Digital Financial Services: Unveiling the Collective Potential in Rural Landscape of India

Himanshu Sharma

2024

Department of Business Information Systems

Faculty of Business, Economics and Law

A thesis submitted to

Auckland University of Technology

in fulfilment of the requirements for the degree of

Doctor of Philosophy (PhD)

Supervisors

Professor Antonio Díaz Andrade

Dr Ranjan Vaidya

Abstract

Access to financial services not only has the potential to ignite economic prospects but also supports human development. The progress of information and communication technologies (ICTs) has significantly improved the accessibility, security, speed, and affordability of financial services, all thanks to the advent of ICTs. Prior research has predominantly centred on the implementation, deployment, and adoption of digital financial services (DFS), but the aim of this study diverges from this established focus. This qualitative and interpretive research examines how individuals in rural areas leverage DFS to achieve life goals.

The research fieldwork of this study focuses on rural areas in the Uttar Pradesh (UP) state of India. Data collection using ethnographic techniques is conducted in seven villages within two districts of UP state: Gautam Buddha Nagar (GBN) and Bulandshahr (BS). The sample comprises thirty-six interviews, serving as the data set for the thematic analysis guided by an inductive-abductive reasoning approach. This blended method is embraced to identify core themes and extract novel insights into the role of DFS's contribution to people's lives.

The thematic analysis revealed three core themes. The first two themes of this study contribute to existing knowledge about the instrumental role of DFS in expanding an individual's economic opportunities and financial literacy. The third theme challenges the conventional DFS perspective. It emphasises the DFS's potential to cultivate a pro-social environment where individuals share DFS resources, such as knowledge, skills, and applications.

The mapping of core themes with extant theories unveils a conceptual DFS use continuum, symbolising two interrelated poles: the personal use of DFS and the collective use of DFS. Theoretical insights indicate that DFS can facilitate the development of a collaborative support system through the involvement of active DFS users in the closely-knit fabric of social networks.

This study has practical implications, particularly for banking institutions to understand the social capital dynamics, identify active DFS users within communities across their

operational zones, and offer them specialised training programmes to strengthen the DFS ecosystem.

Keywords: *Information and communication technology (ICT), digital financial services (DFS), capabilities, social capital, collective usage, developing countries, rural communities*

I dedicate this thesis to the memory of my beloved father –

Shri Deo Sharma

(10th July 1945 – 21st April 2021)

Contents

Abstract i
List of Figures vii
List of Tables ix
List of Appendices x
Attestation of Authorship xi
Acknowledgements xii
Ethics Approval xiv
Chapter 1 Introduction 1
1.1 Chapter outline 1
1.2 Introduction and background 1
1.3 The significance of financial services 2
1.3.1 ICT-enabled financial services 3
1.4 Research problem 4
1.5 Chapter conclusion and thesis structure 7
Chapter 2 Origins to Theories: Navigating Extant Research 10
2.1 Chapter outline 10
2.2 Development perspectives 10
2.3 ICT and development 14
2.4 Overview of DFS 17
2.5 DFS evolution trajectory 19
2.5.1 DFS terminologies, channels, and transactions 23
2.6 Past accounts of DFS research 26
2.6.1 DFS dimensions 26
2.7 Theoretical perspectives 35
2.7.1 The capability approach 37
2.7.2 Social capital 41
2.8 Chapter conclusion 49
Chapter 3 Research Methodology 50
3.1 Chapter outline 50
3.2 Introduction 50
3.2.1 Philosophical perspective 50
3.3 Research design 52
3.3.1 Data collection process 53
3.4 Data analysis and theorising method 68
3.4.1 Inductive-abductive thematic analysis stages 70
3.5 Chapter conclusion 78

Chapter 4 Research Context 79
4.1 Chapter outline 79
4.2 An overview of cultural perspectives on money among Indians 79
4.3 Financial services system in India 80
4.4 Digital FI across India 81
4.4.1 Access to mobile DFS channels 84
4.4.2 BC model to enhance FI 85
4.4.3 Offline access to DFS 86
4.5 UP at a glance: historical, cultural, and socio-economic accounts 87
4.5.1 Financial services in UP 90
4.6 Unveiling the contextual insights of seven rural communities 91
4.6.1 The beginning of my fieldwork 91
4.7 Cultural practices within these rural communities 112
4.7.1 Dissemination of information within the villages 114
4.7.2 Resource-sharing practice within these rural communities 115
4.7.3 Urban influence on cultural practices of these rural enclaves 116
4.8 Formal education, financial knowledge, and digital skills 117
4.9 Preference for DFS channels 119
4.10 DFS challenges 120
4.10.1 Limited awareness of DFS 120
4.10.2 Irregular income 121
4.10.3 Cyber threat concerns 123
4.10.4 Gender-based finance practices 124
4.11 Insights into rural branch banking 126
4.12 Chapter conclusion 127
Chapter 5 Thematic Kaleidoscope 128
5.1 Chapter outline 128
5.2 Theme 1: DFS for enhancing economic freedoms 128
5.2.1 Category: Accessing daily life resources 129
5.2.2 Category: Managing financial obligations 133
5.2.3 Category: Improving income prospects 139
5.3 Theme 2: DFS for expanding financial literacy 150
5.3.1 Category: Comprehending financial products and services 151
5.3.2 Category: Developing safe DFS practices 154
5.4 Theme 3: DFS for supporting and empowering others 161
5.4.1 Category: Developing DFS awareness and know-how in others 162
5.4.2 Category: Empowering others with DFS applications 170
5.5 Chapter conclusion 175
Chapter 6 Discussion 176
6.1 Chapter outline 176
6.2 DFS for enhancing economic freedoms 176

6.3 DFS for expanding financial literacy 179
6.4 DFS for supporting and empowering others 182
6.5 DFS-use continuum 186
6.5.1 Personal use of DFS 188
6.5.2 Collective use of DFS 189
6.6 Chapter conclusion 192
Chapter 7 Conclusions 194
7.1 Chapter outline 194
7.2 Overview of research background 194
7.3 Key research findings 194
7.4 Contributions 195
7.4.1 Theoretical contributions 195
7.4.2 Practical implications 197
7.5 Limitations 199
7.6 Potential avenues for future research 200
7.7 Concluding remarks 201
References 203
Glossary 222
Appendices 226

List of Figures

Figure 2-1. DFS Transactions and Access Channels 25
Figure 3-1. Uttar Pradesh State in India 54
Figure 3-2. Inductive-Abductive Analysis and Theorisation Stages 70
Figure 3-3. Transcript Arrangement in QSR NVivo Software 73
Figure 3-4. Transcripts of Participants from Bhatona Village (Pseudonym) 74
Figure 3-5. NVivo Screenshot Displaying the List of Initial Codes 75
Figure 3-6. NVivo Screenshot Displaying Provisional Categories 76
Figure 3-7. NVivo Screenshots: Second-Cycle Categories 77
Figure 4-1. A View of Farmlands, Roads, and Cell Towers in Chhomas 93
Figure 4-2. A Villager Using an ATM Outlet Outside the Bank in Chhomas 94
Figure 4-3. My Meal in Chhomas: Home-Cooked Rice and Curry 94
Figure 4-4. A Small Grocery Store Offering DFS in Maglasukh 96
Figure 4-5. A Woman Preparing Dinner on a Clay Stove in Shivennagar 98
Figure 4-6. My Dinner Cooked with Locally Grown Vegetables 98
Figure 4-7. A Front Yard View of a House in Shivennagar Featuring a Bullock Cart 99
Figure 4-8. Village Chief's Nameplate on the 102
Figure 4-9. Solar Street Lights in Balanpur 103
Figure 4-10. COVID-19 Awareness Slogans (in Hindi) in Balanpur 103
Figure 4-11. Digital Payment QR Code Option at Retail Shop in Balanpur 104
Figure 4-12. Main Market View of Shikarpur Town 105
Figure 4-13. Pavements and House Structures in Machru 106
Figure 4-14. Villager Operating Digital Milk Quality Testing Machine in Bhatona 108
Figure 4-15. People Accessing Financial Services at BC Points in Shikarpur 109
Figure 4-16. A Tall Gate Type Structure at Entrance of Mandwaya 109
Figure 4-17. A Mobile Network Tower in Mandwaya 110
Figure 4-18. Front Courtyard View of Retired Resident's House in Mandwaya 111
Figure 5-1. Thematic Graph Illustrating the Construction of Theme 1 129
Figure 5-2. Jatin Displaying Smartphone Apps He Utilises on a Routine Basis 132
Figure 5-3. Hari Showing His DFS Use 138
Figure 5-4. AePS Device with Biometric Scanner at BC Point Situated in Shikarpur 141
Figure 5-5. QR Code for Digital Payments at Kulveer's Retail Shop in Chhomas 143
Figure 5-6. Tilak Displaying His DFS Mobile Application on His Smartphone 144
Figure 5-7. Thematic Graph Illustrating the Construction of Theme 2 150

Figure 5-8. Brij Revealing Financial Awareness SMS Received from the Bank 152

Figure 5-9. Mobile Phone Screenshots Displaying Informative DFS Infographics 152

Figure 5-10. Phishing SMS Urging Bank Customer to Call Fraudulent Contact Numbers for ATM Card Activation 155

Figure 5-11. Push Notification on Bank Mobile App Alerting Customers about 156

Figure 5-12. Bank-Provided Multilingual DFS Cyber Awareness Guidelines 158

Figure 5-13. Bank's DFS Cyber Awareness Advice in Multilingual Format 158

Figure 5-14. Thematic Graph Illustrating the Construction of Theme 3 162

Figure 6-1. Conceptual DFS-Use Continuum for Realising Diverse Life Goals 187

List of Tables

Table 3-1. Two UP Districts and Corresponding Villages 55
Table 3-2. Demographics of GBN Villages 56
Table 3-3. Demographics of BS Villages 57
Table 3-4. Research Participants in Three Villages of BS District 60
Table 3-5. Research Participants in Four Villages of GBN District 61
Table 3-6. Bank Officials in Rural Areas of GBN and BS Districts 62
Table 3-7. Categorisation of Participants by DFS User Types 63
Table 7-1. Theoretical Generalisations (adapted from Walsham (1995)) 197

List of Appendices

Appendix A – Ethics Application Approval Letter 226

Appendix B – Participant Information Sheets 227

Appendix C – Interview Consent Forms (English and Hindi versions) 235

Appendix D – Researcher Safety Protocol 237

Appendix E – Observation Protocol 239

Appendix F – Indicative Questions for Rural Residents and Bank Employees 240

Appendix G – Photography Protocol 242

Appendix H – List of Initial Codes Assigned to Data Corpus at First-Cycle Coding 243

Appendix I – Details of Provisional Themes and Categories Identified at Stage 3 of Analysis 251

Appendix J – Supporting Evidence Signifying DFS Use for Expanding Economic Opportunities 252

Appendix K – Supporting Evidence Signifying DFS Use for Expanding Information Capabilities 253

Appendix L – Supporting Evidence Reflecting Existence of Structural Capital for Developing DFS Awareness 254

Appendix M – Supporting Evidence Reflecting the Role of Structural Capital for Developing DFS Know-How and Providing Monetary Backup Support to Others 255

Appendix N – Supporting Evidence Reflecting the Role of Cognitive Capital Enabling others to Comprehend Financial Concepts and Improve Safe DFS Practices 256

Appendix O – Supporting Evidence Reflecting the Role of Relational Capital for Nurturing DFS-Mediated Support System 257

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Author's Name: Himanshu Sharma

	04 June 2024
_____	_____
Signature	Date

Acknowledgements

As part of my PhD journey, I want to express my gratitude to all who have helped me learn, produce knowledge, and complete my PhD thesis.

Let me start with my supervisors, Professor Antonio Díaz Andrade and Dr Ranjan Vaidya. I want to express my utmost gratitude to Professor Díaz Andrade, whose in-depth knowledge of the IS and ICT4D fields and expert and intense supervision have played vital roles in completing and achieving this once-in-a-lifetime academic goal. Beyond Professor Díaz Andrade's academic backing, he has also been an emotional supporter who helped me overcome the unavoidable challenges I encountered during my PhD journey.

Dr Vaidya's contribution to my research has been invaluable. His insightful feedback and constructive critiques of my work have enabled me to purify my research techniques and strategies. Moreover, Dr Vaidya's warm and welcoming attitude has made my PhD journey more seamless. I am grateful for the opportunity to work under the supervision of my supervisors and produce this scholarly work. As a result of their guidance, inspiration, and round-the-clock availability, I have broadened my horizons and am also motivated to contribute to ICT4D research.

I sincerely thank the distinguished senior academics of the Business Information Systems (BIS) department for their invaluable inspiration and guidance over the past few years. In particular, Professor Bill Doolin, Associate Professor Harminder Singh (Head of the BIS department), and Professor Angsana Techatassanasoontorn have been extremely generous in sharing their research experiences, as well as valuable tactics to address the complexities that doctoral students frequently encounter during their doctoral journey.

The contribution of AUT Elab and all the individuals who provided valuable workshops is highly appreciated, as these workshops have played an important role in enhancing the overall presentation of this thesis. I want to thank the library personnel at AUT for their invaluable assistance in retrieving research materials and the IT Services team's technical support in helping me access the qualitative data analysis software. I would also like to extend my thanks to the individuals who aided me in conducting the fieldwork of this study in the rural regions of Uttar Pradesh, India.

I want to recognise my PhD colleagues and friends for their intellectual input throughout this doctoral journey. Their support has made this academic pursuit enjoyable.

I am highly thankful to Alison Warren for her assistance proofreading this thesis. Her careful attention to punctuation errors and the selection of words with different connotations to communicate specific ideas enhanced the overall quality of the document. I admire her dedication, expertise, and contribution to completing this work. However, any mistakes in this thesis are solely my responsibility.

I am deeply thankful to my family, my mother, siblings, and parents-in-law, for their encouragement and unconditional support. Thanks to Puneeta, my wife, and Samaira and Shanaya, my daughters, for their constant love, affection, and patience during this demanding and challenging endeavour. Their belief in my abilities was a continuous source of stimulation for me to achieve this life goal.

Lastly, I am grateful to those individuals who may not be named here but have contributed to my PhD journey in various ways.

Ethics Approval

This study was conducted in accordance with the AUT's Code of Conduct for Research. Ethical approval (application no. 20/386) was granted by the AUT Ethics Committee (AUTEC) on May 18, 2021.

Chapter 1 Introduction

1.1 Chapter outline

In this opening chapter, I establish the foundation for my research, stemming from both my pre-existing knowledge and personal encounters related to the engagement of rural inhabitants with digital financial technologies. Serving as a gateway, this chapter introduces the integral role of ICT in driving human progress. The chapter also offers a glimpse of the personal experiences that ignited my curiosity and led to the development of the overarching research question that guides this doctoral study. Through this chapter, I invite the readers to explore the potential of digital financial technologies in the rural Indian context.

