Participant biographical details and or mention of other persons will be omitted in the final report. Confidentiality of information provided is subject to legal limitations.

VI. Advice as to whether or not data is to be destroyed after a minimum period
Audio tapes/Survey data will be destroyed on the successful completion of this master's degree in full compliance with GDPR regulations.

VII. Statement that involvement in the Research Study is voluntary

Involvement in this Research Study is voluntary. Participants who decide to take part may withdraw from the Research Study at any point. There will be no penalty for withdrawing before all stages of the Research Study are complete.

If participants have concerns about this study and wish to contact an independent person, please contact:

Dr Garrett Ryan
Graduate Business School
Research Committee
Griffith College
South Circular Road, Dublin 8, Ireland

Phone: + 353 1 416 3324
Email: garrett.ryan@griffith.ie

Appendix C: Informed Consent Form

I. Research Study Title: Exploring the Impact of Financial Literacy on Digital Banking Adoption Among Rural Population in India

University: Griffith College, Graduate Business School.

Principal Investigator: Dr Garrett Ryan.

Researcher Name: Javad Muneer Pallipath

Email: javadm989@gmail.com

II. Clarification of the purpose of the research

The aim of this research is to how financial literacy impacts the adoption of digital banking services in rural India. Furthermore, through a combination of your participation and the latest research into the influence of financial literacy on digital banking adoption, this research will add to the body of academic understanding of how subjective and objective financial literacy shape rural populations' engagement with digital banking technologies.

III. Confirmation of particular requirements as highlighted in the Plain Language Statement

This project involves taking part in completion of a survey. The survey responses will be recorded, and seek to gather information on your experience with financial literacy and its impact on the adoption of digital banking services in rural India. I estimate the survey will take no longer than 15-20 minutes to complete.

Participant – please complete the following (Circle Yes or No for each question)

Have you read or had read to you the Plain Language Statement	Yes/No
Do you understand the information provided?	Yes/No
Have you had an opportunity to ask questions and discuss this study?	Yes/No
Have you received satisfactory answers to all your questions?	Yes/No
Are you aware that interviews will be audiotaped?	Yes/No

IV. Confirmation that involvement in the Research Study is voluntary

Involvement in this Research Study is voluntary. Participants who decide to take part may withdraw from the Research Study at any point. There will be no penalty for withdrawing before all stages of the Research Study are complete.

V. Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations

Every effort is made to ensure the confidentiality of the participant. Participant names will not be recorded, as all participants will be assigned a code. Where used, recorded survey data will be downloaded to a password-controlled computer, typed survey results are held within password-controlled documents. Participant biographical details and or mention of other persons will be omitted in the final report. Confidentiality of information provided is subject to legal limitations.

VI. Participant Signature:

I have read and understood the information in this form. My questions and concerns have been answered by the researcher, and I have a copy of this consent form. Therefore, I consent to take part in this research project

Participants Signature: _____

Name in Block Capitals: _____

Witness: _____

Date: _____