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Understanding the Interplay Between Digital Financial Services and the Life Goals of Rural Individuals

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ABSTRACT

Access to financial services can reduce poverty and stimulate economic opportunities for individuals living in underdeveloped communities. The advancement of information and communication technologies has made financial services more accessible, safer, faster, and affordable through digital financial services (DFS). Existing research has primarily focused on implementing, deploying, and adopting DFS; the goal of this study is different. This research examines how rural individuals in a context characterised by material deprivation use DFS to realise their life goals. The capabilities approach provides the overarching theoretical framework for this investigation. Fieldwork was conducted for three months in India's villages of Uttar Pradesh state. Thirty-two rural individuals and thirteen financial service providers were interviewed about their experiences, views and feelings during a three-month field study in western villages of Uttar Pradesh state in India. An abductive thematic analysis is used to analyse empirical data. Six themes have emerged from the continuing analysis: accomplishing routine life requirements, acquiring financial knowledge, controlling business income loss, planning for future livelihood strategies, helping community members realising financial needs and helping community members in developing financial literacy. Analysis of emerging themes suggests that DFS can be used strategically and altruistically to achieve life goals. These preliminary findings enhance our understanding of the role of DFS in expanding rural individuals' choices. While using DFS strategically, rural individuals can improve their ability to perform routine economic activities, improve decision-making and financial skills, and reduce business income loss; the altruistic use of DFS can develop their capacity to support other community members.

Keywords: Digital financial services, developing countries, rural individuals, life goals

INTRODUCTION

A well-developed financial system allows people to access financial services to facilitate their life requirements (Basu, 2006). Financial services are crucial for stimulating economic opportunities, enhancing incomes, reducing poverty, and building the resilience of marginalised individuals (Bishnoi & Devi, 2017; Pazarbasioglu et al., 2020). However, despite rapid developments in financial technologies, recent statistics show that nearly 1.7 billion people worldwide have no access to essential financial services, and half of these unbanked population live in Bangladesh, China, Indonesia, India, Mexico, Nigeria, and Pakistan (Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2018; Manyika, Lund, Singer, White, & Berry, 2016).

Information and Communications Technologies (ICT) play a critical role in providing access to financial services, especially to isolated and underserved communities (Bishnoi & Devi, 2017; David-West, Iheanachor, & Kelikume, 2018; Rana, Luthra, & Rao, 2019). The ICT-enabled financial technologies are known as digital financial services (DFS). DFS “rely on digital technologies for their delivery and use by consumers” (Pazarbasioglu et al., 2020, p. 1). DFS offer people a range of banking and financial services in a flexible, affordable, and faster manner through various digital channels, including mobile devices, automated teller machines (ATM), and business correspondents (i.e., banking agents) (Bishnoi & Devi, 2017; Rana et al., 2019). Since digital technologies make financial services more efficient than brick-and-mortar delivery platforms, DFS can help bring financial services to people living in less privileged settings (e.g., rural areas) where banking services are not available (Finau, Rika, Samuwai, & McGoon, 2016; Manyika et al., 2016). Moreover, access to DFS can reduce poverty by providing people with opportunities to participate in economic activities (Aker, Boumnijel, McClelland, & Tierney, 2016; Joia & dos Santos, 2019; Wang & He, 2020).

The existing financial technology literature has mainly focused on the adoption and impact of DFS (Della Peruta, 2018; Peprah, Oteng, & Sebu, 2020; Rana et al., 2019). A recent review by Kim, Zoo, Lee, and Kang (2018) also reveals that the concentration of the existing DFS literature is on supply and demand, implementation, and environmental and contextual factors. However, the use of DFS for realising *life goals* has not received much attention in the IS and ICT research domains. Moreover, the research suggests that the use of socio-psychological concept (i.e., life goals in this research) in the ICT4D discipline has been relatively limited (Heeks, 2010; Heeks & Krishna, 2016).

Because this research is concerned with achieving life goals (through DFS), understanding the significance of life goals in human lives is imperative. Life goals can be defined as “the desirable state of being, which individuals can aspire to lead their life” (Promphakping et al., 2021, p. 952). In other words, individuals’ goals describe what they desire to accomplish in life and how (using different means) to achieve them (Hennecke & Brandstätter, 2017). Such life goals may include but are not limited to having ‘good health’ and ‘food’, ‘economic independence’, ‘protective housing’, ‘education’ and ‘awareness’ (McGregor, Camfield, & Woodcock, 2009; Promphakping et al., 2021). Moreover, life goals shape people’s social environment (Fitzsimons & Shah, 2008). Accomplishing life goals can positively influence people’s behaviour and personality (Hudson & Roberts, 2014), their work performance (Lee, Locke, & Latham, 1989), as well as their subjective wellbeing and satisfaction (Hennecke & Brandstätter, 2017). To put it simply, life goals give people a sense of purpose to lead meaningful lives (Brdar, Rijavec, & Miljković, 2009; Klinger, 1977).