1.2 Introduction and background

In an age of interconnectedness and rapid technological advancements, ICTs have emerged as a driving force in how information is exchanged and communication occurs. As defined by Hamelink (1997), ICTs "encompass all those technologies that enable the handling of information and facilitate different forms of communication among human actors, between human beings and electronic systems, and among electronic systems" (p. 3). These digital technologies are reshaping economies and societies worldwide by automating work, offering widespread access to information, improving financial systems, and enhancing the overall quality of life (Hamelink, 1997). At its core, ICT empowers individuals to seamlessly retrieve, store, process, and disseminate information (Heeks, 2017).

In our dynamic world, many challenges persist, some long-standing and others emerging. Issues such as food scarcity, gender inequality, poverty, illiteracy, terrorism, global warming, pandemics, population growth, and financial exclusion have always demanded attention. In response, international organisations, including the United Nations and the World Bank, have coordinated efforts to resolve these intricate global issues. The role of ICTs is becoming increasingly prominent in these international development strategies. This vital connection between ICT and development goals is known as "information and communication technology for development" (ICT4D), an

approach that has garnered significant attention from international development agencies (Heeks, 2017).

For more than 30 years, ICT4D research has generated substantial insights, especially concerning developing countries. Since the mid-1980s, researchers worldwide have explored various aspects and possibilities within ICT4D (Walsham, 2017). Yet ICT4D is an evolving journey, with each decade representing distinct advancements in the field's development (Avgerou, 2010). While past studies identified several important issues that need to be addressed by ICT4D researchers, particular emphasis is given to the problems relating to the financial sector within emerging economies. The existing research efforts have overlooked this important area, which is identified as critical for development (Heeks, 2014). Financial services play a crucial role in people's development by providing diverse financial products and schemes that enable individuals to mobilise their savings and investments to address future requirements and guard against financial shocks. In addition to safeguarding against unexpected financial risks, the financial services sector offers individuals opportunities to accumulate human capital (e.g. investing in education and skills) or physical capital (e.g. investing in business or assets) that further help in their socio-economic growth (Honohan, 2008). Therefore, considering these perspectives, this doctoral study centres on financial services offered by banking institutions, specifically ICT-based financial services.

1.3 The significance of financial services

Associating financial service access solely with income growth is inadequate, as mainstream financial access is a fundamental entitlement for all individuals. Hence, the accessibility of financial services is intricately linked to socio-economic development, particularly among disadvantaged segments of society (Menon, 2019). Access to financial services empowers individuals to address their essential requirements, including healthcare (Bhattacharya, 2020; Menon, 2019); housing and sustenance (Dupas & Robinson, 2013); education (Prina, 2015); and livelihood resources, such as farming equipment (Brune, Giné, Goldberg, & Yang, 2016).

Financial Inclusion (FI), defined by the World Bank (2018), refers to the consistent availability and access to financial services, including loans, savings, investments, and

insurance. The idea behind FI holds immense significance in reducing poverty, unlocking economic opportunities, and ensuring individuals' sustainable livelihoods and overall quality of life (Bishnoi & Devi, 2017; Bhattacharya, 2020; Malladi & McDonald, 2020).

The Human Development Report of 2016 also underscores that limited access to financial services impedes economic prospects and inclusive development by stating that the "lack of access to finance has been identified as a major constraint to [people's] economic opportunities and to becoming a part of the inclusive growth process" (Jāhāna, 2016, p. 106). The report further advocates for expanding banking networks and financial services to enhance people's inclusion in formal financial services through FI initiatives, particularly for isolated and underserved communities. This expansion is seen as an optimistic step towards addressing poverty and vulnerability among such communities.

1.3.1 ICT-enabled financial services

Organisations like the World Bank emphasise the crucial role of digital technologies in facilitating convenient and cost-effective access to various financial products and services. This ICT-mediated access empowers individuals and households to fulfil their daily requirements, achieve future goals, and safeguard against unforeseen emergencies and economic instabilities (Financial Inclusion, 2018).

The World Bank's FI Index indicates that approximately 1.2 billion adults globally are connected to the formal banking system. However, a substantial gap remains, with nearly 1.7 billion people without access to banking services. Almost half of this latter population resides in developing countries, including Bangladesh, China, Indonesia, India, Mexico, Nigeria, and Pakistan (Demirgüç-Kunt, Klapper, Singer and Ansar, 2022; Manyika, Lund, Singer, White, & Berry, 2016; Sharma, 2022).

Ensuring affordable, secured, and uninterrupted access to financial services has posed a substantial and longstanding struggle for governmental bodies and central banking authorities worldwide (BRICS, 2021). Integrating ICT with financial services has emerged as a transformative strategy that can revolutionise the way development challenges are tackled globally (Pazarbasioglu, Mora, Uttamchandani, Natarajan, Feyen, & Saal, 2020). Financial services that "rely on digital technologies for their delivery and use by

consumers" (Pazarbasioglu et al., 2020, p. 1) are commonly referred to as digital financial services (DFS).

Due to their cost-effectiveness, convenience, safety, and speed, DFS are more efficient than brick-and-mortar financial services delivery systems. They can help bring financial services to all sections of society, including people living in less privileged settings, such as rural regions (Finau, Rika, Samuwai, & McGoon, 2016; Manyika et al., 2016; Sharma, 2022). DFS support growth initiatives by allowing people to participate in economic activities (Aker, Boumnijel, McClelland, & Tierney, 2016; Joia & dos Santos, 2019; Wang & He, 2020).

DFS also stand as a crucial cornerstone in achieving the United Nations' Sustainable Development Goals (SDGs) by 2030, with a particular emphasis on goals such as "no poverty, gender equality, decent work and economic growth, innovation and reduced inequalities" (BRICS, 2021, p. 12; Financial Inclusion, 2018).

1.4 Research problem

The current body of DFS knowledge has predominantly directed its attention toward investigating the adoption and implications of DFS (Della Peruta, 2018; Peprah, Oteng, & Sebu, 2020; Rana, Luthra, & Rao, 2019). A recent review by Kim, Soo, Lee, and Kang (2018) underscores that the prevailing focus within the DFS literature centres on supply-and-demand dynamics, implementation strategies, and the influence of environmental and contextual factors. Concerning the implications of DFS for human development, a recent review of DFS literature from 2000 to 2020 across the global landscape revealed a crucial relationship between two intertwined DFS dimensions: foundational conditions and effectual repercussions. Foundational conditions include people's contexts, digital skills, literacy, and trust. These foundational conditions have consequential outcomes such as shaping financial behaviours, energising economic activities, and fostering financial inclusion (Sharma & Díaz Andrade, 2023). While these aspects are undoubtedly important, the potential of DFS to achieve life goals remains relatively underexplored, especially within the domains of Information Systems (IS) and ICT4D research.

Further, underscoring the significance of this study, it is crucial to emphasise my personal experiences that have played an influential role in driving my curiosity to

explore the domain of DFS, especially concerning their impact on the realisation of life goals. At this juncture, I aim to direct your attention to the underlying story that initially ignited the motivation behind undertaking this doctoral study.

The year 2016 brought a seismic shift in the Indian economy when the Indian government demonetised ₹500 and ₹1000 notes. While some researchers assert it was a strategic strike against black money, counterfeit currency, and corruption within the nation (Bansal & Jain, 2018), an alternate perspective proposes that this was a manoeuvre to propel the adoption of DFS (Agarwala, 2017). However, as I observed, the aftermath of this event manifested as a scarcity of physical cash that resonated deeply in the lives of numerous individuals, including my family, relatives, and friends. While some applauded the event, many criticised it. The adverse impact was particularly pronounced among those habituated to traditional (cash-based) financial practices. But the disruption was not merely fiscal; people's routines were disordered, their assurance wavered, and their life goals hindered. For instance, people spent hours in the long bank queues to exchange old currency notes for new denominations. They had to cancel or postpone their pre-booked occasions, such as wedding ceremonies. Moreover, the cash crunch affected their health by contributing to increased mental stress. This realisation motivated me to explore the interplay between DFS and life goals.

In this research, which focuses on achieving life goals through DFS, it becomes imperative to grasp the significance of life goals in human existence. In a broad sense, life goals are different states of being an individual can aspire to achieve for their life to follow the desired course (Promphakping, Somaboot, Mee-Udon, Rattanaprathum, Weeranakin, Promphakping, & Suparatanagool, 2021). In simple terms, people's goals define what they want to achieve in life and how to realise them using diverse means (Gough & McGregor, 2007; Hennecke & Brandstätter, 2017; Sharma, 2022). These life goals may range from achieving good health, sustenance, financial independence, safe shelter, education, and awareness (McGregor, Camfield, & Woodcock, 2009; Promphakping et al., 2021).

Life goals are pivotal in shaping individuals' social environments. They act as a filter for how people perceive the world around them. They make people focus on essential things and help them recognise and make sense of diverse situations and opportunities

(Fitzsimons & Shah, 2008). Moreover, people's interactions with others in their social circles influence their life goals. Since people spend most of their time with others, such as family members, relatives, colleagues, or even professional rivals, these social connections may provide people with prospects to achieve their life goals (Fitzsimons & Shah, 2008). The achievement of life goals also exerts a positive influence on behaviour, personality (Hudson & Roberts, 2014), work performance (Lee, Locke, & Latham, 1989), and overall subjective wellbeing and contentment (Hennecke & Brandstätter, 2017). Essentially, life goals impart a sense of purpose, fostering meaningful and fulfilling lives (Brdar, Rijavec, & Miljković, 2009; Klinger, 1977).

Past research recognises the potential of ICTs not only as a means or resource for accessing goods and services but also for enabling people to achieve their life goals (Michael, Kobran, Abbas, & Hamdoun, 2019). In other words, ICTs are vehicles for the journey toward goal attainment, providing a supportive environment that empowers users to attain their desired state of being to lead a better quality of life. For instance, mobile health fitness applications allow users to access exercise routines and dietary recommendations, guiding them on their fitness journey. But, at the same time, this health application provides a supportive environment, which enables users to achieve desired health and fitness (Martinez, Smith, Etingen, Houston, Shimada, Amante, Patterson, Richardson, Vandenberg, & Cutrona, 2021). Similarly, safe living conditions are paramount for individuals to experience a good quality of life. The use of digital technologies (e.g. artificial intelligence systems) can be instrumental in achieving safe shelter by monitoring and controlling crime and potential threats, ensuring a secure environment for residents in a particular area (Michael et al., 2019). From an agricultural perspective, farmers' use of mobile phone technology has brought about several significant benefits. It allows them to access critical agrarian resources, such as weather forecasts, farming expertise, and market information. At the same time, mobile phones have enabled farmers to maximise their opportunities to increase their crop productivity. Ultimately, these advancements in mobile phone technology as means and enablers have played a pivotal role in supporting the livelihoods of farmers (Uduji, Okolo-Obasi, & Asongu, 2019). These examples underscore the influential role of ICTs in facilitating positive change in the lives of individuals and communities. This study recognises DFS both as a means and enabler, that is, providing people with access to

financial services and as a potential catalyst for improving socio-economic progress and wellbeing.

While prior research has recognised the role of ICTs in ensuring quality of life, there is a lack of attention on DFS's role in attaining life goals to lead a meaningful life. India has seen a remarkable adoption and use of DFS in the past few years, including in rural areas, where a significant portion of financial transactions occur digitally (Sharma & Thomas, 2017; Sharma, 2022). With millions of rural residents and a growing shift towards digital transactions, mainly through mobile payment applications, this study aims to explore the utilisation of DFS by individuals residing in Indian rural settings. Consequently, the central research question guiding this study is:

How do individuals in rural regions of India leverage DFS to achieve life goals?

Given the limited research attention on DFS usage for achieving life goals, the purpose of this research, guided by the overarching research question, is to develop theoretical knowledge to understand better the role of DFS in attaining a meaningful and dignified way of life in the context of rural communities. Moreover, the anticipated findings of this study contribute to practical insights for policymakers, financial institutions, and individual users towards the rapidly evolving DFS.

This study employs qualitative interpretive research methods, utilising ethnographic techniques. The fieldwork for this study was conducted in seven villages in two districts within the state of Uttar Pradesh (UP), India. The conclusive sample for this qualitative study comprises **36 individuals** (as units of analysis) and **six bank employees**, collected over three months (September 2021 to November 2021). Data analysis was performed using a thematic analysis approach.

1.5 Chapter conclusion and thesis structure

Now that I have introduced the research problem, motivations and overarching research question guiding this study, I will provide the thesis structure. This thesis is organised across seven chapters. The following overview offers snapshots of the remaining six chapters.

Chapter Two – Origins to Theories: Navigating Extant Research: This chapter explores human development perspectives and the pivotal role of ICT in influencing human development. It outlines DFS, covering terminologies, channels, and transaction types. The evolution of DFS is discussed alongside a comprehensive overview of ongoing research. The chapter concludes by introducing theoretical frameworks from the literature review surrounding the notions of capabilities, functionings, and social capital.

Chapter Three – Research Methodology: This chapter explains my underlying philosophical perspective. It then presents the research design, providing intricate details of the data collection process. This includes the research sites, participant selection, attributes of research informants, varied data sources, and my role as the researcher. The chapter further elaborates on the data analysis approach using inductive and abductive thinking to extract theoretical insights.

Chapter Four – Research Context: This chapter sheds light on India's financial services and FI efforts. The focus narrows to UP state, detailing its historical, socio-economic, and financial dimensions. This chapter provides insights into village life, covering physical settings, living conditions, economic activities, and cultural practices. Additionally, educational levels, financial awareness, and digital skills among villagers are discussed. This chapter also describes people's DFS preferences, challenges, and engagement with traditional banking channels.

Chapter Five – Thematic Kaleidoscope: This chapter describes core themes, their corresponding categories, and codes derived from a thematic coding process guided by inductive reasoning. To support the findings, I have included selected excerpts from participant interviews and relevant photographs taken during the fieldwork.

Chapter Six – Discussion: This chapter offers an analytical discussion of the significance of the findings within the context of the study's overarching research question. The discussion is organised into two parts. The first part presents an interpretation of key findings by comparing and contrasting them with existing DFS literature, aiming to enhance our understanding of the evolving role of DFS. Guided by abductive inference logic, the subsequent part discusses core themes considering relevant theoretical perspectives (explained in Chapter Two) to extract theoretical insights into the DFS's use and contribution to people's realisation of life goals.

Chapter Seven – Conclusions: This chapter serves as a wrap-up of this doctoral study, highlighting the key research outcomes and their theoretical contributions and practical implications. This chapter also presents research limitations and future research directions within the DFS domain.

Chapter 2 Origins to Theories: Navigating Extant Research

2.1 Chapter outline

This chapter begins by understanding different development perspectives, followed by elaborating on the role played by ICTs in human development. Then, it proceeds to offer an overview of DFS, incorporating fundamental terminologies, diverse channels, and transaction types prevalent within the DFS landscape. The trajectory of DFS evolution is then presented, accompanied by an exhaustive exploration of ongoing DFS research. The chapter concludes by revealing the theoretical concepts from the literature review, incorporating the capability approach (CA) framework and social capital (SC) dimensions.

