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EMPOWERMENT AT HER FINGERTIPS: A DIGITAL REVOLUTION FOR RURAL WOMEN

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Abstract
Digital technology has delivered a revolutionary impact on every sector in the country. Government initiations and infrastructure for digital growth especially in the financial sector gained revolutionary changes in past decades with the introduction of digital financial services such as ATMS, POS Terminals, internet banking, E-wallets, mobile banking, payment apps, and many more. Accessibility to mobile phones and internet-related services to mass allowed many people to use digital services. Digital financial services give women an opportunity to use financial services at their fingertip and allow her to be financially literate, stable and independent so that she can overcome gender biases and inequality in financial terms. The primary objective of the research is to analyse the role of digital financial services on empowering rural women in her journey towards financial independency. So this study evaluates the influence of the digital revolution in the banking sector on rural women by concentrating on how the revolution in digital financial services changed their financial activity and empowered them.
The study uses a quantitative survey questionnaire consisting of questions relating to access to financial services, decision-making, economic participation, and perception towards digital financial services to know how the digital revolution has empowered them. The present study is concentrated on rural women staying in the Bengaluru rural district of Karnataka state. The preliminary finding of the investigation shows that digital financial services such as ATMS and mobile payment apps such as Google Pay, Paytm, etc. have helped women to effortlessly do their transactions and save their time to stand in queue before banks to get cash for their requirements. It is also recognised that digital financial services have made them experience the empowerment in society; however, they perceive security concerns and a lack of confidence in digital banking services as hindrance to utilise the digital services. To bring light to the topic, the importance of this study lies in identifying the level of awareness and perception of rural women towards digital financial services, as this study tries to suggest policies to enhance digital financial education in rural women as empowerment is in educating the people on the issues and opportunity available to them. The government should leverage the technological changes to reach the last person in the country so that accessibility and usability of digital services will allow economic growth and empowerment of rural and unorganized sector.

Keywords: Digital financial services, Digital finance, rural women, women empowerment and financial empowerment.

Introduction
The adoption of digital technology has impacted human beings socially, culturally, and economically. Digital tools brought automation into the system and changed the way individuals handle specific situations with certain things, especially in banking systems and operations. Digital technology has brought a revolutionary impact on the financial sector, banking has become online almost every activity is achievable using online banking aided by internet and mobile phones. Digital Financial Services are the major outcome of innovation in technology in financial services, which have reached unreserved,

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underprivileged populations through easy access and inclusion. Digital financial services allow users to pay, transfer, save, and avail of loan facilities very conveniently and cost-effectively.

Digital financial services offer new opportunities to rural women by improving their financial independence, commitment to the economy, and adherence to a positive view on financial management where they rely on a new digital source of financial services. As technology continues to develop, the digital financial services that rural women need must continue to be developed and used to enhance women's rights, forging a route to a more inclusive and equal future. Women are a major component of the population contributing to the advancement of the nation's economy. Digital financial services, especially mobile money and digital banking, can grant women independent access to financial services. By increasing financial inclusion among women through digital financial services enables them to make the decision about their money without depending on others. They can save, pay, and borrow without the necessity for male members; it is not required for them to rely on others in order to make financial decisions that will grant them empowerment within the family. The primary factors contributing for the lack of access by women to traditional banking services include geographic isolation, cultural norms, or lack of identification documents.

The Government of India has implemented the Enhanced Access and Service Excellence (EASE) program in the banking sector, leading to significant changes in the banking and financial industry. The current iteration, EASE 6.0 (FY24), consists of 4 themes and 22 action points. Theme 1 focuses on "Delivering excellence in customer service with digital enablement," addressing aspects such as hassle-free branch banking, seamless call-center experiences, intuitive mobile/internet banking, complaint redressal, customer acquisition, retention, relationship deepening, and inclusive near-home service delivery (Ministry of Finance, 2023). These efforts reflect the government's commitment to promoting financial inclusion, complemented by various initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), Atal Pension Yojana, and similar schemes.