ICT can be an enabler and a means of achieving life goals (Michael, Kobran, Abbas, & Hamdoun, 2019). For instance, mobile apps help patients track and pursue their ‘health goals’ and empower them to improve their wellbeing (Martinez et al., 2021). A safe living environment is fundamental for a good quality of life. The use of artificial intelligence is found helpful in reducing violence and ensuring a safer living environment (i.e., achieving protective housing goal) for the residents (Michael et al., 2019). This study focuses on individuals’ DFS use (as means) in achieving life goals in the rural context. Therefore, the overarching research question for this study is: How do rural people use digital financial services to realise their diverse life goals?

RESEARCH CONTEXT

Amongst the developing countries, India has seen a remarkable increase in DFS in the past few years (Demirgüç-Kunt et al., 2018). For instance, according to the Reserve Bank of India (RBI)—the apex banking authority of the country, in 2016-17, nearly 88.9% of banking transactions were performed digitally, and in 2017-18, it reached 92.6% (RBI, 2018). Moreover, the number of registered mobile banking customers increased by 54% (about 251 million) in 2018 compared to 163 million in 2017. There are approximately 640,868 villages in rural India, and there are over 800 million people living in rural areas (Singh & Malik, 2019). The research

further suggests that over 2.5 million rural residents and 55,000 merchants have already gone to digital transactions in India (Singh & Malik, 2019).

Data from the central banking authority of India show that under the country's financial inclusion plan, Indian banks have provided over 49 million electronic smart cards (i.e., debit and credit cards) to perform financial transactions across the rural areas in the country (RBI, 2019). The deployment of nearly 1,30,000 ATMs and roughly 1,78,500 micro-ATMs in 2020 to deliver financial services to unbanked people across rural areas further indicates the positive adoption of DFS in rural regions (RBI, 2021). According to the reports, mobile payment applications offered by third-party payment providers (such as Paytm and PhonePe) also contribute to the increase in rural DFS adoption (Bijapurkar, Rai, Shukla, & Sachdeva, 2020; KPMG, 2019). Given the availability of a wide range of DFS in rural areas, this study examines the role of this broad spectrum (not only mobile financial services) of DFS as a means of realising life goals.

LITERATURE REVIEW

The extant DFS literature has mainly focused on: *supply and demand* (David-West et al., 2018; Santoso & Ahmad, 2016), *adoption* (Adaba & Ayoung, 2017; Peprah et al., 2020; Rana et al., 2019), *impact* (Adaba, Ayoung, & Abbott, 2019; Aker et al., 2016; Rahman, Didarul Alam, & Taghizadeh, 2019; Uduji, Okolo-Obasi, & Asongu, 2019), and *effects* (Kemal, 2019) of DFS, particularly mobile financial services. The role of DFS in achieving life goals has received little attention in the DFS literature, even when achieving life goals is acknowledged as an essential aspect of a person's wellbeing (Gough & McGregor, 2007; Hennecke & Brandstätter, 2017).

The extant literature highlights the diverse role that DFS play in the lives of people and communities in different parts of the world. For instance, the mobile-money agents from the deprived section of society in Bangladesh have used mobile financial services (MFS) to improve their subjective wellbeing. The adoption of MFS by these micro-entrepreneurs has raised their income, which further influenced their families' happiness and satisfaction (Rahman et al. (2019). The findings of this research suggest the positive role of DFS in the lives of micro-business stakeholders. Another study on Ghanaian demonstrates that mobile money use offered farmers safe and convenient schemes for money savings and credits for their farming activities. These farmers utilised their savings and digital credit facility to purchase fertilisers and pesticides and hire labour to work on their farms for better output (Peprah et al., 2020). This

study indicates that DFS may benefit marginalised communities (e.g., farmers) by enabling them to accumulate savings and improve their agricultural productivity.

A recent study shows that DFS acceptance and use by small-scale Nigerian farmers have improved their farming inputs in terms of better-quality seeds, fertilisers, and crop protection products, which resulted in enhanced farm entrepreneurship in rural Nigeria (Uduji et al., 2019). In a similar vein, another study, from the capability approach perspective, emphasises available opportunities for DFS (Adaba et al., 2019). This recent study suggests that DFS enables under-banked people to save money and provides freedom and agency to enhance their economic conditions. For instance, farmers' use of DFS to buy seeds and fertiliser for their crops during the rainy season has enabled them to secure income and food for their families. The results further confirm that DFS use allows people to access microcredit to support their businesses by remotely paying suppliers, which further helps their business grow.

The extant literature also recognised the positive association between the intervention of the DFS initiative (i.e., mobile money transfer) and women's empowerment. DFS use by marginalised Niger women has positively affected their position in making household decisions related to expenditures and food security. DFS use has shaped women's financial activities (e.g., saving and spending) and livelihood strategies, such as consuming higher protein and energy food for family members (Aker et al., 2016). These results imply that DFS use has strengthened women's decision-making regarding household expenditures and food security. While past studies point toward the potential of DFS in improving people's lives, there has not been much focus on the role of DFS in facilitating individuals to achieve their life goals.