2.2 Development perspectives

Since this doctoral study's primary focus is on exploring the role of ICT in development initiatives, it is critical for an ICT4D researcher to understand the foundational theories and the multidisciplinary view of development. Being informed by different perspectives on development allows me to understand the economic, political, and social contexts in which ICT4D initiatives operate and how these initiatives can better contribute to human development. Moreover, this holistic understanding facilitates my decisions about my research design and methodologies (Walsham, 2006).

Development studies argue that the concept of development can be understood differently. The earlier perspective of development is viewed as a process where societies undergo significant and long-lasting changes. This idea was more common in the 1950s and 1960s. This outlook of development points towards significant societal shifts, for example, people adopting urban civilisation by leaving their traditional rural culture or habitats or moving from a farming-based society to an industry-based society. These changes may also affect other social and economic dimensions, such as ownership, production norms, technology use, and law and order. In this view of development, not all societies across the globe need to change at the same pace, as these changes happen in the long term. This broad, long-term perspective is useful for seeing the big picture but might not be so helpful for making short-term decisions, such as government policies that only cover a few years (Sumner & Tribe, 2008).

Another way of looking at development is to see it as a way to measure economic progress and performance. This view appears narrower and focuses on specific outcomes by setting and achieving the governments' short- to medium-term goals, such as reducing poverty, child mortality and hunger and increasing global affiliations. However, the problem with this technocratic view of development is that it focuses on specific goals or plans set by the government that might only be suitable for some people in society. In other words, development is based on a fixed set of rules considered appropriate for everyone. This limited logic about development does not give enough importance to who benefits from it (Sumner & Tribe, 2008). Development is not just about the economic progress of countries but also about the societies and communities residing in countries across the globe.

The first two perspectives discussed above view development as a means of making social changes and economic progress. Besides these two outlooks, there is another way to look at development. This third perspective is referred to as post-modern or post-colonial development. It is based on the premise that countries in the southern part of the world are less modern, labelled as underdeveloped or developing, in contrast to other countries in the northern side, identified as developed or the 'first world' countries (Escobar, 2012). Escobar (2012) critiques this Western-led binary view of development, characterising it as a form of cultural imperialism where one side of the world (i.e. the North) imposes specific values and ideas on the other (i.e. the South). For example, certain things that the South has, like traditional or non-Western methods of medicine and other aspects of their society, are seen as inferior to the ones in the North (Sumner & Tribe, 2008). This perspective on development was conceived as a deliberate effort after World War II when U.S. President Harry S. Truman, on January 20, 1949, declared, “We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas” (Sumner & Tribe, 2008, p. 14). In history, the word 'underdeveloped' was used for the first time in this way. President Truman may have done this intentionally or by mistake; it was the moment when two billion people (in the South) were labelled as underdeveloped (Esteva, 2010).

The post-modernisation perspective, focusing on differentiating between the ‘traditional’ and ‘modern’ aspects of societies, marked a significant paradigm shift in

perceiving development (Hout, 2016). In this view, development issues were not solely rooted in economic deficiencies but also cultural and information deficits (Waisbord, 2020). It portrayed development as a linear progression, envisioning all societies moving from 'backwardness' (underdeveloped) to 'westernised' (developed) status through the transfer of expertise, technology, skills, and modern values from the developed global north to the less developed global south, reflecting Western thought (Servaes, 1995, 2020).

The belief that underdeveloped and developing nations could address their information problems through communication, mass media exposure, urbanisation, and literacy was recognised as pivotal for development. Consequently, media technologies, such as newspapers, radio sets, cinemas, and televisions, were seen as effective channels for promoting advancement (Waisbord, 2020). Rogers (1983) introduced the "diffusion of innovations" theory, which became a highly influential extension of advancement theory (Rogers, 1983). Rogers' view, focusing on understanding the mechanisms behind the spread of new ideas and innovations in society, also introduced a significant shift in communication dynamics. According to this theory, communication should be viewed as a participatory endeavour to foster social change and achieve social and material progress. This transformation in development thinking challenged the traditional one-way transmission of information, turning communication into a dynamic process where participants collaboratively generate and exchange information, all with the shared goal of attaining mutual understanding (Rogers, 1976).

However, this innovative perspective on communication was not without its critics. The dependency paradigm, which emerged from Latin America and drew from Marxist and neo-Marxist ideas about capitalism and imperialism, offered a compelling critique of modernisation and diffusion theories like Rogers' (Hout, 2016). It suggested that the challenges faced by the Third World were closely linked to how capitalist development was unfolding. Instead of blaming Third World countries, dependency theorists opposed modernisation theories and pointed to external factors as the cause of underdevelopment. They emphasised that the problems faced by underdeveloped nations were more about politics and power dynamics than simply lacking information. Dependency theorists argued that underdevelopment in the Third World resulted from the advancement of the Western world. They claimed that the concentration of

economic power and political decision-making in the West sustained underdevelopment and dependency in other regions. The theorists viewed Third World countries as politically and culturally dependent on the West, especially the United States (Waisbord, 2020).

The criticism of this development shift also pointed out its top-down, ethnocentric, and paternalistic approach to development. Critiques of this paradigm contended that the diffusion model of development reflected a Western perspective of progress, and such interventions aimed solely at improving communication or modifying behaviour were inadequate for achieving meaningful social change (Waisbord, 2020).

During the mid-1980s, the concept of human development gained traction, primarily influenced by ground-breaking research on capabilities and entitlements (Sen, 1999). This viewpoint perceives development as the process of capacitation, emphasising the pivotal role of enabling individuals to exercise their capabilities. The United Nations Development Programme's Human Development Reports encapsulate this perspective, defining development as expanding people's choices, focusing squarely on empowering individuals to make meaningful choices in their lives (Pieterse, 2010; UNDP, 1990). The concept of choices, understood as freedoms, inherently assumes the availability of essential resources that enable individuals to sustain a decent quality of life. These choices embrace a range of political, economic, and social freedoms individuals value to lead a life of dignity and respect (Sen, 1999). As cited in the foreword by William H. Draper III, the Administrator of UNDP, in the inaugural Human Development Report in 1990:

> The purpose of development is to offer people more options. One of their options is access to income - not as an end but as a means to acquiring human wellbeing. However, there are other options as well, including long life, knowledge, political freedom, personal security, community participation, and guaranteed human rights. (UNDP, 1990, p. iii)

This evolving understanding recognises that development is not solely about material progress but an inclusive and sustainable growth process that underscores the importance of ensuring the benefit of all segments of society, particularly marginalised and vulnerable groups (Ianchovichina & Gable, 2012). Inclusive and sustainable growth strategies prioritise equal opportunities for people in their social, political, and cultural

environments. These perspectives align with the broader objectives of UNDP's notion of human development, which aim to enhance well-being, foster equality, and build sustainable and inclusive societies. In essence, development is a multidimensional and multidisciplinary process that aims to improve lives, promote equality, and create sustainable and inclusive societies (Hamel, 2010). However, it is essential to recognise that there is no one-size-fits-all approach to development, as different regions' diverse realities and complexities cannot be encapsulated by a single standardised framework (Escobar, 2012). The uniqueness of each community and society necessitates a context-specific approach to development. Therefore, successful development initiatives must be tailored to accommodate and integrate local values, cultures, and resources, reflecting the aspirations and needs of the people it aims to serve (Díaz Andrade & Urquhart, 2012).

Considering the development perspectives mentioned above, I acknowledge the viewpoints offered by Sen (1999) and UNDP (1990) regarding human development and the vital role of ICTs, with a specific focus on the significance of DFS in driving ICT4D initiatives (Heeks, 2017).

2.3 ICT and development

The idea that ICT is crucial in influencing development is not recent. The significance of ICT can be traced back to the modernisation and globalisation perspectives of development, as discussed above. However, the rapid advancement and easy access to digital technologies have increased attention on the interplay between digital technology and development at individual and community levels and their socioeconomic growth (Heeks, 2010, 2017; Thapa & Sæbø, 2014). The compelling question – do ICTs contribute to development? – has further ignited widespread interest and become a frequent research point among development practitioners, scholars, and agencies (Heeks, 2010). To answer this question, researchers have studied the effects of ICT in developing economies, specifically focusing on how these technologies can be leveraged to improve the wellbeing of people in these regions.

Several scholars recognise the developmental potential that ICTs possess; for instance, the role of ICT-driven interventions in promoting informal learning (Arora & Rangaswamy, 2013), the importance of information in the lives of rural communities

and the mechanism to address challenges related to ICT4D initiatives (Díaz Andrade & Urquhart, 2010); the significance of mobile phones in shaping livelihood strategies (Duncombe, 2014); ICTs for providing developmental benefits (Walsham, 2010), as well as for shaping development processes, power structures and ideologies (Zheng, Hatakka, Sahay, & Andersson, 2018); and, relevant to this study, DFS's potential (Donner & Tellez, 2008).

The importance of ICT in development lies in its transformative potential across multiple societal dimensions, including access to health facilities, education opportunities, civic participation, political liberties, and economic facilities (Hamel, 2010; Heeks, 2010). For instance, ICT has expanded healthcare capabilities by facilitating the creation of digital records for disease diagnosis and treatment, as well as enabling remote consultations in areas with limited medical facilities (Clerici, Gamba, Nota, & Tecco, 2022; Goodridge & Marciniuk, 2016). Similarly, these digital technologies have broadened educational opportunities by reaching populations with limited learning resources (Van Brakel & Chisenga, 2003). ICT has provided innovative solutions for governments in developing nations to enhance public service registration and the delivery of social benefits. A notable example is the implementation of 'Aadhaar' in India, which provides citizens with a unique identity and has contributed to reducing widespread corruption in the social benefit system (Sathe, 2011).

Furthermore, the adoption of mobile phone-based technologies has empowered farmers by enabling them to access modern agricultural knowledge, thereby improving farming outputs and promoting farm entrepreneurship (Uduji et al., 2019). In financial services, ICT has had profound effects on people's lives by expanding their reach to essential financial services. Access to DFS has not only assisted people in recovering from adverse events, such as illness, crop failure, and job loss, but also stimulated savings, enabling them to finance their education and healthcare needs (Jack & Suri, 2014; Karlan, Ratan, & Zinman, 2014).

These examples collectively demonstrate that ICTs, including DFS, serve as a vital resource in driving human development by enabling individuals, communities, societies, and governments to address pressing challenges such as poverty, hunger, and corruption on a global scale (Heeks, 2017; Walsham, 2017).

ICTs are recognised as powerful tools for human development by offering innovative solutions to expand access to financial services, particularly in underserved and remote areas. However, a critical examination of ICT-driven FI initiatives reveals limitations and complexities that warrant consideration. For instance, while DFS have the potential to overcome geographical barriers and reach populations in remote areas, they also face significant challenges related to trust, digital literacy, infrastructure gaps, and unequal access to technology.

The effective use of DFS requires individuals to place value and trust in these services, particularly regarding interactions between customers and financial services agents. Past research shows a lack of trust among M-PESA customers towards agents, stemming from transaction failures and misunderstandings. Agents frequently face accusations of stealing money, leading to tense confrontations (Morawczynski & Miscione, 2008). These transactional issues are pointing the significance of trust-based relationships and challenges for the success of DFS.

Consumer education and financial literacy are integral components of the effective uptake of DFS. Providing access to financial services with the goal of inclusion and well-being enhancement can only succeed if consumers are adequately informed about product usage, rights, and responsibilities. For instance, newly banked consumers must understand how to address issues encountered while using DFS, such as transaction disputes or account discrepancies. Without proper education, consumers may be unaware of available redress mechanisms, leading to reluctance to adopt DFS (Malady, 2016). Enhancing consumer education and financial literacy can further facilitate establishing their trust in DFS and improving their utilisation among consumers.

Moreover, evidence suggests that DFS initiatives overlook the infrastructural requirements needed to gain the full potential of DFS, particularly for low-income groups in developing nations. There is still a significant population in developing countries who lacks access to the Internet. DFS initiatives often rely on Internet access, excluding individuals who lack access to Internet connectivity (Dwivedi et al., 2016).

Research also contends that DFS is tied to capitalism and exacerbates global and societal inequalities rather than fostering development and inclusion. They emphasise that narratives of digital FI to drive job creation and economic growth often overlook power

dynamics, potentially leading to exclusion and exploitation (Murphy, Carmody, & Surborg, 2014). For instance, research acknowledges that DFS can create jobs that are not very secure for everyone, as it creates inequality among workers, leading them to lose their jobs (Dolan & Rajak, 2018). Along the same line, research determines that DFS negatively contributes to the rise in informal work culture and creates socio-economic inequalities by shifting power among small entrepreneurs (Peša, 2018).

While DFS hold promise for reaching marginalised populations and reducing traditional barriers to financial access, it also presents new challenges, particularly in terms of racial equity. Research suggests that DFS involves algorithmic biases that disproportionately affect communities of colour by creating barriers to access and inhibiting the development of inclusive financial products and services tailored to their needs. For example, algorithms trained on biased datasets result in discriminatory outcomes, such as disproportionately denying financial services or offering unfavourable terms to individuals from minority groups belonging to developed nations, such as the USA (Sanchez-Moyano & Shrimali, 2021). Collectively, these complexities pose challenges to the smooth uptake of DFS and the primary objective of inclusivity and development through DFS (Anderson, 2019; Graham & Mann, 2013).

These contrasting viewpoints offer a chance to conduct a more in-depth study to explore further the interplay between ICT, particularly DFS, and development. Against this backdrop, this study aims to examine DFS's role in expanding people's choices, enabling them to achieve their diverse and valuable life pursuits to live a decent and dignified life.

The subsequent section presents a comprehensive conceptual understanding of DFS, covering key terminologies, channels, and transaction types associated with DFS. This description also aims to provide readers with an understanding of the evolution trajectory of DFS and highlights critical DFS studies conducted in the field.

2.4 Overview of DFS

Financial services play a crucial role in society by enabling individuals to function effectively, stimulating livelihood activities, reducing poverty, and driving economic growth of individuals and communities on regional and national levels. Without financial services, individuals might struggle to find economic opportunities (e.g. borrowing or

lending), leading to an excessive focus on saving for emergencies and reduced consumption of essential goods and services (Asmundson, 2017). Recent advancements in digital technologies, particularly on the Internet and mobile-based communications, have significantly bolstered the financial sector's, particularly the retail banking sector's, reach and made essential financial services accessible worldwide. Additionally, the rise of financial technology (FinTech) has empowered these financial institutions to explore and embrace innovative financial products and services tailored to meet their customers' specific needs and demands (Jayawardhena & Foley, 2000).

DFS encompass innovative digital technologies that financial institutions, such as banks, use to deliver vital financial services to consumers (Pazarbasioglu et al., 2020). By leveraging ICT's powers, DFS offer cost-efficient delivery channels, including electronic payment systems and digital banking products and services (David-West, Iheanachor, & Kelikume, 2018). Delivery of DFS involves various remote and face-to-face channels using digital platforms, such as mobile phones and other electronic means, which consumers employ to access and conduct a wide range of essential financial services virtually (Bradley & Stewart, 2003). DFS research demonstrated that adopting DFS has significant implications for promoting sustained economic growth by fostering inclusive growth strategies and effectively reducing poverty levels (David-West et al., 2018).