Women in rural areas with the help of self-help groups save money and access finance easily with the government scheme PMJDY of opening zero balance bank accounts to every single person, women had greater opportunities to establish individual bank accounts and participate in banking activities. Digitalization of financial services has also impacted on the utilization of banking services in rural areas. It is evident that nearly every grocery shops and street vendor now offer UPI payment facilities to their customers. So, this shows how there is acceptance of digital payments. Women in rural areas majorly depend on agricultural activities, tailoring work, and other artistic works which earn them less income, even some women in rural women find jobs in garments and industries. Education is the most important weapon for rural women to secure their future and be economically stable. Still, people in rural areas follow norms and don't educate the women, women only get basic education and stop their education for the sake of family and these implications are stopping them from achieving in their careers and standing strong in the society. This culture makes them to depend on their father, husband or other male member of the family financially. So, educating women in rural areas gives them access to technology, finance, and other economic activities and empowers them to achieve in their economic freedom in society.

Meaning of Digital Financial Services

DFS means financial services accessed and delivered digitally, using mobile, internet, and digital payment to provide secure, affordable, and stable financial products and services(Van Niekerk & Phaladi, 2021, Sharma, 2022, Babarinde et al., 2020). Using financial services without going physically to financial institutions and banks allows individuals to access finance at their convenience, these are services offered both by banks and non-banks, and also they fill gaps between the banks and the last person in the economy (Perlman, 2019) . COVID-19 gave a boost to digital finance as personal human

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interactions were restricted due to the virus, the people started adopting digital finance during the pandemic which resulted in the expansion of digital financial services (Kumari, 2022), as he highlights the influence of COVID-19 on boosting digital finance all over the country.

Components of digital financial services

There are multiple digital financial services available for users but a few important services are listed below.

1. ATMS, Credit and debit cards- Automated machines allow bank customers to withdraw their money with the plastic cards given to them by banks, they provide accessibility and convenience to encash money easily without going to banks. Cards enable the customer to access and withdraw their money in ATMs and pay online at their convenience, debit cards operate as prepaid whereas credit cards are postpaid in cash withdrawals.
2. Mobile banking: convenience banking service provided by the banks to the customers to easily make the transactions using the smartphone or tablet without any physical visits. This allows access the banking services through mobile phones. This can be done through a bank app installed on the mobile phone and registered through a mobile number. Example: SBI mobile banking app YONO SBI banking. Each bank has its applications installed in the mobile phones of the customers, which can be used with the help of internet services. Mobile banking gives the unique experience to users to use banking services on their mobile phones.
3. m-Wallet: Mobile applications like Google Pay, PayPal, and Apple Pay on smartphones with the aid of the internet and stored bank account details allow account holders to conduct out transactions effortlessly using smartphones. These are the most frequently utilised services for paying bills on groceries and online shopping
4. UPI: Unified Payments Interface uses mobile applications for merchant payments by merging several banking features of various/multiple bank accounts. UPI is fast fast-growing digital service in India and also abroad. It gives unique features and easy to do online transactions linked to bank accounts and mobile applications. This is most trusted and secured.

These are some of the digital financial services in which this study has concentrated. As it only focuses on the rural populations advanced-level services such as AI and blockchain-enabled services, neo-banks, etc. have been excluded. Digital services allow banks to keep digital records of their customers and easily analyse their activities. Digital financial services come with both advantages and disadvantages, the major advantages of digital financial services are affordability, convenience, and effectiveness. For a successful implementation of digital financial services, the major backbone is its technological settings and telecommunication networks. The major drawbacks of digital services are lack of reach to the internet, smartphones and also digital infrastructure. Governments are trying to bridge this gap with various schemes and permitting corporate firms to establish the proper infrastructure for digital services.

Department of Financial Services is encouraging the robust ecosystem for digital payments, it was observed that electronic payment transactions accounted for over 14,726 crore transactions in 2023-24(till February 2024) compared to FY 2012-13 transactions which accounted for 162 crore transactions, accordingly, India's share in digital transactions compared to all nations in the world is nearly 46%. (Ministry of Finance, 2023). Fintech firms and banking institutions are collaborating to bring strategic changes and allow user-friendly practices in banking and finance with the help of RBI and the government. The objective of government towards creating a digital nation and an empowered nation has allowed innovations in finance and technology, the ecosystem for digital India is building in a high phase allowing policymakers, industries, and users a new experience.

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Digital inclusion and digital financial services are connected because with rise in phase of digital inclusion allows to rise in the reach of digital financial services in the country. The Direct Benefit Transfer feature which was implemented is also one of the factors that allows the citizens to get direct benefits from the government, this is possible only if the citizen has any kind of bank account or post office account, so many rural people are benefited by this initiative, so by bringing such unique systems financial inclusion can be possible. Also, many schemes of government require bank accounts which allow rural individuals who are not system-friendly to open their bank accounts. Financial services have reached rural individuals with rapid policy changes and the digital revolution, so it is crucial to analyze its impact on their lives and also make policy changes to increase their perception and interest in using financial services.