THEORETICAL BACKGROUND

This study views DFS as a means to capacitate people to achieve their diverse life goals. This view is also consistent with Michael et al. (2019). Michael and her colleagues acknowledge the role of ICT as an enabler that provides people with the power to communicate and act efficiently, which can also be used for achieving different life goals. Given ICT as a means to achieve life goals, this study draws upon the capability approach—CA (Sen, 1993, 1999). The CA framework emphasises the availability of capabilities for individuals to achieve their valuable states of being and doing. This study views the availability of DFS as a means (capabilities) that can enable rural individuals to act efficiently (Michael et al., 2019) to achieve their life goals (Kivunike, Ekenberg, Danielson, & Tusubira, 2011; Sen, 1993).

Vital elements of CA include *capabilities* and *functionings*. The functionings are the valuable states or goals the individual may value to accomplish for their wellbeing, such as being well-nourished, being healthy, being housed, participating in social activities, and so on. On the other hand, capabilities represent the opportunities or means individuals can use to translate those means to achieve their valuable functionings. Sen (1999) describes these capabilities in the context of social arrangements, political liberties, a guarantee of transparency, protective security, and economic opportunities.

However, while the CA can provide a framework to understand the role of DFS as capabilities to achieve life goals, it does not offer a clear view on goals, states or doings that an individual may value to be achieved to have a meaningful life. For more clarity, this study takes ideas from the socio-psychological views on life goals. Social psychology classifies life goals as *extrinsic* and *intrinsic* (Schmuck, Kasser, & Ryan, 2000; Schmuck & Sheldon, 2001). Extrinsic life goals refer to the material resources an individual has to live a good life, such as food, health, assets, amenities, employment, essential services, natural environment, peace, and so on (Schmuck & Sheldon, 2001). Achieving extrinsic life goals is considered part of life and happiness (Brdar et al., 2009). *Intrinsic* life goals refer to innately satisfying goals, such as emotional intimacy with others. Attaining intrinsic life goals displays individuals' autonomy, competence, relatedness, and growth (Schmuck & Sheldon, 2001). Extrinsic and intrinsic goals affect individuals' wellbeing. Individuals who focus on achieving intrinsic life goals have higher levels of happiness, satisfaction, self-actualisation, and confidence (Kasser, Ryan, Couchman, & Sheldon, 2004; Schmuck et al., 2000). The study, therefore, draws upon the concepts mentioned above as the starting point to abductively investigate the role of DFS (as a means) in the lives of rural individuals for achieving their diverse life goals.

RESEARCH METHODS

This section presents the details of the target research site, participants and data collection process, followed by the thematic data analysis employed in this doctoral research.

Research site

The research sites for this doctoral study are the rural areas of Uttar Pradesh state in India. Nearly 80% of the state's population lives in rural areas, which accounts for almost 20% of the total rural population of the country (MOSPI, 2017). The choice of the rural areas of Uttar Pradesh state are based on two reasons. First, the recent trends in banking indicate the

progressive adoption of DFS in rural areas of this state (RBI, 2018; Singh & Malik, 2019). This trend implies that individuals living in the villages of this state are familiar with DFS and are appropriate participants to provide a deeper understanding of the role DFS plays in their lives. Second, the author (primary researcher of this ongoing PhD study) has a similar cultural and ethnic background, which gives a smooth entry to the villages of the Uttar Pradesh state for data collection while staying close to the research participants (Creswell & Creswell, 2017; Creswell & Poth, 2017). In this study, the data was collected from *seven* villages in *two* different districts of Uttar Pradesh state.

Participant background

The participants of this research are *rural individuals* and *financial service providers* (i.e., rural bank officials and business correspondents) delivering financial services in rural areas. Rural individuals are categorised based on their occupations: farmer, full-time employee, small entrepreneur, multiple occupations, part-time employee, retired (pensioner), and unemployed. Appendix 1 indicates the number of participants by their occupation and village. A snowball sampling technique was adopted to identify potential research participants. The researcher first approached his acquaintance who has access to the village and can help the researcher meet some rural individuals—who are familiar with DFS or have DFS usage experience. These rural individuals were further asked to pass on the information about this study (through the participant information sheet) to other individuals who could be appropriate participants for this study (Williamson & Johanson, 2017). The final selection of research participants was based on their awareness of DFS, usage experience, and willingness to participate in this study.

Data collection

This research adopts semi-structured and unstructured interview techniques to interview 32 rural individuals and 13 DFS providers for the duration of three-month fieldwork (from September 2021 to November 2021). Semi-structured interviews incorporated indicative open-ended questions allowing both the interviewer (author) and the interviewee (participants) to have a guided conversation about the research context. Unstructured interviews, on the other hand, allowed participants to discuss their financial practices in-depth without being reluctant. This well-aligned blended interviewing approach provided the opportunity to collect participants' real-life experiences, practices, feelings, and motivations around the research phenomenon (Creswell & Creswell, 2017).

The interviews ranged from 25 minutes to 90 minutes, depending on participants' interest in sharing their experiences and the depth of information offered. All interview sessions were voice-recorded at different locations, such as the participant's house, shop, and friend's or relative's house, considering the participant's convenience. In some interviews, the participant's family, relatives and friends were also present. These members also expressed their views about DFS. Six of thirty-two rural participants were contacted again to provide more details on their previous interview responses.