At this juncture, it is worth clarifying the distinction between FinTech and DFS in understanding their roles and impacts on financial inclusion, especially within the context of developing countries. While both terms involve the use of digital technology in financial services, they operate from different perspectives and serve distinct purposes.

DFS primarily focuses on delivering financial services to underserved populations through digital channels and technologies, including mobile money, digital wallets, and digital payment systems. This expansion enhances access to financial services in a more convenient, affordable, and accessible manner (Alliance for Financial Inclusion, 2016; Pazarbasioglu et al., 2020).

On the other hand, FinTech, the short form of financial technology, focuses on the supply side of the financial sector and associated services by innovating technologies and business models to enhance the delivery of a broad range of financial services,

including mobile financial applications, payment systems, peer-to-peer lending platforms and solutions for remittances (Alliance for Financial Inclusion, 2016; Ernst & Young Global Limited, 2017). In a broader interpretation of the term, FinTech represents business organisations or representatives of these organisations that design and develop modern and innovative technologies for financial services providers, such as banks or individual clients. FinTech companies typically aim to attract clients by offering products and services that are more user-friendly, efficient, transparent and automated than currently available (Dorfleitner et al., 2017).

From the perspective of developing countries, the rise of FinTech firms has not only intensified competition among financial service intermediaries such as banks but has also facilitated the enhancement of financial inclusion among underserved clientele (Frost, 2020; Kowalewski & Pisany, 2023).

2.5 DFS evolution trajectory

The path of digital transformation in the financial services sector has experienced significant progress since the introduction of the first automated teller machine (ATM) by Barclays Bank in the United Kingdom in 1967. This critical milestone initiated a transformative path that fundamentally changed the delivery of financial services (Arner, Barberis, & Buckley, 2016). In 1968 and 1970, electronic payment systems were introduced, laying the foundation for the present-day Internet and mobile payment systems. These systems, known as the Bankers' Automated Clearing Services (BACS) in the UK and the Clearing House Interbank Payments System (CHIPS) in the United States, were established during those years.

The Society of Worldwide Interbank Financial Telecommunications (SWIFT) formation in 1973 was a direct response to the growing necessity of harmonising domestic payment systems across international borders (Arner et al., 2016). In that very year, Seattle's First National Bank introduced a groundbreaking touch-tone telephone service called 'home banking' through its subsidiary, Telephone Computing Service. This innovative offering provided customers various financial services, including electronic bill payment, money management, and tax calculation services (Edmunds, Fishman, & Hedstrom, 1977).

E-banking made its initial appearance in the United States in 1980, when Citibank, Chase Manhattan, and Manufacturers Hanover introduced it. Similarly, in 1983, the UK's Nottingham Building Society launched its version of electronic banking (Arner et al., 2016; Cronin, 1998).

Another significant milestone in the evolution of digital banking occurred in 1995 when the Security First National Bank introduced the world's first "Internet bank" in the United States. This momentous initiative marked a crucial turning point in the financial industry as it embraced the potential of the Internet to deliver banking services. The launch of the Internet bank opened new horizons for customers, providing them the convenience and accessibility to manage their finances online, anytime and from anywhere with an Internet connection. This pioneering move paved the way for the rapid expansion of online banking and set the stage for the digital transformation that continues to reshape the financial services landscape to this day (Chou & Chou, 2000).

During the mid-1990s, the financial services industry emerged as the largest consumer of information technology, a position it maintains. By this time, digitalisation had already taken a firm hold within the sector. Technological advancements and transformations in financial services accelerated significantly in the 21st century, surpassing any previous historical period. By 2001, online banking had already gained traction, with a minimum of one million customers in the United States accessing these services. The onset of the 21st century witnessed the integration of information technology with advancements in radio and networking technology, resulting in the widespread adoption of mobile phones on a global scale. By 2002, the total number of cellular customers reached 1.16 billion, exceeding the count of landline phone subscribers, which stood at 1.09 billion. By 2005, the number of mobile phone subscribers had nearly doubled, significantly surpassing the count of landline customers. Notably, Asia emerged as the frontrunner in mobile phone penetration, surpassing Europe and the Americas in adoption and usage (Comer & Wikle, 2008).

The rise in accessibility and affordability of digital technology, coupled with the unique contextual factors and often demanding conditions in various regions, created an ideal environment for emerging customised financial solutions empowered by digital technology. The Philippines, characterised by the rapid adoption of mobile phones and

facing geographic and demographic challenges, played a significant role in developing pioneering mobile money services. In 2001, Smart Communications and Banco de Oro introduced Smart Money, the world's first mobile money service, followed by the launch of GCash, an SMS-based financial services platform, in 2004 by Globe Telecom (GSMA, 2012; Hasnain, Komu, & Blackburn, 2016).

The year 2005 witnessed the emergence of ING Direct and HSBC Direct, the first direct banks in the UK. These innovative institutions operated solely through the Internet, email, or other electronic channels, without physical branches, marking a notable shift in banking practices (Arner et al., 2016).

Mobile financial services (MFS), a subset of DFS, began making significant inroads into Africa. Following platforms like Smart Money and GCash, Safaricom introduced M-PESA in 2007 as a mobile money platform in Kenya. The term M-PESA is derived from 'M' for mobile and 'PESA' for money in Swahili. M-PESA quickly gained prominence as a pioneering example of mobile money development. Its success in Kenya paved the way for its adoption in Tanzania and Uganda. M-PESA has an impressive user base of nearly 32 million across ten countries. Meanwhile, mobile money adoption in South Asia witnessed a remarkable growth rate of 52% within five years, specifically from 2014 to 2018. This growth has placed South Asia as the region with the fastest growth rate in mobile money adoption worldwide (Espinosa-Vega, Shirono, Villanova, Chhabra, Das, & Fan, 2020).

In India, the National Payments Corporation of India (NPCI), a not-for-profit organisation established by the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA), has played a significant role in developing and managing the country's retail payment and settlement systems. Since its establishment in 2008, NPCI has developed and launched several innovative financial services products to enhance the payment system in India. NPCI's product journey includes RuPay, an indigenous payment system that facilitates debit, credit, and prepaid card transactions; IMPS (Immediate Payment Service), a real-time retail payment mechanism; the APBS (Aadhaar Payment Bridge System), which supports government benefit transfers; AePS (Aadhaar Enabled Payment System), which enhances banking accessibility in rural areas; and the NFS (National Financial Switch), which offers the largest shared ATM network in the country.

In 2016, NPCI introduced the Unified Payments Interface (UPI), a mobile-based low-cost payment system solution that operates 24/7, allowing users to make real-time payments conveniently. This innovative product aimed to simplify the payment process by enabling seamless transactions between different banks and payment service providers. By leveraging mobile technology, UPI empowered users to initiate transactions quickly, check account balances, and conduct peer-to-peer transfers. The introduction of UPI marked a significant step forward in India's digital payment ecosystem, providing a secure, efficient, and inclusive solution for individuals and businesses to carry out financial transactions (Gochhwal, 2017). UPI has enabled payments to be conducted seamlessly through various methods such as aliases, QR codes, and mobile-based payment applications like Google Pay and PhonePe. These digital payment applications leverage the UPI system to facilitate seamless and secure financial transactions. UPI allows users to link multiple bank accounts and perform cashless transactions through these mobile applications. These applications support various services, including utility bill payments, mobile recharges, online shopping, insurance purchases, and mutual fund investments.

MFS, including mobile money and payment solutions, have expanded their reach to nearly every corner of the globe. This widespread availability is particularly evident in regions (including Southeast Asia, Latin America, and Sub-Saharan Africa) with limited access to financial services from formal institutions (e.g. banks). MFS leverage the widespread adoption of mobile phones and the availability of network coverage to offer a range of financial transactions and services, such as money transfers, bill payments, and even savings and credit options. By utilising mobile devices as the primary interface for financial activities, these services have bridged the gap in financial access and provided individuals with the means to engage in secure and convenient financial transactions, irrespective of their geographical location. This expansion of MFS has played a significant role in empowering individuals. For instance, MFS facilitated the efficient and transparent delivery of humanitarian aid. Organisations such as the World Food Programme and the United Nations Refugee Agency used mobile money to reach more beneficiaries across multiple countries during the COVID-19 pandemic (GSMA, 2021). In 2020, there was a global surge in registered mobile money accounts, with a notable increase of 12.7%. This resulted in approximately 1.2 billion registered mobile

money accounts worldwide. Furthermore, by the end of 2020, about 310 MFS were operating in 96 countries (GSMA, 2021).

2.5.1 DFS terminologies, channels, and transactions

Since this study focuses on the role of DFS rather than a particular ICT-enabled financial service, it is crucial to describe different terminologies that fall under the DFS umbrella. These terminologies have overlapping attributes and are often used interchangeably in the fabric of our financial activities. However, they are not mutually exclusive; they all have unique characteristics and purposes that deserve explanation. DFS-mediated financial services can be accessed through different ICT-enabled channels. Moreover, DFS transactions can be grouped into two broad categories: financial and non-financial. In the following subsections, I provide details of DFS terminologies, channels, and types of transactions.

DFS terminologies

DFS, an umbrella term, comprises various financial services that rely on digital technologies. Typically, these financial services are labelled with the prefix ‘electronic’, ‘digital’ or ‘mobile’, such as digital banking, electronic funds transfer, digital payment, digital money, and MFS. As these financial technologies have overlapping characteristics, accurate definitions are not found in the literature. However, I attempt to describe these technologies as distinctly as possible using different relevant sources (e.g. research articles and reports) in the extant DFS literature.

Digital banking

Digital banking, also called cyber- or internet banking, is a financial service (perhaps the oldest term) the world witnessed after the emergence of Internet technology in the 1960s. Digital banking refers to the delivery of financial services by banking institutions using electronic and telecommunication networks (Giannakoudi, 1999). Customers need Internet access to use digital banking. Customers can access various financial services through digital banking, such as opening a bank account, checking account balances, transferring funds, and requesting debit/credit cards (Alliance for Financial Inclusion, 2016). Digital banking can be regarded as the precursor of other DFS technologies, as described in the following sections.

Electronic fund transfer

Electronic fund transfer is any movement of monetary value through an electronic terminal, computer, chip-enabled card, or mobile phone following the instruction or authorisation for the financial institution to debit or credit the customer's bank accounts (Alliance for Financial Inclusion, 2016; Meiring, 1998). These transfers include salary and wage payments, insurance premium payments, loan or mortgage payments, bill payments at point-of-sale terminals using debit or credit cards (Stevens, 2002) and social support payments (Dancey, 2013).

Digital payment

Based on the concept of electronic fund transfer, digital payment transfers money via electronic devices such as smartphones. This term is relatively new terminology for quick peer-to-peer or customer-to-business transactions. Typically, digital payment transactions are completed through a unique payment QR code with the help of the scanning feature of the mobile payment application. Therefore, the term is also often used interchangeably with mobile payment (or m-payment) (Alliance for Financial Inclusion, 2016; Pazarbasioglu et al., 2020).

Digital money

Digital money is the novel product of FinTech offered by banking and non-banking financial and payment service providers to allow consumers to perform financial transactions electronically (Giannakoudi, 1999). It is a monetary value electronically stored on digital devices, such as mobile phones or chip-enabled payment cards and can be converted into cash. Digital money is only issued when the service provider receives a value equal to the issued digital currency (Alliance for Financial Inclusion, 2016). In the literature, digital money is also referred to as electronic money, electronic cash, mobile money, or digital currency (Chida, Mambo, & Shizuya, 2001; Pazarbasioglu et al., 2020; Stevens, 2002). To access digital money, users do not need a bank account. However, mobile money users require a digital transactional application called a mobile wallet. Mobile wallets are mainly apps installed on mobile devices, such as smartphones. Customers can use mobile wallet applications to store digital money, for instance, to make in-store purchases, online payments, peer-to-peer transfers and so on (Espinosa-Vega et al., 2020).

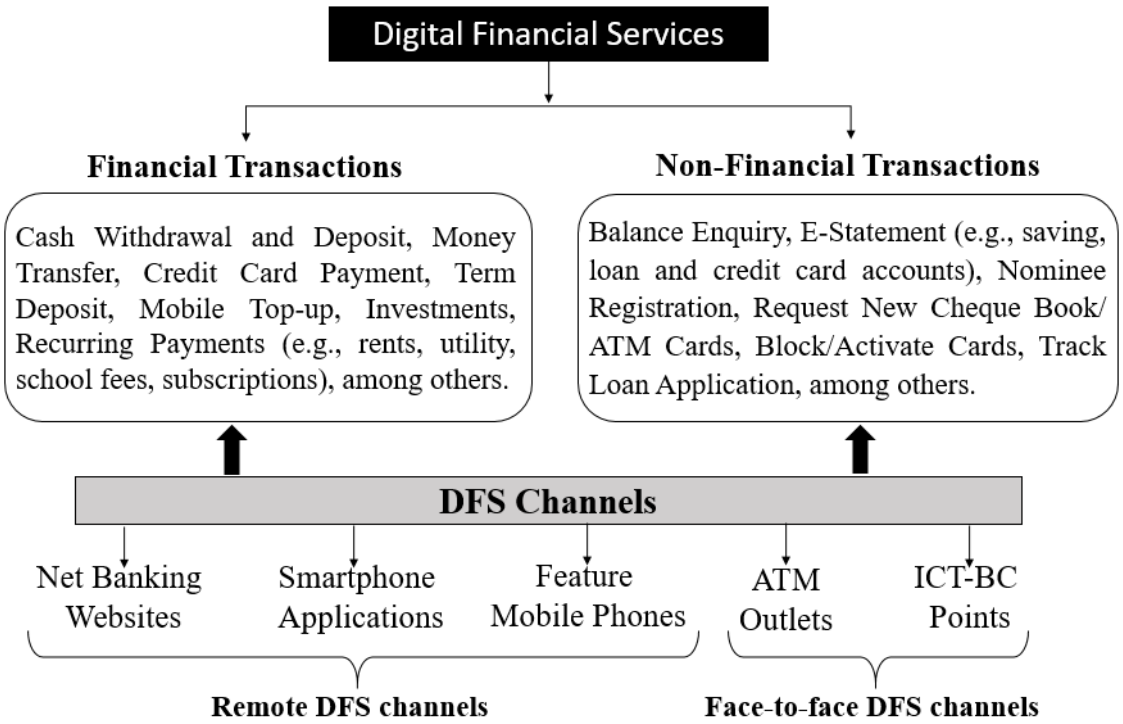
MFS

MFS (or mobile banking) can refer to the activities of performing transactional (e.g. transferring money) and non-transactional (e.g. viewing financial information) financial services offered by banking and non-banking financial institutions using mobile devices such as feature mobile phones or smartphones (Alliance for Financial Inclusion, 2016; Pazarbasioglu et al., 2020). Examples of MFS include bKash and M-PESA.