Hence this study focuses on how the digital revolution in the financial sector has empowered Females residing in remote rural regions as it brings greater importance to studying the extent of financial inclusion concentration given to women due to least concentration on them when it comes to contributions to the economy.

Literature review

Compared to men, women in rural areas are less likely to run their businesses. Rural-urban comparison reveals that there are more self-employed people in the countryside because there are fewer jobs. The participation of women in corporate is enhanced by inclusion in the financial sector. It is more probable for females who are educated to access various financial instruments, financial inclusion allows women to take up entrepreneurial activities, and empowerment is achieved (Kumarasamy et al., 2023), this study highlights the importance of financial inclusion to enhance entrepreneurship as it very important that literacy level will also play a critical role in financial inclusion. To reduce gender inequality in society, women prioritise to upskill their knowledge and educate themselves with the ongoing technological changes as their study (Roy & Patro, 2022) emphasizes the need for interventions to focus on reducing gender disparities in financial inclusion and suggest further research on topics such as digital finance, policy to improve financial literacy, and removing socio-cultural barriers.

UPI payments have seen greater growth in past decades, according to the key findings of (J. Singh & Singh, 2024) cards are less popular as compared to mobile and UPI payments with significant differences in the age and income of users. Young and well-educated males seem to comprehend better advantages of electronic payments like convenience and openness. Electronic transactions along with the welfare system increase the transactions which raises earnings and skills which results in lowering inequality rates and poverty levels. This study only concentrated on the urban population and didn't include another group of people.(Goswami et al., 2022) The study found that consumers in remote areas of India find it easy to use and want to use technology enabled financial services to drive inclusive finance and these services has enhanced their capacity to send money and helped them to save money and to improve profitability.

(N. Jain et al., 2023) they considered behavioural biases driving towards implementation of digital banking services. The main findings included that men exhibit overconfidence than women and women showed more cautious in taking risk when compared to men in the using technology enabled banking services. (Srivastava & Siddiqui, 2023)Examined demographic profiles influencing the adoption of mobile payment fintech apps, they found that income and age influence behavioral intention towards usage of fintech mobile payment services, it can be observed that this study fails to bring gender differences on behavioral intention to use the fintech mobile payments applications and services. (R. Singh & Malik, 2019) examines the impact of digitalization on rural banking customers in India, focusing on payment systems such as BHIM and UPI applications. It highlights the challenges of

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providing affordable services to rural areas due to digital illiteracy and poor internet connectivity.
(Tripathi & Rajeev, 2023) The study found a positive correlation exists between the Gender Development Index (GDI) and Gender Inequality Index (GII) with GFII and digital financial inclusion of the female population (DFIF), These indicate that countries where gender development is high also have financial inclusion of women through digital technology. Their investigation revealed that the primary components affecting women's access to digital financial services include factors like health, Litearacy and engagement at workplace, and political empowerment for females. This study gives importance to factors such as health, education etc. in increasing the empowerment status in women.
(Danladi et al., 2023) the study is concerned with SDGs and financial inclusion's role in attaining the SDGs in Africa. Author's emphasis that Fintech technologies can help to achieve coordination between government and People to foster the economic development with educating the people to use financial products and improving their participation in financial activities using fintech products which may results in achieving the Sustainable Development Goals. (Panakaje et al., 2023) stated importance of digital financial services like mobile banking plays major role in financial inclusion of rural masses. They state that financial literacy plays an important role and is directly connected with the financial inclusion and empowerment of rural individuals. Hence it holds significance to any government to form policies to enhance the financial knowledge among rural people which allows inclusion of the rural people in economic system can help to improve economic conditions and also promote financial services.
(Kumari, 2023) finding of his study shows that there is significant relationship between economic independence and variables such as age, income, occupation and marital status of the women. It concluded that there is positive correlation among these variables along the economic independence of the women. the research of (Caron, 2022) revealed that telecommunication networks play an crucial impact on digital financial services and even though there are disparities in society for women, wealth, education and location plays significant part in influencing women to access the digital financial services
Financial literacy have crucial function in guiding financial decisions, (Ambarkhane et al., 2022) their study contradicts this statement, according to the outcome of the study on the effectives of Prime Minister Jan Dhan Yojana (PMJDY) it was found that the state that showed low financial literacy had better effectiveness of this yojana. As it is a major initiative from the Government of India towards financial inclusion the known disadvantages like illiteracy, low income, and less access could hinder the efficiency of the government schemes.(Kulkarni & Ghosh, 2021) The study identifies challenges such as limited digital literacy, cultural norms, and lack of control over resources that hinder women's access to financial services.
(Pushp et al., 2023) identified the importance of digital financial literacy which can ensure much more use of digital financial services as they highlight that digital inclusion is a crucial variable that can address the drawbacks of financial inclusion and that financial inclusion is a determinant factor for achieving sustainable development goals. (M. A. Jain, 2022) accessed the role of digital financial services on financial inclusion and concluded that convenience, usability, and time factor influence mobile banking and mobile wallets. Low service charge attracts the usage of credit cards and other digital financial services. (Dluhopolskyi et al., 2023) analyzed the effect of COVID-19 on digital financial inclusion it was identified that digital payments were the key element of financial inclusion during COVID-19 in many countries and acceptance of digital payments led to many innovative digital financial services. The pandemic allowed people to access digital services with ease and major growth in digital payments were also noticed post-pandemic.
The critical analysis of the previous studies clearly states the crucial part of studying the influence of digital financial services in different categories of society, financial literacy is also highlighted in some