Data analysis

This research adopts an abductive thematic analysis approach to identify emerging themes to generate a new conceptual understanding of the research phenomenon: DFS for achieving life goals. Using abductive analysis, we acquire new theoretical insights while holding pre-understandings of the research context, such as DFS themes and codes identified from the past research (Timmermans & Tavory, 2012). In this study, pre-understanding of relevant research is referred to as *a priori* information. This *a priori* information document is generated from the DFS literature review conducted during the development of the research proposal for this PhD project. This document is utilised as a starting feed for thematically analysing the new empirical data to generate new categories and themes for addressing the overarching research question (Braun & Clarke, 2006). Appendix 2 contains themes and codes that emerged during the literature review phase.

The abductive thematic analysis began by translating and transcribing audio-recorded interviews (in the local language—Hindi) into text documents (in English). These documents are then uploaded on NVivo software for the coding process. The next step commenced by performing initial rounds of coding participants' transcripts. At this stage of analysis, each interview transcript was read thoroughly and labelled transcript data into chunks of codes without considering any existing concept or theory. This stage also involved refining codes by combining and splitting them based on similarities and differences in their meanings. Codes found irrelevant (in the context of the overarching research question) were dropped into a code heading 'Miscellaneous'. The next stage of analysis involved the identification of patterns and concepts in the existing chunks of codes and organising them into sub-and main categories. Guiding thematic analysis through existing concepts (i.e., *a priori* information) is a crucial component of abductive thematic analysis, making it different from deductive and grounded theory (inductive)

analysis methods (Thompson, 2022). Therefore, existing knowledge (i.e., a priori information) was also considered back and forth at this stage. It is important to note that a priori information was used to ‘guide’ the thematic process and not to ‘restrict’ the development of categories and potential themes. Considering existing concepts assisted the author in seeing any possible relationship between emerging themes and existing knowledge (Timmermans & Tavory, 2012). Appendix 3 illustrates the abductive thematic process steps adopted in this study. Detailed extracts of focused codes and their respective categories and themes are presented in Appendix 4. It is important to mention that the current themes are not considered the final themes because further abstraction is being done to refine the existing categories.

RESEARCH FINDINGS

Abductive thematic analysis revealed six themes. These six themes are: accomplishing routine life requirements, acquiring financial knowledge, controlling financial loss, planning for future livelihood strategies, helping community members realise financial needs, and developing financial literacy among community members. Each theme is explained in the following section.

Accomplishing routine life requirements

The participants of this research reveal that using DFS enable them to manage their recurring life requirements, such as buying groceries, recharging mobile plans, transferring money, and paying utility bills and tuition fees. One research participant, who works as a full-time employee in a city, revealed the importance of DFS use for depositing the electricity bill of his home in the village remotely. The research participant further described his job constraints and how he utilises digital payment services to balance his work responsibilities and family commitments.

I use an online payment app even for paying my electricity bill... See, I have various things to do at work... my manager may not like it if I take leave to deposit the electricity bill for my home in the village... It is senseless to take a leave and travel to my village on a weekday only to deposit the bill... I instead do it [bill payment] online and better spend that time preparing my lectures. (Pradeep)

Another participant expressed the significance of a digital payment app for his routine activities. In his description, he perceived a digital banking app as a vital means that enables him to keep his mobile phone pack working so that he can browse the internet, keep track of his finances, and do financial transactions smoothly:

I use it [online banking app] to recharge my mobile pack... You know how important is a mobile phone these days... So I make sure that my mobile data pack is active so that I can access the internet... Check my bank account and transfer money. (Krishna)

Similar to Pradeep's and Krishna's, other participants have also perceived the role of DFS in realising their routine life activities—for example, paying online for groceries and vegetables from the market and purchasing high-quality sports accessories online to achieve daily practice targets.

Acquiring financial knowledge

It was surprising that rural individuals perceived the use of DFS as a helpful tool to acquire financial literacy in terms of getting wide-ranging financial information about, for example, investment schemes, loans and interest rates, cyber frauds, and ways to protect money from cyber scammers. Research participants revealed that they receive regular text messages and website links on their mobile numbers (i.e., registered with their banking institution). For instance, one participant (a farmer by profession) revealed his discontent with the working practices of the rural banks. He described that there is no in-person financial awareness program conducted by the rural banks in his village. However, he further expressed the role of DFS in acquiring financial knowledge by frequent informational messages from the bank on his registered mobile number. He also perceives DFS-mediated information as helpful in learning different financial products:

Bank employees have no time to come to the village and spread awareness about banking products and services, but I receive messages on my registered mobile from my bank on a regular basis... They [messages] are about [agricultural] loans, fixed deposit schemes, interest rates, online scams, etc... I find them helpful in the sense that through these messages, I learn about updates on [agricultural] loan schemes. (Lakshman)

Another participant expressed the importance of financial awareness for protecting confidential information and money from cyber thieves and the facilitating role of DFS in upgrading financial skills through digital messages on mobile phone:

Awareness is very important for every DFS user... Already there are so many cyber frauds happening these days... if we are not aware about these frauds, then we can lose

our information and money... I carefully read all the text messages and alerts that I receive from the banking app... enhancing my awareness... like I know how to protect my confidential information from hackers. (Pallavi)