DFS transactions and channels

People use DFS to access and perform various transactions. These transactions can be grouped into financial and non-financial, as shown in Figure 2-1. While financial transactions involve the movement of finances or money from one end (i.e. payer) to another (i.e. payee), non-financial transactions do not involve any money movement. Financial transactions can include money transfers (e.g. mobile to mobile, bank to bank), payments (e.g. third parties, utility vendors, credit card, mobile top-ups), investment (e.g. fixed deposits, gold bond), loans (e.g. personal, home, business, education) and so on. Non-financial transactions, on the other hand, can include checking account balances, downloading e-statements, managing nominees, requesting a new chequebook, issuing debit or credit cards, blocking and activating cards, managing secret PINs, lodging complaints, etc.

Figure 2-1. DFS Transactions and Access Channels



DFS transactions can be accessed through different channels that constitute digital devices (e.g. laptops, mobile phones, ATM outlets, micro-ATMs, debit, or credit cards), digital transactional applications (e.g. banking websites and mobile financial applications), and ICT-trained personnel, such as bank employees or business correspondents (BC)[1]. These channels can be broadly classified as remote and face-to-face DFS channels. Accessing DFS through remote channels involves using digital devices, such as mobile phones (i.e. feature phones and smartphones), laptops, and tablets, by individual users without needing to visit any brick-and-mortar outlet. On the other hand, individuals can access DFS using face-to-face channels, which include bank branches, ATM outlets, Point-of-Sale terminals, and ICT-BC points. While remote channels require customers to use their personal credentials (e.g. user IDs, passwords, biometric impressions) on desired digital transactional applications to access DFS, face-to-face channels require customers to use their debit and credit cards. However, some face-to-face channels (e.g. BC points) allow DFS access through biometric IDs (Pazarbasioglu et al., 2020).

2.6 Past accounts of DFS research

The current literature extensively examines the multifaceted roles of DFS within the lives of people and communities worldwide, with a particular emphasis on contexts in developing countries. In the subsequent section, I elaborate on these dimensions identified during the literature review phase of this doctoral study.

2.6.1 DFS dimensions

The study of DFS is a multidimensional and ever-evolving domain that covers a broad spectrum of DFS-related concepts and developments. The literature review stage of this PhD study allows me to search the DFS literature and explore prevailing dimensions within the existing body of DFS research. Using these dimensions, I have developed the overarching research question to contribute to the ongoing DFS discourse and enrich our understanding of the opportunities and challenges DFS present in people's lives, including those living in Indian rural settings.

[1] BCs are individuals providing banking services under the supervision of the associated bank. Since these agents are equipped with small mobile devices (called micro-ATM) to perform banking transactions for their clients, they are also called ICT-BCs (Ujjawal, Champatiray, Sadhu, & Mendiratta, 2015).

The DFS dimensions, drawn from the extant literature, highlight several vital aspects of DFS. The literature focuses on the role of DFS in promoting FI, stressing how DFS can extend access to financial services to a broader population. Past research also concentrates on the drivers and obstacles influencing people's intentions to adopt and use these digital services. Another critical dimension explores the impact of DFS on individuals' financial management skills and abilities to manage their finances effectively and make informed decisions. The last dimension of the review concerns the potential of DFS to improve economic opportunities and growth. I will further elaborate on these dimensions in the following sections.

DFS for effective FI

FI pertains to the accessibility of affordable formal financial services to individuals across an economy, with a particular focus on those belonging to low-income segments (World Bank, 2018). The extant literature has recognised DFS as a vital means for expanding financial access and empowering underserved populations.

The review demonstrates the effectiveness of ICT-enabled banking models, such as mobile money agents or BCs, in reaching remote and underserved populations, reducing transaction costs, and improving financial access. For instance, in the case of Autazes (a county in the Brazilian Amazon region), people utilise the face-to-face DFS channels (i.e. ICT-BCs) as the primary way to access essential financial services (Diniz, Birochi, & Pozzebon, 2012). Similarly, this agent-based model in the Indian rural context reflects the significance of technology-driven banking in fostering the FI of remote and underserved populations (Ghosh, 2013). While the technology-oriented delivery of banking services plays a crucial role in linking the underserved with financial services, the success of these ICT banking models depends on various factors, including local infrastructure, the regulatory environment, and community involvement, as evidenced by the challenges faced in Marajó Island in Brazil (Joia & dos Santos, 2019). An innovative solution called Agência Barco for delivering financial services to the people of Marajó Island on a boat faces challenges that hinder the FI of this riverine population. These barriers include limited financial education, lack of ICT infrastructure, and the absence of local community involvement (Joia & dos Santos, 2019).

The literature also discussed the role of MFS and mobile money agents in promoting FI, concentrating on African countries, including Kenya, Uganda, Malawi, and Zambia. Past research suggests that MFS agents have achieved exceptional accessibility, reaching more than 75% of the population, including men and women living in these regions (Ouma, Odongo, & Were, 2017). This signifies the positive role of MFS, not only ensuring the reach of financial services to a significant portion of the population but also highlighting its role in addressing gender disparities in financial access.

In addition to the MFS's role in connecting a wide range and group of people to formal financial services, the review also emphasised MFS as a cost-effective driver of FI. Besides convenience, MFS reduced transaction costs by enabling people to save on transportation expenses and service charges. This benefit is particularly critical for alleviating some financial barricades for people living in remote areas (e.g. rural regions) where accessing traditional banking services can be more expensive and time-consuming (Munyegera & Matsumoto, 2018). The extant literature also offers valuable insights into critical considerations, such as socioeconomic, cultural, and regulatory factors, to assess the impact of MFS on FI (Lenka & Barik, 2018).

While past research within this area focuses on the impact of remote (e.g. MFS) and face-to-face (e.g. BC model) DFS channels on expanding financial services, the subsequent research centres on examining the factors that drive or hinder people's behaviour and attitudes in influencing the adoption of DFS.

DFS adoption and usage behaviour

User acceptance constitutes a significant theme in DFS research, with scholars seeking to comprehend the influencing factors that motivate or constrain individuals' interaction with DFS. Focusing mainly on the MFS, the extant research shows various aspects of user behaviour, such as user preferences, attitudes, and actions, as well as the influence of social, cultural, and economic factors on DFS adoption.

Existing DFS literature recognises that inbuilt features, such as convenience, affordability, and security, are significant and promising facilitators influencing people's acceptance of such advanced financial services, including underserved populations (Ouma et al., 2017). Besides convenience, safety and cost-effectiveness, factors such as performance expectancy, effort expectancy, social influence, price value, and facilitating

conditions also significantly shape individuals' perceptions towards DFS, specifically mobile-based financial services (e.g. bKash) (Rahman, Didarul Alam, & Taghizadeh, 2019). The research also highlighted the positive correlation between higher MFS usage behaviour and improved wellbeing outcomes for the underprivileged segment, further underscoring the role of these determinants as driving forces towards MFS usage and contribution to individuals' satisfaction and improved financial behaviours (Rahman, Didarul Alam, & Taghizadeh, 2019).

While MFS's inherent characteristics and contextual factors play a crucial part in their adoption, past research also reveals the critical role of mass-media communication technologies (e.g. television and radio advertisements) as sources of awareness in influencing MFS acceptance (Dziwornu, Anagba, & Aniapam, 2018). These observations indicate the cascading effect of ICTs on disseminating awareness that further shapes their adoption and usage. Moreover, the review also points to the role of social networks as influential driving forces in the diffusion of MFS information, impacting their adoption. Past research demonstrates the influential role of social networks in MFS acceptance and usage in the context of rural (Murendo, Wollni, De Brauw, & Mugabi, 2018) and urban population segments (Pal, Herath, De', & Rao, 2020).

While the extant literature highlights the role of MFS features, contextual conditions and mass-media ICTs as vital facilitators that encourage users to adopt and embrace DFS, past research also recognises the limiting factors that impede DFS adoption and usage.

The review of extant DFS literature underscores the significance of people's personal preferences. These preferences and practices contribute to the limited adoption and usage of DFS. For instance, the context representing the dynamics of microenterprise owners and their clients sheds light on how their mutual preferences can hinder the adoption of DFS, such as credit cards. The research emphasises that while small business owners appreciate DFS channels for business transactions, they welcome cash transactions from their existing customers (Donner and Tellez, 2008). Such cash-based preferences also seem prominent in the case of people working in the informal sector. Past research demonstrates that people in informal employment prefer to receive income payments in cash instead of digital payments in their bank or mobile accounts,

influencing DFS adoption and usage (De Koker & Jentzsch, 2013). These observations underline the complex interplay of priorities and practicality in adopting DFS in different contexts.

Besides people's varied preferences, perceived risk also creates barriers to MFS adoption. Perceived risk, particularly in the mobile and digital banking domain, is recognised as the subjective perception and assessment of potential uncertainties, vulnerabilities, and negative consequences that users face while engaging in financial transactions through mobile devices, applications, or platforms (Lu, Yang, Chau, & Cao, 2011). The extant research observes that mobile transaction failures and the risk of monetary losses due to cyber theft are critical in intensifying perceived risk, negatively shaping consumers' intentions towards MFS adoption (Kim, Zoo, Lee, & Kang, 2018; Li, Wang, Wangh, & Zhou, 2019; Lu et al., 2011; Pal et al., 2020).

Past DFS research also brings attention to social and cultural barriers limiting the adoption of DFS. For instance, the research shows the influence of power dynamics within rural households, where female members are restricted from accessing MFS (Morawczynski, 2009). In parallel to this study, such gender-specific pressures have been observed among female household members in Pakistan. Contributing further to the understanding of DFS adoption constraints, the research further suggests the significance of factors such as the permission to transact money, access to technological devices, and the agency for social and cultural mobility, all of which are crucial prerequisites for fully utilising DFS (Ibtasam, Razaq, Anwar, Mehmood, Shah, Webster, Kumar, & Anderson, 2018).

In addition to preferences, perceived risk, and gender issues, DFS literature highlights a lack of literacy, particularly financial knowledge, and awareness as critical limiting adoption factors (Akhter & Khalily, 2020). Research indicates that despite the widespread availability of ICT, including DFS, in developing countries (e.g. India), individuals lack the essential skills and confidence to adopt digital banking and financial applications. This uncertainty stems from limited access to general and financial education. Due to these challenges, individuals may feel uncomfortable and hesitant about using mobile devices and the Internet to access formal banking services (Chatterjee, 2020). Supplementing these findings, the extant research also underscores

the criticality of DFS awareness among users to utilise their true potential. The study identifies that a lack of awareness leads to hacking incidents, which ignites negative perceptions of DFS, ultimately influencing their adoption and usage. The research further suggests the significance of technological and financial education as a potential solution for raising DFS awareness among users (Agwu, 2021).

In addition to DFS's role in fostering FI and adoption motivators and barriers, the extant research also concentrates on DFS in shaping individuals' financial management skills, enabling them to make informed decisions about their finances, as the following section considers.

DFS for shaping financial management skills

The extant literature thoroughly discusses the consequences of DFS on people's financial skills and wellbeing. Research indicates that people utilise DFS's potential to enhance their abilities in managing finances by saving, monitoring, budgeting, and investing money.

The review highlights the role of mobile-based digital accounts, such as M-PESA, in enabling individuals to save money to meet their educational needs and manage unforeseen expenses like healthcare (Morawczynski, 2009). The research also determines the positive association between MFS and higher saving prospects. It suggests that the availability and utilisation of mobile phones for financial services are associated with higher probabilities of households saving money (Ouma et al., 2017). Mobile money also holds importance in the lives of rural individuals, positively impacting their savings and borrowings (Munyegera & Matsumoto, 2018).

However, contrary to this narrative, the research also challenges the notion that DFS positively impacts people's management of finances regardless of their knowledge and literacy levels. For instance, research focusing on M-PESA services in Kenya reveals that individuals with lower education levels and economic disadvantages are not benefiting proportionally from the positive effects of M-PESA. The lack of literacy holds them back from utilising quick remittances and the opportunity to save in formal accounts (Van Hove & Dubus, 2019).

Besides facilitating increased savings, MFS platforms impact people's dietary practices by enabling them to purchase a broader range of energy-rich foods (e.g. beans and fats), further enhancing their food consumption habits (Aker et al., 2016).

Research also focuses on MFS's use in facilitating the creation of sustainable income strategies. One example is the case of M-PESA use by farmers in Kenya, who are able to obtain small amounts of money from a wide array of M-PESA users (Morawczynski, 2009). This aspect represents the critical potential of MFS in expanding individuals' social networks and opportunities to secure funds.

The review of recent DFS research shows some contradictory findings on the gender-specific MFS perspective held by some past studies presented in the previous discussion (e.g. Ibtasam et al., 2018; Morawczynski, 2009). Research suggests that the positive consequence of MFS is empowering the female section of society by helping them improve their financial practices, such as savings and budget planning (Dorfleitner & Nguyen, 2022).

DFS-promoted financial management skills can further play a crucial role in fostering better economic opportunities and the development of individuals, for example, by improving confidence in formal financial products and services, allocating financial resources, and evaluating investment opportunities. The following research section focuses on DFS's role in energising economic wellbeing.

DFS for economic wellbeing

This part of the DFS literature review focuses on their enabling role in expanding individuals' economic opportunities by granting them access to diverse financial products and services that can further capacitate people to achieve economic growth. Realising economic wellbeing through DFS may involve individuals receiving opportunities to initiate small business ventures, accessing credit to meet their financial needs, and empowering them to invest in products and schemes that enhance their financial stability.

Extant research has heavily focused on the DFS-mediated economic growth of small- and medium-sized enterprises (SMEs). The study demonstrates a positive relationship between MFS use by SMEs and the acquisition of fixed assets (e.g. land or buildings) to

gain returns in the future. This correlation is attributed to several factors, including reduced transaction costs, increased access to funds, and improved creditworthiness resulting from using financial services through mobile phones (Islam, Muzi, & Meza, 2018).

The existing research also provides insights into the dynamics of mobile money use and its potential implications for micro-entrepreneurs, such as mobile money agents, who play a vital role in delivering financial services. It is argued that mobile money can stimulate entrepreneurship among mobile money agents by enabling them to open service outlets and recruit service tellers. This DFS-mediated franchising structure further contributes to agents' overall economic growth (Peša, 2018). Research also confirms MFS's (bKash) role not only in contributing to economic benefits but also in improving the subjective wellbeing of these micro-entrepreneurs. It is argued that bKash agents perceived it as an income-generating vehicle that enhances economic productivity and stability. Moreover, besides bringing financial benefits, using bKash ensures the subjective wellbeing of agents, as these services give them a purposeful life, social connections, and confidence, which further bring satisfaction and happiness to these agents (Rahman et al., 2019).

In addition to focusing on economic and subjective wellbeing from entrepreneurs' perspectives, extant knowledge exhibits DFS's impact on individuals, such as farmers. It is evident in past research that farmers who utilise DFS, particularly third-party digital platforms, instead of those provided by banks, experience a decrease in susceptibility, particularly regarding their ability to manage and mitigate risks (Wang & He, 2020). In the same vein, mobile money users perceived DFS (as a means) to expand their abilities by offering these individuals choices and the ability to fulfil different functionings. These functionings range from receiving remittances from family members living far from the hometown (mostly in urban areas) and managing funds independently to responding to emergencies, further contributing to their wellbeing (Adaba, Ayoung, & Abbott, 2019).