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studies as major element in determining the role of women in economic activities including their part in using digital financial services. Lack of literature found when it comes to digital financial services impacting rural women in India. Hence this study includes rural women and tries to bring meaningful insights to contribute to the existing knowledge and studies related to digital financial services and its role on rural women by considering variables such as education levels, occupation, confidence level, perception, and economic inclusion.

Methodology

Research Design

The current study uses quantitative research design to study the impact of digital financial services on rural women and the perception of rural women towards digital financial services leading to empowerment. The study focused on women residing in Bengaluru rural district of Karnataka state, to emphasize how digital financial services helped them to achieve financial independence and empowerment in society.

Participants

Convenience sampling technique is adopted to collect responses of the participants, as this method helps to access the participants easily and it practically helps to collect data within the timeframe of the study. There were 274 samples examined for the study out of 280 responses collected.

Data Collection

A structured survey instrument was used to gather the data for the study and the different sections of it aimed at capturing:

a. Demographic details: Questions related to Age, Educational level, marital status, Occupation, and Household income (Monthly) were included.
b. Perception
c. Confidence level of using the Digital financial services
d. Empowerment/ Economic Participation

To get data on Perception, confidence level empowerment, and economic inclusion 5-point Linkert scale statements were used.

To ensure we reached as many women as possible, we offered the survey both in person and online. This approach acknowledged the varying levels of access to technology among our participants, making it easier for everyone to share their experiences and insights.

Data Analysis

SPSS statistical software is used to analyze the data collected. To summarise the data descriptive statistic is used, to find the association between the use of digital financial services and the empowerment of rural women with dependent and independent variables Spearman's rank correlation is calculated along with the independent sample Kruskal-Wallis Test

Variables discussed in the study are educational level and occupation as categorical variables acting as independent variables and confidence level, perception, and economic inclusion as dependent variables

Objectives and hypothesis

The primary objective is to access the influence of digital financial services in empowering rural women. The hypotheses are:

H1: The educational level of the respondent impacts on confidence, perception, and empowerment of

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women toward using digital financial services.
H2: The occupation of the respondent impact on confidence, perception, and empowerment of women towards using digital financial services
By considering the educational level and occupation levels as independent variables and confidence level, perception and economic inclusion as dependent variables the hypothesis tested using a statistical test.

Data and Analysis
Reliability analysis represented in Table 1 indicates the internal consistency and reliability of the data. The 18 items were the statements that describe the Linkert scale statements which are grouped into three variables namely confidence, perception, and economic inclusion of digital financial services toward rural women.

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
.890	18

Cronbach's alpha of 0.890 indicates that the scale is reliable and shows high internal consistency and the items are acceptable as it is generally said that 0.70 Cronbach's alpha is good to accept. Hence the scale is reliable and internally consistent.
Age groups of respondents are shown in table 2, it revealed that out of 274 respondents major age group is between 18-27 which is 43.1% followed by age group 28-37 and 38-47 years. Overall middle age group 35% combing age group of 28-37 and 38-47 years. The least targeted age group is 58 and above aged women followed by women less than 18.