Controlling business-income loss

In-depth conversations with research participants reveal another aspect of DFS, particularly for small-scale and individually owned businesses in the village. Some small-scale entrepreneurs perceived DFS as a critical means of controlling their loss in business income. They described that receiving payments from customers has become simpler after the intervention of digital payments. For example, one of the participants, who runs a small vehicle pollution checking centre at the petrol pump near his village, shared a striking story of his struggle to hold on to his customers. He said he used to lose several customers who left without service due to cash shortages. Although he used to keep some change of currency (small currency notes) at the counter, it was not enough to meet his requirements. The lack of small currency notes eventually affected his business revenue:

My customers used to return without taking my services... I was also unable to provide the change of large currency notes offered by the customers... I used to keep some change [of currency] at my counter, but it was not enough for all the customers... You know that small currency notes are not easily available... which caused me a hard time sustaining my business income... this problem had a major impact on my daily sales... then I got the digital payment barcode for my service centre... If they do not have cash, then they pay digitally... digital payment option has increased my sales and reduced my stress of keeping small currency notes. (Lalit)

Another participant, who runs a small general store near his village, reported that digital payments help him reduce his business loss. He described that one of the reasons for this income loss is due to the prevalence of credit-shopping culture among rural people. He often deals with customers who expect to buy items without making the full payment or paying a partial amount of the total bill. Initially, he maintained a credit register for recording details of these customers, but it was not helpful to recover his income loss as some customers never returned to pay his money. However, the use of digital payment facility enabled him to better deal with such customers and control the credit-shopping.

Every day I deal with customers who buy items from my shop but do not pay the full amount... sometimes they do not pay anything... They make excuses like “sorry, I forgot to bring money” or “I don’t have enough money, but I will pay in 1 or 2 days” ... Initially, for these types of customers, I used to maintain a credit book to record customer name and transaction amount... it was not a useful approach... some customers have never come back to my shop that affects my income... Now I offer digital payment options to customers to avoid credit situations. (Vairaj)

Planning for future livelihood strategies

Developing a future income plan is vital for individuals to sustain with economic shocks and meet their basic needs (Walker 2001). Livelihood strategies and related decisions are based on opportunities to access and utilise essential resources, for example, financial services (Pazarbasioglu et al., 2020; Walker, 2001).

Research findings reveals that DFS use has enabled rural individuals to plan for their business-related strategies. The following extract from an interview with a small retailer explains how DFS helped him to accumulate savings by reducing his undue expenses and how that digitally accumulated savings enabled him to plan and decide on increasing product variety and quantity for his business:

Receiving digital payments from customers goes directly into my bank account instead of in my hands... my unnecessary expenses are also reduced... I invested those additional savings in buying more items for my shop... previously, I used to sell a few items and keep a small quantity. (Kulveer)

The intervention of digital technology has enabled farmers to receive their crop payment directly into their bank accounts instead of getting it through agents. Another research participant, whose livelihood depends on agriculture activities, explains the role of electronic money transfer in the timely payment of the sold crop and for planning future produce. He exemplifies that digital technology has now enabled him to receive crop payments directly in his bank account within 15 days of selling crops in the market. This digital transfer facility ensures the availability of funds in his bank account, which further enables him to plan and decide on acquiring essential farming

components (e.g., seeds and fertilisers) for his next crop—on which his future livelihood depends:

I get my agricultural payment directly into my bank account within 2 weeks after selling the crops in the market... Direct crop payment transfer is a big relief... See, for farmers, time and money play an important role in crop production... Planning for my next crop largely depends on the availability of funds... Delay in crop payment means a delay in the procurement of seeds and fertilisers... Direct transfer facility helps me ensure the money's availability in my account and allows me to plan for the procurement process.
(Madhav)

While the themes mentioned above represent DFS as a means to achieve rural individuals' self-serving life goals, the following two themes suggest DFS use for purposes of helping other rural individuals.

Helping community members realise financial needs

The detailed discussions with research participants revealed the exciting aspect of DFS in the lives of rural individuals. Analysis revealed that DFS is used as a tool to help others in need. However, these needs may or may not be related to money. Bhuvan revealed the role of DFS in helping his relatives and friends by transferring money from his digital payment app: "If my relatives or friends need financial help, I immediately transfer money to their bank account through my banking app." The findings further revealed that such helping acts are reciprocal. For instance, Bhuvan further mentioned that his family and friends provide him with support (financial) when he needs it: "In case I need money, I ask my friends or relatives, and they instantly transfer money into my digital wallet."

Similar to Bhuvan, another participant confirms the role of DFS in helping others. In the following extract, the participant shared his experience activating his neighbour's mobile plan using his digital payment mobile app. He mentioned that doing such types of favours for others is a common practice in his village:

I remember once my neighbour [non-DFS user] came to me during the night time... His mobile voice pack was expired... I used my mobile app to recharge his mobile plan... it was not a big deal for me... people do such favours here. (Rajiv)

Helping community members in developing financial literacy

Financial literacy refers to an individual's ability to make financial decisions, participate in economic activities (Kumar & Pathak, 2022), and reduce poverty (Chibba, 2009). Developing financial literacy involves awareness of various financial products and services, features, and skills to use appropriately.