A review of recent DFS literature also displays their significant impact on the wellbeing of the older population. It is argued that the elderly individuals who utilise DFS have lower symptoms of depression, enhancing their subjective wellbeing. It is also observed

that the welfare improvements resulting from adopting digital finance modes are more prominent in rural areas than in urban areas (Lei, Shen, & Yang (2023).

The existing DFS research, as discussed in the previous sections, has heavily focused on DFS adoption behaviours and their role in providing convenience for investing money, accessing credit, and remittances. While this is valuable knowledge for understanding DFS's powerful attributes, such as accessibility, affordability, and speed (Ouma et al., 2017; Rahman et al., 2019), it is imperative to enhance this knowledge to understand the broader potential of DFS to expand people's capabilities to achieve socioeconomic goals (Arora & Rangaswamy, 2013; Donner & Tellez, 2008; Heeks, 2017), and to lead a higher quality of life (McGregor et al., 2009; Promphakping et al., 2021).

The critical dimensions of DFS discussed in the previous sections can be further categorised into foundational conditions and effectual repercussions (Sharma & Díaz Andrade, 2023). The foundational conditions include contextual conditions, technological skills, financial literacy, and consistent trust, which are recognised as the groundwork for using DFS and realising their benefits.

Past research highlights contextual factors as influential in DFS utilisation and outcomes, with culture significantly shaping individuals' DFS usage patterns (Ibtasam et al., 2018). However, cultural norms may both restrict and empower individuals regarding DFS access and financial autonomy (Aker et al., 2016; Morawczynski, 2009). Informal economies also impact DFS adoption. In contexts characterised by an informal work environment where cash is preferred over digital money, there will be little inclination to use DFS, even if they are widely available (De Koker & Jentzsch, 2013).

Technological skills and financial literacy are pivotal for DFS adoption and use (Agwu, 2021). Past research indicates that inadequacies in either not only hinder DFS benefits but may also lead to financial exclusion, particularly among underserved groups (Ibtasam et al., 2017). Furthermore, trust is fundamental to DFS use. Digital transactions are increasingly perceived as secure and reliable, developing trust in cashless payments (Munyegera & Matsumoto, 2018; Ouma et al., 2017). For instance, trust between the seller and the buyer is at the heart of any commercial exchange of a product or service for cash (Donner & Tellez, 2008). Literature shows that DFS provide businesses, mainly small and medium entrepreneurs, with a trustworthy environment that helps them

streamline their operational activities and enhance business sales and profits (Amegbe et al., 2017; Dziwornu et al., 2018). Furthermore, the literature suggests that trust in government-promoted DFS platforms increases people's inclination to use DFS, as is the case in India, as seen in India, where the government aims to enhance financial inclusion through DFS (Pal et al., 2020).

While contextual settings, digital skills, literacy and trust are essential for maximising DFS benefits, the effectual repercussions represent the tangible consequences of DFS use on different facets of the economic life of people, such as shaping financial behaviour, energising economic activities, and influencing financial inclusion (Sharma & Díaz Andrade, 2023). The extant literature unequivocally indicates that DFS significantly shape the financial behaviour of users, catering to their needs. For example, some utilise DFS for credit acquisition (Chatterjee, 2020), while others exhibit DFS use inclination for savings (Morawczynski, 2009; Van Hove & Dubus, 2019). Moreover, DFS users adapt their consumption patterns to suit personal circumstances (Aker et al., 2016), further showcasing DFS's potential to empower individuals in financial decision-making.

The evident correlation between DFS usage and the stimulation of economic activities, as portrayed in the literature, is equally promising. This stimulative impact manifests at various levels. For instance, micro-level evidence suggests that small and medium entrepreneurs utilising DFS witness business growth (Islam et al., 2018), while macro-level insights indicate that increased DFS penetration positively affects developing economies (Asongu & Nwachukwu, 2019). The predominant literature on DFS portrays an optimistic perspective regarding their role in fostering financial inclusion by providing accessible and affordable financial services, especially to unprivileged communities (Chatterjee, 2020; Lenka & Barik, 2018).

Informed by past DFS research and having established the potential of DFS in helping individuals achieve their life goals, I am now focusing on the theoretical perspectives that provide a foundational structure to support this exploration.

2.7 Theoretical perspectives

Understanding extant theories plays an important role in providing an interpretive researcher with an initial theoretical basis or a point of departure to guide their

empirical research journey (Walsham, 1995; 2006). Theoretical perspectives provide a structure to analyse empirical data and interpret the findings. This structure contains previously acknowledged concepts and theories that help social science researchers make sense of empirical observations and ideas that emerged from those observations (Kivunja, 2018). As there is no one-size-fits-all theory in social research, social science researchers, including those with an interpretive stance, must preserve some degree of openness to the empirical data and initial theoretical assumptions (Walsham, 1995) while being open to multidisciplinary concepts and theories to understand their research field and insights into their observations (Tavory & Timmermans, 2014).

As informed by the DFS literature discussed in the previous section, the majority of previous research has examined DFS in different contexts from the lens of acceptance theories (Davis, 1989; Venkatesh, Morris, Davis, & Davis, 2003). Since acceptance theories are mainly concerned with technological innovation and provide an analytical lens to gain insights about a user's intention to use ICTs (i.e. DFS in this study), they do not challenge the implementation of these technologies and constrain our understanding of their use in the context of an individual's life goals.

This study considers DFS as an umbrella of tools that empowers individuals to access essential financial products, services, and information, which can be further utilised to expand economic options and attain their diverse life goals. This perspective aligns with Michael et al. (2019), who emphasise the role of ICTs in empowering individuals to communicate and act efficiently, ultimately helping them attain their life goals. Recognising ICT's (i.e. DFS in this study) role as a critical resource in individuals' lives, this research considers Sen's (1993, 1999) CA framework as a valuable and 'insightful' framework (Walsham, 2006) for understanding how DFS contribute to the realisation of life goals (Thapa & Sæbø, 2014; Robeyns, 2006).

However, in selecting other critical theoretical concepts for understanding how people engage with DFS within their specific contexts, I will remain open to adjustments as I progress through the analysis stages (as explained in the following chapter) and engage with relevant literature (Walsham, 2006).

2.7.1 The capability approach

The capability approach (CA) is a holistic framework for evaluating individuals' well-being, social arrangements, and societal and development policies. It is applied in various fields, including development studies, political and social philosophies, and welfare economics (Robeyns, 2005). The CA framework is built on two core normative principles. First is the freedom to realise well-being, and the second is that these freedoms are to be recognised as people's capabilities (i.e. actual opportunities) to do things and achieve a state of being they have good reasons to value (Sen, 1993). In other words, CA provides a framework to assess what individuals can achieve and experience in their lives and how to eliminate barriers that restrict their freedom to live the style of life they value (Robeyns, 2005). Its essence lies in its emphasis on the moral importance of individuals' capacity to lead lives that are meaningful to them (Nussbaum & Sen, 1993). The concept of leading a meaningful life pertains to a person's ability to engage in a valuable range of activities and experiences – 'beings and doings' (Nussbaum & Sen,1993; Magesa, Michael, & Ko, 2020). The fundamental attribute of this idea centres on individuals' practical capacity to both engage in specific actions and embody certain qualities, essentially focusing on their capabilities (Robeyns, 2005, 2006).

The essential components of the CA comprise capabilities and functionings. The functionings are the advantageous states the individuals may appreciate achieving for their wellbeing, such as being well-nourished, healthy, housed, educated, participating in social activities, and so on. On the other hand, capabilities refer to the valuable opportunities or set of entitlements (among other things) from which individuals can choose to lead a life in a way they value (Robeyns, 2006). In other words, capabilities are "the alternative combinations of functionings that are feasible" for individuals to achieve various other valuable functionings (Alkire, 2010). However, Sen (1999) argues that having these capabilities is not the ultimate end of human development; instead, they should also be recognised as important means because achieving a specific end has both intrinsic and instrumental value. For example, education is a valuable functioning for an individual, but it also helps them achieve other valued ends, such as educating the next generation (Alkire, 2010). Accordingly, Sen (1999) describes five instrumental capabilities: political liberties (e.g. democracy), social opportunities (e.g. to be educated or have health care), a guarantee of transparency (e.g. access to trustworthy

information), protective security (e.g. social security), and the one related to this study, economic facilities (access and use of economic resources) (Alkire, 2010). Informed by fundamental concepts of CA, DFS can be seen as resources (or means) individuals can use to access the financial services ecosystem to achieve their life goals (Michael et al., 2019).

In the past, scholars have applied the CA to ICT4D studies. For instance, Garnham (1997) highlights how electronic media broadcasting, such as radio and TV programs, can facilitate various functionings, contributing to a sense of belonging, political participation, access to information, and more. Sen (2010) also acknowledges the positive impact of mobile phones on human capabilities, stating that they enhance freedom for individuals and others globally. The focus is on understanding how ICT, like mobile phones, can improve users' overall wellbeing and efficiency in using such technologies.

Toboso (2010) highlights a common practice in ICT: products and services are designed based on hypothetical norms, leading to barriers, even in Internet technologies. Toboso advocates for a focus on 'universal design' to empower all individuals and ensure inclusive technology solutions. Kleine (2010, 2013) acknowledges the potential of ICT to give people more choices and control over their lives. She suggests analysing ICT projects using a framework based on a CA to ensure that ICTs truly empower individuals and broaden their options. Kleine supports her ideas by examining the telecentre project in Chile, aiming to ensure that ICTs genuinely empower individuals and improve their wellbeing. Another critical study by Grunfeld (2014) of an ICT4D project in Cambodia that introduced ICT through telecentres and village hubs emphasises the importance of a long-term perspective in assessing ICT4D projects because they require time to establish a positive cycle. In this cycle, individuals acquire essential capabilities to effectively use ICT, which, in turn, strengthens their empowerment and ability to sustain their livelihoods successfully. However, research also suggests that ICT4D initiatives may not enhance recipients' political liberties and could have counterproductive effects due to underlying political assumptions (Díaz Andrade & Urquhart, 2012).

For digital financial technologies, past research has applied CA to examine the role of DFS (e.g. mobile phone technology and mobile money) in improving health care and

wellbeing in the context of developing countries. Research shows that mobile phones enhance the capabilities of pregnant women, enabling them to access healthcare emergency services and improve health literacy (Dasuki & Zamani, 2019). Research also recognises mobile money use for empowering individuals with increased access to financial services and agency, leading to positive wellbeing outcomes in employment, health, and education (Adaba et al., 2019).

As informed by the extant research, CA offers a valuable evaluative framework for understanding ICT's role in enhancing individuals' choices to effectively realise their diverse functionings. While the foundational CA framework highlights the fundamental capabilities required for an individual to lead a good quality life, it does not fully clarify the specific nature and extent of the functionings individuals can attain by utilising means or resources (Deneulin, 2002). In a broader sense, these functionings can be referred to as 'life goals,' representing desirable states individuals aspire to achieve in their span of life through different means or resources (Hennecke & Brandstätter, 2017).

Life goals

Life goals, as defined by Promphakping et al. (2021), represent "the desirable state of being, which individuals can aspire to lead their life" (p. 952). These life goals include 'good health,' 'nourishment,' financial autonomy,' 'protective housing,' 'education,' and 'awareness' (McGregor, Camfield, & Woodcock, 2009; Promphakping et al., 2021). Moreover, life goals impart a sense of purpose, fostering meaningful and quality life (Brdar et al., 2009; Klinger, 1977).

These life goals are further categorised into two fundamental types: extrinsic and intrinsic. While extrinsic goals emphasise individualistic purposes, intrinsic pursuits represent societal and collective welfare motives (Schmuck, Kasser, & Ryan, 2000; Schmuck & Sheldon, 2001). Furthermore, life goals centred around extrinsic values are linked to tangible benefits for individuals, including aspects such as access to valuable assets, modern conveniences, employment opportunities, and essential services, among other considerations (Brdar et al., 2009; Schmuck & Sheldon, 2001). Intrinsically motivated life goals, on the other hand, revolve around inherently fulfilling aspirations, such as emotional closeness with others and a commitment to supporting fellow members within close social networks or the community at large (Schmuck & Sheldon,

2001). Since people spend most of their time with others, such as family members, relatives, colleagues, or even professional rivals, these social connections may provide people with prospects to achieve their life goals (Fitzsimons & Shah, 2008).

Moreover, achievement of life goals can significantly impact people's wellbeing, as well as their social environment. Literature suggests that individuals pursuing intrinsic life goals experience greater satisfaction, self-actualisation, and confidence than those striving for extrinsic goals (Hennecke & Brandstätter, 2017; Kasser, Ryan, Couchman, & Sheldon, 2004; Schmuck et al., 2000). Life goals are also pivotal in shaping individuals' social environments. They act as a filter for how people perceive the world around them. They make people focus on essential things and help them recognise and make sense of diverse situations and opportunities (Fitzsimons & Shah, 2008). Researchers also argue that achieving life goals positively influences an individual's behaviour, personality (Hudson & Roberts, 2014), and work performance (Lee et al., 1989).

This conceptual understanding of life goals facilitates the application of the CA framework in evaluating individuals' DFS use for achieving their diverse life goals to lead a quality life within the context of rural settings.

While the CA focuses primarily on individuals' freedoms and the realisation of personal life goals, it also acknowledges the importance of social relationships and society in shaping capabilities and achievement of goals (Alkire, 2008). For example, Nussbaum (2000) sheds light on this perspective by underscoring the vital role of social 'affiliations' as a fundamental component of the capabilities necessary for individuals to lead a meaningful and dignified life, with her research highlighting:

> "being able to live with and toward others, to recognise and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another and to have compassion for that situation" (Nussbaum, 2000, p. 79).

Stewart (2005) also advocates the significance of considering the role of community within the CA framework. She argues that communities can substantially influence an individual's life by improving choices and efficiency by sharing resources, ultimately resulting in better access to education and economic opportunities.

Drawing upon social associations within a CA framework perspective, past research acknowledges the close link between CA and people's operationalisation of SC for their growth and wellbeing (Bertin & Sirven, 2006; Ibrahim, 2006). This perspective asserts that when individuals receive assistance or support from their social network during times of need, it represents activating their 'right' or an endowment they have preserved within their social connections (Bertin & Sirven, 2006). As Sen (1981) argued, while giving an example of a food shortage that can occur even when there is sufficient food available, individuals who suffer in such challenging conditions are those who are unable to convert their resources (or endowments) into food. This failure often happens when these individuals have inadequate resources, such as physical, financial, human, and social capital. These resources can expand individuals' opportunities, enabling them to exercise their entitlements (or capabilities) to lead a quality life (Bertin & Sirven, 2006). This perspective shows that an individual's ability to exercise his or her capabilities to achieve diverse life goals can be a collective effort rather than solely an individual endeavour (Ibrahim, 2006).