Table 2: Frequency distribution of Age of respondents

Details	Frequency	Percent
Less than 18	19	6.9
18-27	118	43.1
28-37	57	20.8
38-47	39	14.2
48-57	29	10.6
58 and above	12	4.4
Total	274	100.0

The frequency distribution of age of respondents clearly indicates that the respondents are distributed across different age groups, which allows for better analysis of how digital financial services impact different age group. The education level of women is shows in table 3, revealed that majority of rural women have college degree or higher education or at least they have some sought of formal education but 11.3 % of rural women respondents doesn't have formal education.
Higher secondary education with 58 respondents and primary education with 54 respondents are also notable categories. The varied education levels allow for an analysis of how education influences the perception and impact of digital financial services which will give insights into whether empowerment of rural women through digital financial services can be related to the education level of women. Different levels of education help to focus on how it impact on various factors of decision making in women.

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Table 3: Frequency distribution of Education level of the respondents

Details	Frequency	Percent
No formal education	31	11.3
Primary education	54	19.7
Secondary education	45	16.4
Higher secondary education	58	21.2
College degree or higher	86	31.4
Total	274	100.0

The distribution of marital status among the respondents showed in table 4, revealed that the greater part of respondents are married women i.e. 58.4% and followed by single individuals with 37.6%. Widowed and divorced women are less concentrated. The relationship status of women helps to know their social background their position in the family. As each section of this women as their own problems and restrictions in the society to take their decisions and also include themselves in economic activities.

Table 4: Frequency distribution of marital status of the rural women

Details	Frequency	Percent
Single	103	37.6
Married	160	58.4
Widowed	8	2.9
Divorced	3	1.1
Total	274	100.0

Table 5: Frequency distribution of occupation of respondents

Details	Frequency	Percent
Homemaker	43	15.7
Self-employed	70	25.5
Employed	71	25.9
Student	66	24.1
Unemployed	24	8.8
Total	274	100.0

Self-employed individuals represent the largest group, comprising 25.5% of entire sample; Students are of 24.1% indicating the interest on education in young girls. Homemakers form 15.7% showing that they are into household works and taking care of their families. Unemployed individuals represent 8.8% of the respondents are unemployed which shows that they are interested in same jobs. Table 6 shows the primary decision makers in the family. 96 respondents (35%) represent that primary decision making in family is done by their partners. Nearly 29.2% of respondents report that primary decisions are made by other family members and 15.7% of respondents jointly make decisions with the other member. It is revealed that just 20.1% of women are independently taking decision by their own, and others respondents nearly 65% depend on other member of family and partner since they take major primary decisions regarding finances or any other activities.

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Table 6: Frequency distribution of primary decision makers in family of respondents

Details	Frequency	Percent
Myself	55	20.1
Spouse/partner	96	35.0
Jointly with spouse/partner	43	15.7
Other family member(s)	80	29.2
Total	274	100.0

The cross-tabulation provides a clear view of how occupation relates to primary decision-making roles among respondents. Across all occupations, individuals who make financial decisions independently range from 2 (Unemployed) to 25 (Employed). The most common primary decision-maker role is "Spouse/partner," with the highest frequencies observed in the Self-employed (30) and Employed (18) categories. With 70 self-employed and 71 employed women, from the observation it is clear that the primary decision making among themselves are still less which indicated that still women are not primary decision makers even with working status.

Table 7: Cross tabulation of occupation of respondents with primary decision making

		Primary decision maker				
		Myself	Spouse/partner	Jointly with spouse/partner	Other family member(s)	Total
Occupation	Homemaker	9	21	8	5	43
	Self-employed	16	30	12	12	70
	Employed	25	18	12	16	71
	Student	3	17	3	43	66
	Unemployed	2	10	8	4	24
Total		55	96	43	80	274

The data represent that the homemakers with 43 respondents in the study that primary decision making majorly is by their spouse and it is clear that for student community it is evident that decision making is by other family member which is evident that they are not earning to make any decisions.
The frequency distributions clearly depict the socio-economic background of the respondents and it shows that the rural women considered for the study are diverse and it makes easy to access the impact of digital financial services on them which will assist in concluding the status and financial inclusion in rural areas and able to bring policy changes for policy makers.
The descriptive statistics represented in table 8 includes details of basic technological and financial inclusion. The use of mobile phone is major criteria to use the digital financial services, indication from the mean value of 3.1460 clearly shows that the use of mobile is moderate in the rural women, and standard deviation of 1.28125 shows that moderate variability in use of mobile phones.