The thematic analysis shows that rural individuals are willingly involved in knowledge-sharing activities in their social circle. Findings revealed that rural individuals are sharing their financial knowledge and experiences to educate other community members, for example, about digital banking app features, financial products and schemes and cyber fraud alerts. Research participant (Tilak) shared an online loan feature of his mobile banking app (that he already used to meet his loan requirement) with his friends: "I took a personal loan through my mobile banking application... I find it very useful... I also told my friends about this online loan feature of the digital banking app."

During the discussion, the interviewer (author) asked Tilak about his motive behind sharing DFS experience with others. Tilak ascribes that he intended to help his friends so that they could also use online loan feature in the future:

Interviewer (author): Why did you share this digital loan feature with your friends?

Research participant (Tilak): I thought my experience would help them if they want to apply for a loan in the future.

Research findings also reveal that the information-sharing pattern occurs not only between DFS users but also between DFS users and non-DFS users. DFS users share financial knowledge with other members of their community, for example, with old-aged people who they believe are less exposed and updated with financial knowledge. These findings further suggest that the motive of these individuals (DFS users) behind sharing their financial knowledge is to educate their community members about digital banking app features, financial products and schemes and alert them about cyber frauds. The following interview extract revealed rural individuals' act of sharing financial experiences and knowledge with community members:

I receive messages on my mobile phone from the bank... about new schemes... how to deal with fraud calls... I also share such information with others in my village... See,

people in my village... old-aged people are not aware of financial products and schemes... this information can help them... like choosing the right type of loan or investment scheme... money from scammers. (Deepam)

The six themes from the ongoing analysis revealed how rural individuals use DFS to realise their diverse life goals. The analysis of emerging themes further suggests the strategic and altruistic use of DFS for achieving life goals. While the first four themes exemplify the *strategic* use of DFS in realising life goals that rural individuals may value for their wellbeing and development, the last two themes reflect the *altruistic* use of DFS for the welfare and growth of community members (Batson, 1990; Batson, Ahmad, & Tsang, 2002; Batson, Van Lange, Ahmad, & Lishner, 2007). These preliminary findings enhance our understanding of the role of DFS in expanding rural individuals' choices. By strategically utilising DFS, rural individuals can better perform their routine economic activities, improve decision-making and financial skills, reduce business-income loss, and develop their capacity to support other community members through the altruistic use of DFS.

CONCLUSION

In this study, 32 rural individuals were interviewed in their actual living settings. All interviews were analysed using an abductive thematic approach. The ongoing analysis reveals six themes focusing on the role of DFS in the lives of rural individuals. These six themes are further analysed and grouped into two categories of life goals: strategic and altruistic life goals. Strategic life goals include four themes: accomplishing everyday life requirements, acquiring financial knowledge, controlling business income loss, and planning for future livelihood strategies. Altruistic life goals have two themes: helping community members realising financial needs and helping community members in developing financial literacy. While strategic life goals reveal the use of DFS for people's personal wellbeing and growth, altruistic life goals emphasise others' welfare and development.

The current findings of this study contribute to a theoretical insight to understand the role of existing capabilities (e.g., DFS as means) available to the people living in material deprivation and their use of DFS for realising their life goals as well as supporting others in their social network.

As a practical application, this study will provide insights for existing and potential stakeholders to oversee DFS awareness and implementation of developmental initiatives that strengthen the use of DFS among rural communities. Moreover, develop programmes that encourage existing DFS users to help their community members.

As this study is still in progress, further abstractions of empirical data are required to produce more meaningful themes. However, the preliminary findings presented in the previous sections provide a solid foundation for understanding the strategic and altruistic role of DFS (as means) for achieving life goals.

APPENDIX 1. Participant information grouped by occupation and village

Occupation of rural individuals	Villages by districts						
	District A				District B		
	Village A1	Village A2	Village A3	Village A4	Village B1	Village B2	Village B3
Farmer	1	2		1	1		1
Full-time employee		3			1	3	1
Small entrepreneur	2	1		1	1	1	
Multiple occupation	1		2	1		1	1
Part-time employee					1		1
Retired (pensioner)				1			1
Unemployed				2			
Occupation of DFS service providers	Working in villages of district A				Working in villages of district B		
Rural bank employee	4				3		
Business correspondent	3				3		