In this sense, both the CA framework and SC converge by acknowledging the significance of social networks, affiliations, and interactions in helping individuals to access resources from other members of their social circles to realise their valued functionings or life goals. With this crucial link in mind, I will devote the subsequent sections to discussing the concept of SC and its role in societal contexts. Additionally, I will discuss some relevant academic contributions, including those from the domain of ICT research that have embraced and scrutinised the dynamics of social capital.

2.7.2 Social capital

In this section, I will first explain the fundamental economic concept of capital to set the stage for a comprehensive understanding of SC and its operationalisation.

The most common and initial concept of capital in economics can be referred to as the surplus value (i.e. in monetary form) gained by business owners who control production. This value arises from exchanges between creating and consuming goods and services, where workers receive wages for their labour. This monetary gain results from an investment process that generates and captures surplus value. This investment and the resulting surplus value aim to reproduce the investment process and gain more value,

reflecting an exploitative dynamic between dominant and subordinate classes. This view is called the classical capital theory (Lin, 1999).

The concept of capital is not limited to capturing surplus money to create tangible material and generate more wealth. Another important form of capital is recognised as cultural capital, which arises from various cultural elements, such as historic structures and artistic creations, possessing vital economic attributes (Throsby, 1999). Cultural capital also includes knowledge, skills, and behaviours that cannot be learned in a straight line but something that becomes a part of us with time and is affected by the communities we are part of and the social groups we belong to (Bourdieu, 1986). According to Bourdieu (1986), cultural capital takes three forms: embodied state representing long-lasting habits deeply ingrained in a person's mind and body through their upbringing and experiences; objectified state signifying tangible goods, such as "pictures, books, dictionaries, instruments, machines, etc." (p. 243); and in institutionalised state in the form of qualifications or academic credentials that give unique properties to the cultural capital they endorse.

Although capital theories evolved over time, the essential elements of capital from the classical theory remained unchanged. An example is the human capital theory, led by economists Johnson in 1960, Schultz in 1961, and Becker in 1964, suggesting that both individuals and society gain economic advantages through investments made in people. The human capital theory views capital as an investment, such as in education or skills, with the expectation of specific gains like earnings capital (Lin, 1999; Sweetland, 1996).

The concept of human capital aimed to provide economists with a means to evaluate the worth of workers' labouring skills and abilities. Economists regarded labour like any other production component, with its efficiency shaped by investments in education and healthcare. This viewpoint on human capital was primarily economic, tied to straightforward input-output relationships. As explained earlier, Bourdieu's (1986) concept of embodied cultural capital can be recognised as the closest corresponding concept to human capital, which refers to the internalised cultural practices, acquired knowledge, and behaviours cultivated by exposure to familial and other environmental influences. In this sense, human capital can be regarded as a component of cultural capital because it is shaped by the impact of cultural capital invested by families. This

influence affects an individual's outcomes in terms of habits, knowledge, skills, and even perceptions of the world, which, in turn, can directly affect their life goals, such as career opportunities, employability or economic activities. These theories depart from the classical view that individuals, irrespective of class divisions, can now invest to gain their own forms of capital, like skills, knowledge, and social resources. Lin (1999) referred to these modern concepts of capital, including social capital, as neo-capitalist theories.

Like many other sociological concepts, the concept of SC has found its way into everyday language. It is regarded as a versatile remedy to various issues affecting communities and societies. Social capital's novelty lies in highlighting the positive outcomes of sociability and integrating them with the broader notion of non-economic capital and resources (Portes, 1998).

The genesis and subsequent expansion of the concept of SC can be ascribed to its key proponents. Bourdieu can be credited as the initial promoter of the idea of SC and defined it as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition" (Bourdieu 1986, p. 248). In other words, SC refers to the combined resources, both existing and potential, that come from being part of strong and lasting connections with other people who know and recognise each other. Bourdieu emphasises the advantages individuals gain by being part of groups and intentionally fostering social relationships to create this resource, asserting that these advantages form the foundation of the unity that sustains such groups (Bourdieu, 1986; Portes, 1998). This implies that "Social networks are not a natural given and must be constructed through investment strategies oriented to the institutionalisation of group relations, usable as a reliable source of other benefits" (Portes, 1998, p. 3). In other words, social connections result from intentional or unintentional investment strategies to form and maintain casual or significant relationships that offer short- or long-term benefits (Bourdieu, 1986). This explanation divides SC into two parts: the connection with others that allows individuals to access (or, in fact, claim) their resources and the quantity and quality of those resources (Portes, 1998). Moreover, Bourdieu emphasises that SC allows individuals to directly access economic resources like credits, financial advice, or information (Portes, 1998).

Fukuyama (1995) emphasised the importance of SC as a critical element for fostering economic growth and development through establishing trust. This perspective is rooted in the idea that trust among individuals reduces transaction costs, ultimately aiding economic progress.

In contrast to the economic implications of social capital, Coleman emphasises the broader significance of this concept by illustrating its capacity to attain economic and non-economic objectives. From Coleman's (1988) view:

> "Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence. … Unlike other forms of capital, social capital inheres in the structure of relations between actors and among actors" (p. S98).

This is evident through his usage of diverse examples, such as the communal norm of adults caring for unattended children, which exemplifies the multifaceted nature of SC and its contributions beyond purely economic dimensions (Coleman, 1988). This implies that SC contributes to productivity by influencing interactions among people, thus assisting them in achieving socio-economic goals. For example, a group with solid trust and mutual confidence can help each other to accomplish socio-economic goals more than a similar group without such trust and reliability (Coleman, 1988).

Following the contributions of Bourdieu and Coleman, other scholars have also explained the notion of social capital. Baker defines SC as "a resource that actors derive from specific social structures and then use to pursue their interests; it is created by changes in the relationship among actors" (Baker 1990, p. 619). According to Burt (1992), SC comprises "friends, colleagues, and more general contacts through whom you receive opportunities [e.g. job promotions, participation in significant projects] to use your financial and human capital" (p. 9). Putnam (1995) refers to SC as "features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (p. 67).

Moreover, SC enables individuals to utilise their social resources to access additional resources through the networks and connections that people have. For instance, individuals can obtain valuable information and opportunities by leveraging "friends-of-friends" (Boissevain, 1979, p. 393) or weak ties (Granovetter, 1973) within their

networks. These social ties (either strong or weak) can create environments conducive to nurturing and leveraging SC effectively (Coleman, 1988).

For the purpose of this research, I embrace the definitions of Nahapiet and Ghoshal (1998), who define SC as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (p. 243), as well as Coleman's (1988) "… social capital is productive, making possible the achievement of certain ends [life goals in the context of this study] that would not be attainable in its absence…" (p. S98).

While Nahapiet and Ghoshal (1998) emphasise SC as resources held by community members or social networks that can be leveraged by individual members of the group whenever needed, Coleman's (1998) perspective exemplifies the significance of SC in achieving diverse pursuits on one's life. Collectively, these definitions underscore the vital role of social ties and resources present in these ties in assisting individuals to achieve their life goals, which may be difficult or costly to achieve otherwise. This close connection between these two perspectives provides a logical basis for embracing these definitions to guide this study.

While SC is often highlighted for its positive outcomes, it is crucial to recognise that the exact mechanisms can lead to negative consequences. This helps avoid overly optimistic views and maintains rigorous sociological analysis. For instance, Bourdieu's conception of SC is circular as it points out that rich people stay rich by using their relationships with other rich people. Bourdieu's way of using the SC concept mostly sees negatives for those oppressed and positives for those privileged (Field, 2016). As Edwards and Foley (1997) noted, SC can worsen inequality as not everyone has equal access to networks. While everyone can use connections to their advantage, some people's relationships are more valuable than others. Big groups with power can try to stop others from making social connections or even break the social bonds of less powerful people. For example, bosses team up to weaken workers' unions (Schulman & Anderson, 1999).

According to Putnam, we benefit from social connections, but these connections can also have adverse effects. Paccagnella and Sestito (2014) observed that cheating in schools increased when teachers and students were from the same area and had similar backgrounds, revealing that social connections negatively encourage cheating practices

in schools. Well-educated people often pass networking skills to their kids, which can keep inequality going through the generations (Crozier, Reay, & James, 2011). Given these downsides, I refrain from adopting a one-sided position regarding SC in this study and remain open to recognising any possible adverse consequences that could arise during the analysis.

Social capital dimensions

As Putnam (1995) argues, SC is regarded as a multifaceted concept, encircling various resources linked to relationships and incorporating aspects such as mutual reciprocity, resolving challenges in collective action and expanding social identities. In addressing SC intricacy, Nahapiet and Ghoshal (1998) offer an integrated view of different facets of SC and label them under three dimensions: structural, relational, and cognitive. These dimensions advance insights into how resources are formed and exchanged within networks, a perspective further emphasised by Vaidya and Sharma (2022).

The structural dimension of SC reflects the arrangement of people and their networks (Claridge, 2020; Li, Wang, Westlund, & Liu, 2015). The crucial aspect of this dimension involves whether there are connections or ties between different individuals (i.e. who they know), as well as the configuration of these connections, often measured by factors such as density (how closely individuals are interconnected), connectivity (familial connections, relatives, or friendships), and hierarchy (e.g. older and younger DFS users). Another element of this dimension is the notion of appropriable organisation, which means networks formed for one purpose can be used for something else. This dimension can be regarded as the most crucial, as without network connections, individuals would lack access to existing and potential resources embedded within relationships (Burt, 2000; Coleman, 1988).

The relational dimension delineates the characteristics and qualities of individuals' connections cultivated over past interactions (Claridge, 2020). This concept concentrates on individuals' relationships involving trust, obligations, expectations (reciprocity), and reputation, which impact their conduct (Putnam, 2000; Nahapiet & Ghoshal,1998). The primary role of this relational facet of SC is to enable individual endeavours within the framework, and this relational capital stands as a significant resource that confers advantages upon both the community and its members (Coleman,

1990). Relational capital also enables individuals to be willing to extend aid to familiar members and strangers (Wasko and Faraj, 2005).

The cognitive dimension of SC is tied to the shared interpretations that exist in individuals' mental meaning-making system, such as shared language, cultural norms, and a sense of collective goals, as well as shaped through interactions with others (Claridge, 2020; Nahapiet & Ghoshal,1998). In addition to the presence of a common language, stories are also regarded as potent tools within communities for generating and sharing knowledge (Nahapiet & Ghoshal,1998). This facet is akin to sociological concepts like 'habitus' – shared ideas and habits that influence how we understand and interact with the world around us, contributing to the social construction of reality (Bourdieu, 1977; 1986).

Extant research suggests that both tacit and explicit knowledge sharing with teams or members, mediated by SC dimensions and extrinsic motivation, support innovation (Hu & Randel, 2014). Research also points towards reciprocity and enjoyment as critical factors in promoting tacit and explicit knowledge sharing among employees (Hau, Kim, Lee, & Kim, 2013). This observation indicates that organisations should focus on building ties and creating SC within and among members rather than just investing in extrinsic rewards in their efforts towards innovation and growth.

SC effects are also examined in informal settings. The past research offers insights into how small business owners residing in deprived areas - characterised by issues related to poverty, unemployment, limited services, crime, and socially excluded people - utilise structural, relational, and cognitive SC to acquire resources essential to sustain their businesses. Research demonstrates that large and close-knit networks are crucial in resource acquisition. Moreover, while trust and reciprocity among individuals play significant roles in accessing resources, communicative competence (e.g. narrative storytelling) is insignificant in acquiring resources from a network (Lee, Tuselmann, Jayawarna, & Rouse, 2019).

SC and its dimensions have also been adopted by researchers of information systems and technologies who have recognised a significant link between two seemingly separate domains: information technology and social capital. This connection has arisen to fulfil the requirement for integrating a social viewpoint into information technology

research. This fusion holds substantial importance as it acknowledges the role of social networks and their embedded resources in shaping technological systems (Huysman & Wulf, 2004). Considering the influence of social capital, this interdisciplinary approach enhances our understanding of how members of society utilise technology (e.g. DFS) to contribute to developing a collaborative support environment.

Information technology research examines why individuals share knowledge in electronic practice networks despite no immediate benefits. The research emphasises the role of extrinsic motivation. Individuals share their experiences and knowledge because they believe the sharing act helps them enhance their reputation, which further positively influences their professional activities. In contrast, the intrinsic factor (i.e. enjoyment) is a weak predictor of such knowledge contribution practice (Wasko & Faraj, 2005).

The past IS research adopted the SC perspective to explore the sense of belonging among members of virtual communities (VCs) and its effects on their intention to share knowledge in VC. Research suggests that while familiarity (structural), similarity (cognitive) and trust (relational) have a significant impact on both receiving and supplying knowledge, a sense of belonging is a mediating factor between VC members' intention to contribute knowledge and SC dimensions (Zhao, Lu, Wang, Chau, & Zhang, 2012).

Extant literature also examines the Internet-mediated fundraising concept known as web crowdfunding, often adopted by entrepreneurs with limited monetary capital to execute their business ideas. The observations demonstrate the significant effect of all three SC dimensions on crowdfunding performance. Research shows that entrepreneurs' structural ties help raise funds for their business ideas. In addition, reciprocity and shared meaning (e.g. a detailed narrative of a business idea) are also effective predictors to attract sponsors to invest in a business project (Zheng, Li, Wu, & Xu, 2014).

Recent research examines how SC and interaction theories impact knowledge sharing and customer purchase intentions on e-commerce sites. The research suggests significant connections between social capital, social interaction, and knowledge

sharing. The study also highlights the mediating role of knowledge sharing in influencing customer purchase intentions (Ghahtarani, Sheikhmohammady, & Rostami, 2020).

While the extant research draws on SC to understand how individuals use structural, cognitive, and relational dimensions inherent in their formal networks to exchange resources to support each other, there is not much attention paid to the functions of these dimensions within informal networks, such as rural communities. Therefore, in this study, I borrow these concepts to enhance our understanding of these dimensions' role in the informal networks of individuals living in Indian rural regions to achieve their life goals by exchanging their DFS resources.

2.8 Chapter conclusion

This chapter has explored different perspectives on human development and the role of ICT in shaping development initiatives. It also offered a conceptual understanding of DFS, highlighting its terminologies, channels, transaction types and the evolution path. This chapter provides a literature review of the DFS research. This chapter also offers the foundational theoretical concepts surrounding the CA framework and social capital, which are considered vital for understanding how DFS contributes to realising people’s life goals.

Chapter 3 Research Methodology

3.1 Chapter outline

Within this chapter, I provide the philosophical underpinnings that guide my approach and the perspective through which I view the world. Delving into the research design, I outline the data collection process and its fundamental components. This covers an exposition of the chosen research sites, their important demographic accounts, the participant selection technique, and participant details. Moreover, I shed light on the different sources I used to gather data and my dual roles as the researcher during fieldwork. Further into the chapter, I explain the data analysis stages employed in this study. Here, I describe the inductive and abductive methods to generate theoretical insights. This method facilitated my uncovering meaningful and surprising insights from the data and weaving them into a story that aligns with the research's focus. Finally, I present the ethical considerations as a cornerstone of responsible research. These considerations echo the commitment to respect, integrity, and responsible conduct that guide every step of this doctoral journey.