Table 8: Descriptive Statistics

Details	N	Minimum	Maximum	Mean	Std. Deviation
Use of mobile phone	274	1.00	5.00	3.1460	1.28125
Use of internet	274	1.00	5.00	2.9854	1.32591
Frequency of use of bank account	274	1.00	5.00	3.4730	1.28465
Use of digital services	274	1.00	5.00	2.8029	1.22752

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The use of internet is also the major factor for digital financial services as internet allows to do online transactions, UPI payments and also mobile banking. Use of internet is slightly low with mean value of 2.9854 and standard deviation of 1.32591. This is clearly evident that use of smart phones with internet is very less in rural women. Bank accounts are major determinant for financial inclusion, the mean value of 3.4730 indicates that higher moderate use of bank accounts by rural women. Finally, the use of digital services with a mean value of 2.8029 shows a moderate level compared to the use of mobile phones, the internet, and bank accounts by the rural women.

As a whole, the mean values point to the fact that respondents are moderately focused on the use of mobile phones, the Internet, bank accounts, and digital services. It confirms the technological connection and financial inclusion established as the foundation for the research on the population. The descriptive statistics give a quick overview of the digital and financial inclusion of women in undeveloped areas with data showing both medium usage and such variability in the usage patterns.
The three variables in table 9 results of correlation are the significant because the study tries to comprehend the perception and inclusion of digital financial services in rural women. Knowing the correlation among this variables gives us clear knowledge on the amount of financial inclusion in using digital financial services and how it empowers the rural women, as the confidence matters a lot in trying new technology when it comes to financials and also having clear positive perception towards those technological innovations is also important and finally how this new financial services encouraging them towards economic inclusion or towards empowerment becomes crucial while analysing the impact of digital financial services on rural women.

Table 9: Results of Correlation analysis

		Confidence	Perception	Economic inclusion
Confidence	Correlation Coefficient	1.000		
	Sig. (2-tailed)			
	N	274		
Perception	Correlation Coefficient	.534**	1.000	
	Sig. (2-tailed)	.000		
	N	274	274	
Economic inclusion	Correlation Coefficient	.635**	.758**	1.000
	Sig. (2-tailed)	.000	.000	
	N	274	274	274

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

Table 9 examines the association between three variables confidence level, perception and economic inclusion of rural women towards use of digital financial services. The spearmen's correlation coefficient of 0.534 for confidence and perception together indicate the positive and strong association among two variables. The significance value less than 0.05 proves that it is statically significant and if the confidence level towards digital financial services increases the perception towards the services increases in rural women.
The coefficient value of 0.635 for confidence and economic inclusion indicates the strong association between confidence level in rural women and economic inclusion. Statistical significance is proved with significance level not more than 0.05. which concludes that economic inclusion is achieved or

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increased with the help of increasing the confidence level of rural women towards the digital financial services. The association among perception and economic inclusion is positive and strong with correlation coefficient of 0.758 and significant level less than 0.05, indicates that the strong positive level of perception leads to increase in the economic inclusion and if the level of perception is high economic inclusion is also high in the rural women. These results conclude that the positive strong correlation among the three variables confidence level, perception, and economic inclusion of digital financial services in rural women depicts that the raise in confidence and perception leads to boost in economic inclusion and economic inclusion in the long run leads to empowerment of women in society. The nonparametric independent sample Kruskal-Wallis test was conducted in order to examine the hypothesis of the study, the current research considers two categorical variables education levels and occupation to test other dependent variables confidence level, perception, and economic inclusion. The principal factor to consider education level and occupation is that they are widely distributed and they are most important in individuals when it comes to use of digital financial services or basically dealing with matters of finance as literacy level places crucial role in determining the decision-making capacity in individuals. Even in rural women education levels and their occupation plays important role in their economic conditions and involvement in economic activities.