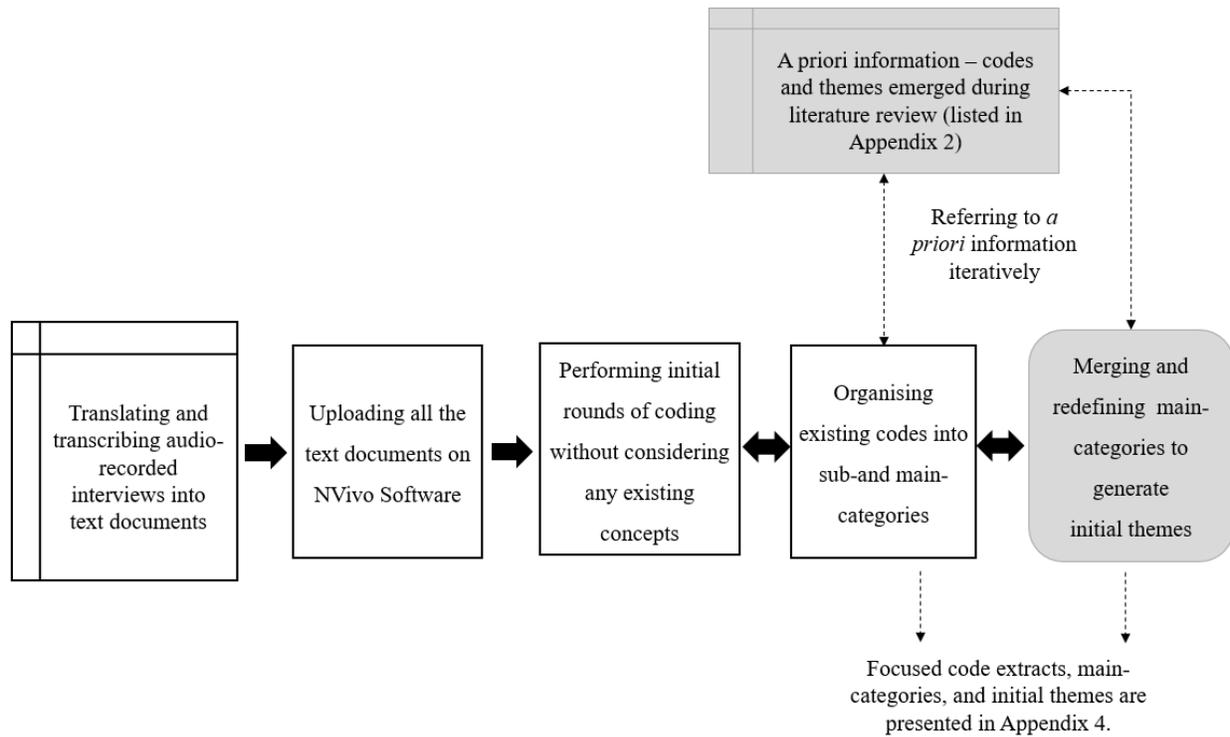
APPENDIX 2. Themes and codes emerged during the literature review phase

Themes	Relevant codes/ source
Energisers to DFS use	<ul style="list-style-type: none"> • Previous knowledge/ (Dziwornu, Anagba, & Aniapam, 2018) • Privacy of information/ (Dziwornu et al., 2018) • Trust in DFS affects customers’ inclination/ (Mukherjee & Nath, 2003) • Trust facilitate the use DFS/ (Pal, Herath, De’, & Rao, 2020) • Low transaction costs/ (Ouma, Odongo, & Were, 2017) • Digital payments for public transport, utilities and services/ (Pazarbasioglu et al., 2020) • DFS is being used for a wide range of payments (e.g., food, travel, wages, fees, shopping)/ (Oborn, Barrett, Orlikowski, & Kim, 2019) • Ability to afford DFS devices stimulate DFS use/ (Adaba et al., 2019) • Trust in mobile technology energises DFS use/ (Adaba et al., 2019) • Trust factor facilitate the use of DFS/ (Pal et al., 2020) • Facilitating conditions, social influence, increase productivity/ (Rahman et al., 2019)
Barriers to DFS use	<ul style="list-style-type: none"> • Illiteracy and inability to read the DFS instructions/ (Agwu, 2021) • Negative stories about hacking influences people’s DFS use/ (Agwu, 2021) • Perceived risk hampers DFS use/ (Pal et al., 2020) • Mutual relationship between customers and business owners reduces DFS use/ (Donner & Tellez, 2008) • Lack of technological knowledge/ (Ibtasam et al., 2017) • Inability to discern fraudulent act/ (Ibtasam et al., 2017)

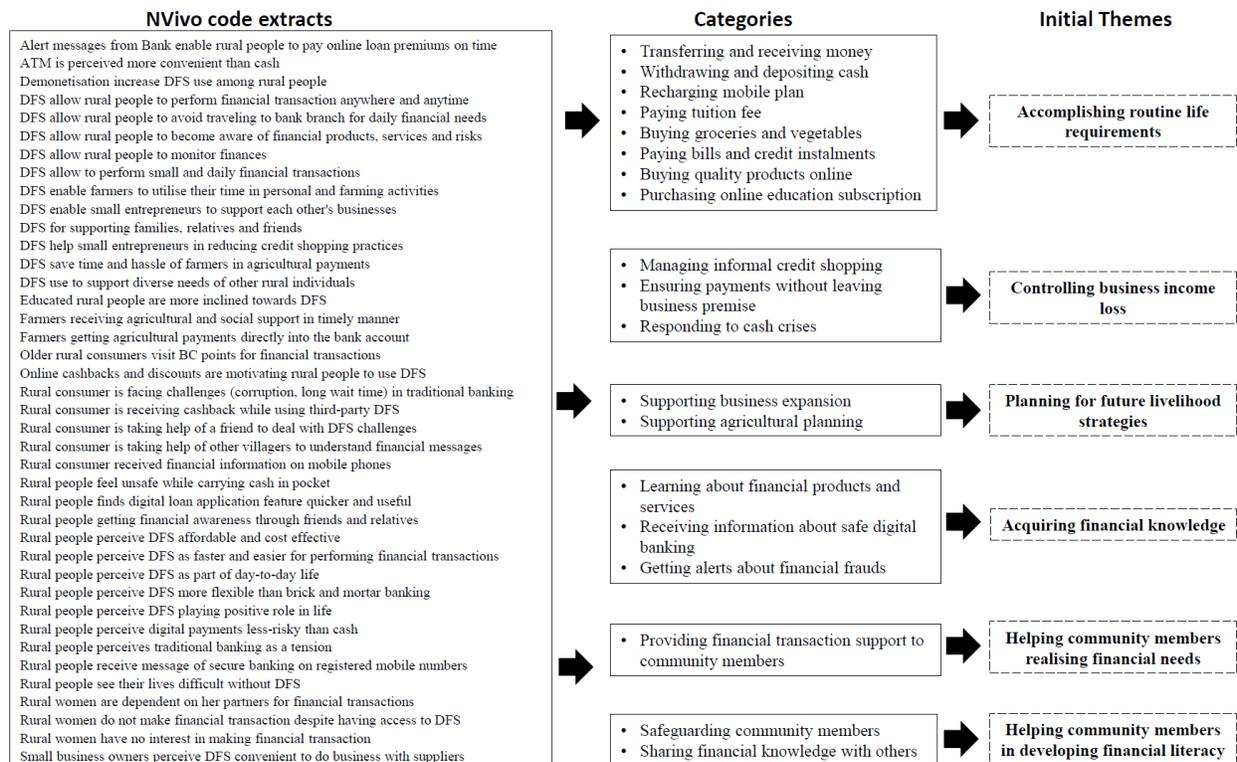
	<ul style="list-style-type: none"> • Work without payment receipts (i.e. informal employment) and a preference for cash reduce the inclination to use mobile banking/(De Koker & Jentzsch, 2013) • Use of DFS raise socio-economic inequalities among agents and between agents and tellers/ (Peša, 2018) • Social norms, religious and gendered dynamics affect DFS in women/ (Ibtasam et al., 2018)
Trust in DFS	<ul style="list-style-type: none"> • Security and privacy influences trust in DFS/ (Mukherjee & Nath, 2003)
DFS as transformational technology	<ul style="list-style-type: none"> • Mobile money has become a vital tool for the cultivation of livelihood strategies/ (Morawczynski, 2009) • Mobile money helps rural users to mitigate their risk and diversify their resources/ (Morawczynski, 2009) • Mobile financial services as a means for earning the livelihood/ (Rahman et al., 2019)
DFS for improved spending behaviour	<ul style="list-style-type: none"> • DFS modifies household consumption behaviour for the better (e.g. households bought more types of food items and increased their diet diversity)/ (Aker et al., 2016) • DFS prompts people save conveniently from their homes or the vicinity of their business sites/ (Ouma et al., 2017) • Mobile money remittance flow and reduced service improve the saving behaviour of rural households/ (Munyegera & Matsumoto, 2018)
DFS support financial inclusion and human wellbeing	<ul style="list-style-type: none"> • Floating bank to contribute to financial inclusion/ (Joia & dos Santos, 2019) • DFS reduces farmers' vulnerability/ (Wang & He, 2020) • DFS (e.g., mobile financial services) ensure the subjective well-being/ (Rahman et al., 2019)
DFS support business transactions and growth	<ul style="list-style-type: none"> • M-money adoption allowed small-scale and individual entrepreneurs carrying out their business transactions/

	<p>(Amegbe, Hanu, & Nuwasiima, 2017)</p> <ul style="list-style-type: none"> • Business owners found M-money as an enabler to their business growth (i.e. increased sales and profit)/ (Amegbe et al., 2017) • Mobile money drives SMEs investment in fixed assets/ (Islam, Muzi, & Meza, 2018) • Tracking of business sales become easy with DFS/ (Pazarbasioglu et al., 2020)
DFS support business formalisation	<ul style="list-style-type: none"> • Digital payments enable businesses to pay taxes in easier ways/ (Pazarbasioglu et al., 2020) • The use of digital payroll technology facilitates the formalization of labour agreements/ (Pazarbasioglu et al., 2020)
DFS to fulfil immediate needs	<ul style="list-style-type: none"> • DFS meeting people’s needs (e.g. medical needs, contribution in funerals etc.)/ (Van Hove & Dubus, 2019)
Corresponding agents’ practices	<ul style="list-style-type: none"> • Corresponding agents going above and beyond their prescribed duties to build up customer base and help customers to perform necessary financial activities/ (Ghosh, 2013) • Agents’ work practices (i.e. use their personal mobile numbers or keep customer’s money without providing receipts) to entertain customer’s transaction requests sometimes lead to frauds by some agents/ (Ghosh, 2013)
DFS reduce corruption	<ul style="list-style-type: none"> • DFS enables beneficiaries to receive social benefits directly into their bank accounts/ (Pazarbasioglu et al., 2020)

APPENDIX 3. Abductive thematic process for the development of initial codes, sub-and main-categories and initial themes



APPENDIX 4. Code extracts, categories and initial themes



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