Table 10: Results of Test of Hypothesis

	Null hypothesis	Test	Significance	Decision
1	The distribution of confidence is the same across the categories of education levels	Independent sample Kruskal-Wallis Test	0.000	Reject null hypothesis
2	The distribution of perception is the same across the categories of education levels	Independent sample Kruskal-Wallis Test	0.216	Retain null hypothesis
3	The distribution of economic inclusion is the same across the categories of education levels	Independent sample Kruskal-Wallis Test	0.000	Reject null hypothesis
4	The distribution of confidence is the same across the categories of occupation	Independent sample Kruskal-Wallis Test	0.000	Reject null hypothesis
5	The distribution of perception is the same across the categories of occupation	Independent sample Kruskal-Wallis Test	0.216	Retain null hypothesis
6	The distribution of economic inclusion is the same across the categories of occupation	Independent sample Kruskal-Wallis Test	0.000	Reject null hypothesis

The significance level is 0.05

Table 10 represents the results of hypothesis tests performed to determine the significant difference between the groups of categorical variables educational levels and occupation of rural women with the independent variables confidence levels, perception, and economic inclusion. The null hypothesis 'the distribution of confidence is the same across the classifications of education levels' is rejected as the

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significance level is less than 0.05 which indicates that the confidence level differs with the level of education, the higher the education the confidence level and it may help them to access to digital services and new technology confidently. The null hypothesis of 'the distribution of perception is the same across the categories of education levels' is retained as the significance level is 0.216 which is more than 0.05 even with different education levels perception towards digital financial services is the same. The perception towards digital financial services is the same in rural women even with different educational backgrounds and it doesn't significantly vary. The null hypothesis of 'the distribution of economic inclusion is the same across the categories of education levels' is rejected with a significance level less than 0.05, implying that the education level brings differences in economic inclusion, financial inclusion, and empowerment can be achieved in rural women by educating them as the outcomes of this research indicates that the economic inclusion varies with the level of education in rural women.

With significance levels of 0.000, the null hypothesis 'the distribution of confidence is the same across the categories of occupation' and the null hypothesis 'the distribution of economic inclusion is the same across the categories of occupation' is rejected as it concludes that the confidence level and economic inclusion varies with different levels of occupation of rural women. The different occupation provides different levels of confidence example, women who are self-employed or employed possess a higher level of confidence in using digital financial services than the women who are homemakers. And economic inclusion is also affected by different levels of occupations. Women in work have regular income and it is easier for them to participate in economic activities or to do transactions easily than women who don't work. The null hypothesis 'the distribution of perception is the same across the categories of occupation' is retained with level of significance of 0.216 which means that occupational role doesn't affect the perception and the perception levels are the same across different occupational roles.

The Independent sample Kruskal-Wallis Test clearly shows that confidence level and economic inclusion are different across different classifications of education and occupation, and perception doesn't change with classifications of education and the occupation. Hence the hypothesis of study is partially supported that there is an impact of educational levels and occupational levels on confidence and economic inclusion where perception doesn't change with the classifications of education levels and occupation in rural women toward digital financial services.

Discussion

The finding of the study clearly indicates that the rural women are into use of digital financial service. The participants in this research are from different socio-economic background displayed with the frequency distributions of various demographic variables. The financial inclusion and digital inclusion are accessed using descriptive statistics revealed that the use of internet, mobile phones, and digital financial services is moderate among the rural women, this indicates that there is scope to increase the inclusion of various services in rural women, Findings from the survey indicated that a large number of women still use the basic mobile phone which don't have internet connections, this gives opportunity to introduce smart phones to rural women. Many women have their bank accounts opened and they don't use them, it was noted that they have given their cards and details to family members who use the accounts instead of these women. The major reason which can be identified out of this behaviour is that they do not have enough opportunities to use these services and also some women lack in knowledge and they fear to use new technologies. This behaviour hinders them in availing the services and lack in economic inclusion.

It was found that primary decisions in family are taken majorly by male members compared to female, even with women who works and earn money on themselves face this issue, this indicate that in women

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doesn't come forward for decision on households and finances in rural area, the primary reason for this could be the lack of encouragement by their families and also by society. This factor also complemented by the relationship status of the women, married women majorly depend on their family, Dependence on parents is common among students, whereas single working women are autonomous in their decision-making. Such demographical factors required proper attention and care so that the societal norms and regulations don't negatively impact on the economic inclusion and empowerment of women. The correlation between the dependent variable's confidence level, perception and economic inclusion shows that there is strong positive relationship among the variables higher level of confidence in rural women towards digital financial services leads to increase in the perception and economic inclusion in them, this can be noted that if the confidence is increased, we can notice the change in perception and economic inclusion. The confidence level is majorly attributed to the knowledge, where the financial knowledge towards use of digital financial services leads boosts confidence which is directly attributed to accelerate the financial inclusion. When it comes to perception level it is the aspect of psychological behaviour of an individual, women living in the rural areas have their own perception towards finance which is impacted by their society, family and values, the confidence level will attribute to increase the positive perception towards the digital financial services. Finally, the overall economic inclusion can be achieved with the help of better confidence level and positive perception towards digital financial services.

The major findings of the research indicates that the digital revolution for women is achieved by the inclusion of digital financial services to the women which is possible when there is quality education and also depends on occupation of the women. It was discovered that education level impacts on the confidence level and also economic inclusion when it comes to digital financial services in women, but perception doesn't change in categories of education level, this highlights the necessity of education in empowering the women. Occupation of women will also impact the women's confidence level and economic inclusion, but across all occupation the perception towards digital financial services is same. It brings importance of education and occupation in shaping the better status for women, so that educated women confidently deal with financial problems and also participate in economic activities than the uneducated women, source of funds and occupation of women also impact on their use of digital financial services brings challenge to make women financially independent.

Education and financial literacy plays essential role in empowering women, is upheld by (Pushp et al., 2023) in their study by highlighting the importance of financial literacy in using digital financial services. (Kumarasamy et al., 2023) their study also complements with the findings, as it is considered that educated women are well-informed and empowered. Women are risk averse when it comes to finances and using financial services which is clearly showed with their use of banking services and digital financial services which is backed by (N. Jain et al., 2023) in their study. The results of this research is complemeneted with the works of (Srivastava & Siddiqui, 2023), (Caron, 2022), and (Kulkarni & Ghosh, 2021).

There are various challenges which are faced by rural women while accessing digital financial services namely, lack of knowledge to use services, technological issues, network issues, and trustworthiness of digital services; and so on these issues are also reducing the impact of digital financial services. This brings importance to build proper infrastructure and financial literacy should be spread across the corners of the country, as the study of (Ketterer, 2019) also highlights that the Challenges that are mainly seen while using digital services are technical issues and also internet issues, so government should address the issue to establish high-quality internet services that connect every corner of the county as it is essential to connect with the rural population and make them technologically enable to use the fintech products and financial services as it will play role in development of nation.

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Policy Implications

The notable influence of occupation and education on the confidence level of rural women specific programs should be held to increase financial literacy technological knowledge and digital skills in women who don't have formal education and also with lower education levels which will uphold their confidence level and empower them towards economic inclusion. Promotional and educational campaigns can be held with help of educational institutions and financial intermediaries to reach rural masses and encourage them to utilise the digital financial services by educating them on using these services and also realizing the advantages of using such services. Policymakers and academicians should collaborate to include financial knowledge and lessons according to the education levels of the individuals. In rural areas, the concentration can be shed on Self-help groups of women and encouraging them to learn new technologies and digital financial services by educating them with skills.

The rural areas should be concentrated by the policymakers, corporations, academicians, financial institutions, and FinTech firms to include them in the digital ecosystems as there is hindrances and lack of knowledge and confidence in them when it comes to using banking services and digital financial services. Government should build robust digital infrastructure in rural areas so that technical issues related to network etc. can be solved and digital financial services can be easily accessed without interruptions.

Conclusion

The study concentrated on the women in Bengaluru Rural District to access the role of digital financial services on empowering them, the outcome of the research help to conclude that women in rural area are moderately using digital financial services and the main factor which is impacting their use of digital financial services are education levels and occupation of women. The education level and occupation directly impact confidence and economic inclusion in rural women residing in the Bengaluru Rural district. Education and financial digital literacy bring confidence which leads to economic inclusion and empowers women in society and the perception of women is uniform even with different levels of education and occupation. Education plays crucial role in inclusive finance and also empowering the women to conduct themselves in economic activities. This research highlights the education disparities and lack of opportunities among rural women which provides insights for developing specific policies and strategies to rural areas concentrating on the women.

Limitations of the study

The study concentrated on only women of Bengaluru rural district which is the main disadvantage in generalising the results, and the sample size of 274 is also minimal when the large population is considered since the study only concentrated on a particular district the sample size can be viewed as limitation of the study.

Suggestions for future studies

Further studies should concentrate on focusing on other districts in Karnataka state as it is most important that this state brings a good combination of rural and urban populations, the studies can also concentrate on other genders which will help to compare the financial inclusion and adoptability towards digital financial services. Other demographic variables such as age, marital status, and income level can also be included for analysing the impact of these variables on the confidence level and perceptions of users. Future researchers can include behavioural implications on the use of digital services and products which will help policymakers and firms to make changes in approach towards different groups of the population.

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