3.2 Introduction

The research structure consists of three fundamental guiding principles that assist researchers in organising and executing research. These principles include the researcher's underlying ontological and epistemological assumptions, research methodology or design (procedures of inquiry), and research methods (sampling, data collection, analysis, and ethical considerations) (Creswell, 2014; Williamson & Johanson, 2017). In the following sections, I present my philosophical beliefs, research design considerations and critical components of the research method, along with justifications for their selection and use within this doctoral study.

3.2.1 Philosophical perspective

Commencing my voyage as a researcher, I must expound upon the fundamental principles underpinning my ontological perspective – of the fundamental nature of reality – as well as my epistemological stance – concerning how knowledge is acquired. This philosophical framework is the bedrock upon which I have formulated strategies for

capturing the essence of reality, orchestrating, executing fieldwork endeavours, and evaluating and articulating the acquired knowledge (Creswell, 2014; Crotty, 1998).

Ontological and epistemological assumptions

My ontological stance regarding "how things really are and how things really work" (Guba & Lincoln, 1994, p. 108) is rooted in the perspective that the construction of social reality takes place in a localised and explicit manner "by humans through their action and interaction" (Orlikowski & Baroudi, 1991, p. 14), and is shaped by individuals' perceptions of it (Neuman, 2014). Thus, my research inquiry aims to unfold reality intertwined with human interaction, experience, and interpretation rather than an external reality detached from these factors (Walsham, 1995).

The epistemological presumption must align with the researcher's ontological conviction. The epistemological stance should address, "What is the nature of the relationship between the knower or would-be knower and what can be known?" (Guba & Lincoln, 1994, p. 108). Given my belief in the subjectivity of reality (Orlikowski & Baroudi, 1991; Walsham, 1995), my epistemological perspective asserts that "understanding social reality requires understanding how practices and meanings are formed and informed by the language and tacit norms shared by humans working towards some shared goal" (Orlikowski & Baroudi, 1991, p. 14) and that "findings are literally created as the investigation proceeds" (Guba & Lincoln, 1994, p. 111).

Consequently, considering my ontological and epistemological outlooks and the research problem, an interpretive perspective is recognised as the underlying philosophical foundation of this research. In line with my philosophical stance and overarching research question, I chose to engage in conversations with the rural residents, allowing them to share their perspectives while living in their own contextual settings and environments.

Interpretive perspective

The interpretive researcher's goal is to fathom "how members of a social group, through their participation in social processes, enact their particular realities and endow them with meaning and to show how these meanings, beliefs and intentions of the members help to constitute their social action" (Orlikowski & Baroudi, 1991, p. 13). With this doctoral research endeavour centred on exploring and comprehending how individuals

within our rural society leverage DFS to attain diverse life goals, I espouse an interpretive perspective.

In the past, most IS research was informed through the positivist perspective. However, as inferred by several scholars (Díaz Andrade, 2007; Garcia & Quek, 1997; Myers & Walsham, 1998; Orlikowski & Baroudi, 1991; Walsham, 1995), the interpretive approach provides a more nuanced explanation for research problems dealing with social phenomena and requires complex thinking to produce reliable and meaningful conclusions. Thus, as an interpretivist, I will provide my interpretations "backed with quality arguments rather than statistical exactness, precision or confidence" (Garcia & Quek, 1997, p. 459).

3.3 Research design

Considering the overarching research question and my foundational philosophical paradigm, I embrace the qualitative method of inquiry (Creswell, 2014; Crotty, 1998). The aim of this study is to expand knowledge about how individuals make use of DFS to realise their life goals. This will be accomplished by collecting and analysing their perspectives and interpretations concerning DFS, formulated through personal experiences. Notably, the emphasis lies not on furnishing a quantitative portrayal or statistical significance of trends or attitudes about people's DFS usage but rather on the qualitative elucidation of their constructed meanings concerning DFS.

Using DFS can be a crucial part of an individual's life. While the use of DFS revolves around individuals' financial practices, their role extends beyond mere financial transaction tools. DFS can contribute to achieving life goals, emphasising the broader social and non-financial dimensions of individuals' lives.

To comprehensively explore the intricate interplay between DFS utilisation and the realisation of life goals, a comprehensive approach is imperative. This involves engaging in intimate, face-to-face dialogues with research participants, enabling a profound understanding of their financial practices, cultural norms, and values. These nuanced insights can be best obtained through careful observation within their original rural settings, which are intrinsic to the genuine context of their experiences. In pursuit of this objective, I borrowed "ethnographic techniques" (Wolcott, 1999, p. 42) in the fieldwork

to guide this qualitative research. Specifically, I employed participant observation, semi-structured interviews, and extended engagement with the participants in their original rural settings. Through participant observation, I immersed myself in observing their routine life activities. This technique allowed me to capture first-hand insights into individuals' social and financial practices. Furthermore, I conducted semi-structured interviews, which helped me conduct open conversations with the research participants to understand their lived experiences and perceptions of DFS use and the rural banking environment. In addition, I built trust and rapport with locals by engaging myself in their routine life activities (e.g. going to farms, helping with their daily chores, and sharing my life experiences with them, especially younger members).

Subsequent sections provide more details on these techniques adopted during the three-month fieldwork from September 2021 to November 2021. This fieldwork was conducted within the rural communities of UP state, India.

3.3.1 Data collection process

The data collection process was designed to unearth the fundamental themes that underlie the interplay between DFS usage and the achievement of the life goals of people living in rural areas of Indian villages. During the data collection activity, I paid close attention to subtle clues to enable me to uncover this complex issue and reveal its dynamics.

Given that this research entails the engagement of human participants to solicit their viewpoints, encounters, and emotions, securing ethical approval was duly executed under the purview of the Auckland University of Technology Ethics Committee (AUTEC) before initiating the fieldwork for this study. The rigorous ethical directives formulated by AUTEC, along with corresponding protocols, were meticulously adhered to during the data acquisition and subsequent analysis phases within this research undertaking. The authorisation for the initiation of fieldwork was duly granted by AUTEC on 18th May 2021, extending for three years under reference number 20/386. Appendix A contains a copy of the official ethics approval letter. Other documents encompassing participant information sheets (for rural individuals and bank employees) are annexed in Appendix B. Interview consent forms (prepared in English and Hindi) are also annexed in Appendix C.

The subsequent sections present insights into the data collection sites, locales of the fieldwork, the technique employed for sampling and selecting research participants, the diverse data sources, and my multifaceted role as the researcher (Jimenez, Abbott, & Dasuki, 2022).

Fieldwork and research sites

The geographical focus of this doctoral research covers the rural landscapes[2] within UP in India, situated in the north-central part of the country, as shown in Figure 3-1.

Figure 3-1. Uttar Pradesh State in India

Image source: Google Maps

According to recent census statistics, UP is India's fourth largest and most populated state, accommodating an extensive populace of almost 200 million individuals, nearly on par with the combined populations of, for example, France, Germany, and the UK.

[2] Rural areas in India are those regions where the population density is less than 400 people per square kilometre, and over 25% of households are involved in agricultural activities.

Source: www.mha.gov.in.

The gender ratio is 912 females for every 1000 males, reflecting the state's demographic makeup. Significantly, 75% of this populace resides in rural environs, contributing to nearly 20% of India's total rural population (UPDES, 2020).

The state of UP, an expansive state spanning approximately 240,928 square kilometres, is partitioned into four distinct economic regions: Western, Central, Bundelkhand, and Eastern. Within these regions, there are 75 districts covering a sprawling network of 97,814 villages (UPDES, 2020). For this study's fieldwork, focus was directed towards the Western division of the state, specifically within the Gautam Buddha Nagar (GBN) district, involving four villages, and the Bulandshahr (BS) district, encompassing three villages, as listed in Table 3-1.

Table 3-1. Two UP Districts and Corresponding Villages

Focused Regions	Villages (pseudonyms)
GBN district	Chhomas Maglasukh Shivennagar Balanpur
BS district	Machru Bhatona Mandwaya

The rationale for selecting rural areas within UP state as the focus of this study is twofold.

Firstly, recent banking trends have evidenced the progressive integration of DFS within the rural regions of this state (RBI, 2018; Singh & Malik, 2019). This evolving trend suggests that individuals residing in the villages of UP are increasingly acquainted with DFS usage. Hence, conducting fieldwork within these rural communities is the most favourable opportunity for me to thoroughly explore the role played by DFS in the lives of the populace in these areas.

Secondly, the fact that both my parents were originally from rural areas within UP, where they lived for a considerable part of their lives before relocating to urban areas nearly six decades ago, granted me a distinct advantage. This shared familiarity with the research sites' social and cultural dynamics and my local language proficiency allowed me to choose these research sites. As I have been living in the urban areas since my childhood, I decided to accept the help of my relatives who have been living near the

villages of GBN and BS districts as my gatekeepers to ensure unhindered access to the villages and in establishing rapport during the fieldwork phase (Creswell & Creswell, 2017; Williamson & Johanson, 2017).

Demographic landscape of the research site

Within this segment, I furnish the demographic particulars of two districts and the seven villages that constituted the focus of this study's fieldwork. Furthermore, I supply the contextual backdrop of the research participants. The demographic data associated with the districts and villages have been drawn from the Statistical Diary of UP state (UPDES, 2020) and corroborated with online sources.

GBN district and four villages

The district of GBN covers a land area spanning 1,282 square kilometres (equivalent to 495 square miles), with 85% of this territory classified as rural. This district's rural segment comprises 304 villages, accommodating an aggregate population of approximately 670,000 individuals. My fieldwork occurred within four villages of GBN: Chhomas, Maglasukh, Shivennagar, and Balanpur. Table 3-2 provides a snapshot of the vital demographic particulars of these villages.

Table 3-2. Demographics of GBN Villages

GBN district					
Village	**Total Population**	**Number of Households**	**Average Literacy Rate[3]**	**Male Literacy Rate[4]**	**Female Literacy Rate[5]**
Chhomas	6,192	993	57.57%	65.84%	48.42%
Maglasukh	1,544	256	63.99%	74.85%	51.46%
Shivennagar	1,832	311	66.59%	72.75%	59.33%
Balanpur	2,562	430	66.08%	74.96%	55.48%

Source: https://villageinfo.in

Chhomas village is home to 6,192 individuals, distributed across 993 households. The village's average literacy rate is 57.57%, displaying a higher literacy rate among males (65.84%) than females (48.42%). Nevertheless, the overall literacy rate of this village falls short of UP's literacy rate.

[3] Average literacy rate of UP state is 67.70% (UPDES, 2020).

[4] Average male literacy rate in UP state is 77.30% (UPDES, 2020).

[5] Average female literacy rate in UP state is 57.20% (UPDES, 2020).

Maglasukh village – the smallest among the four villages within the GBN district – accommodates a population of only 1,544 inhabitants, with 256 families residing within its bounds. The village exhibits an average literacy rate of 63.99%, with a more significant proportion of educated males (74.85%) compared to females (51.46%), lower than those observed across UP.

Shivennagar village is populated by 1,832 individuals, distributed across 311 families. The village displays an average literacy rate of 66.59%, featuring a superior literacy rate among males (72.75%) compared to females (59.33%). However, this village's average and male literacy rates fall below UP's, though female literacy is higher than the average for the state.

Balanpur village has a population of 2,562 and is home to 430 households. The village's mean literacy rate is 66.08%, with 74.96% of males and 55.48% of females receiving an education. The village's overall literacy levels also fall short of the educational standards observed at the state level.

BS district and three villages

The BS district spans an area of 4,512 square kilometres (equivalent to 1742 square miles), with rural regions accounting for 95% of its expanse. This district's rural region comprises 1174 villages, accommodating a collective populace of almost 2.6 million individuals. My fieldwork was conducted within three BS district villages: Machru, Bhatona, and Mandwaya. Table 3-3 presents notable demographic particulars of these villages.

Table 3-3. Demographics of BS Villages

BS district					
Village	**Total Population**	**Number of Households**	**Average Literacy Rate**	**Male Literacy Rate**	**Female Literacy Rate**
Machru	1,012	149	69.86%	79.89%	58.30%
Bhatona	2,568	430	66.08%	75.05%	55.68%
Mandwaya	2,082	397	65.08%	75.51%	53.80%

Source: https://villageinfo.in

Machru village's population is 1,012 individuals, distributed among 149 households. The village boasts an average literacy rate of 69.86%, characterised by a higher literacy rate among males (79.89%) in contrast to females (58.30%) – all exceeding the average literacy rates of UP.

Bhatona village accommodates a population of 2,568, with 430 households. The village demonstrates an average literacy rate of 66.08%, with a higher rate of literacy among males (75.05%) than female residents (55.68%) – yet these rates fall short of the state's literacy standards.

As for Mandwaya village, its population tallies 2,082 inhabitants, spread across 397 families. The village registers an average literacy rate of 65.08% among its residents, with a notably elevated literacy rate for males (75.51%) compared to females (53.80%). Nonetheless, Mandwaya's literacy rates remain below those upheld by the state.

Participant selection

The snowball technique was chosen as the most fitting strategy for identifying and enlisting research participants. Since the GBN and BS districts are significantly large, covering various villages, populations, and households, identifying suitable participants – individuals with DFS experiences – seemed complicated. Snowball sampling is considered the most appropriate technique when locating and identifying suitable people is complex. This technique allows the researcher to begin their search by pinpointing a few appropriate participants and using these participants as a medium to recruit more participants (Williamson & Johanson, 2017).

Moreover, this technique, recognised as a widely embraced sampling approach across various social science disciplines, involves accessing potential informants through contact details furnished by other informants (Noy, 2008). This sampling method ensures that participants with relevant DFS experiences are efficiently identified and included in the study, offering a comprehensive and robust foundation for qualitative research.

Following Williamson and Johanson's (2017) guidelines, I initially engaged with two acquaintances residing permanently in small towns within the semi-urban sectors of GBN and BS districts. These acquaintances had proximity to villages near their towns. I elaborated on my research objectives and fieldwork plans with both acquaintances through extensive and repeated telephonic discussions. Moreover, I shared a copy of the participant information sheets with them. I also urged them to further communicate my research aims to individuals in villages whom they believed could assist in facilitating

my fieldwork at their convenience. This preliminary communication assisted me in deciding my initial visit to the villages of these districts.

I also discussed my research goals and the participant information sheet during my initial meetings with some rural individuals with DFS experiences. These participants were also requested to disseminate the participant information sheet to other people in their social network whom they recognised as having DFS experience and being able to engage in conversations with me (Williamson & Johanson, 2017). However, the ultimate selection of participants for interview sessions hinged upon their familiarity with DFS, practical experiences, and willingness to contribute to this study (Rubin & Rubin, 2005; Van Maanen, 1979).

I determined the participant selection in alignment with the "principles of adequacy and appropriateness" (Cleary, Horsfall, & Hayter, 2014, p. 474). These principles signify that information gathered from previous interviews is already sufficient and insightful; conducting more interviews will not provide additional value or insights (Cleary et al., 2014; Sobal, 2001). This principle aided me in deciding when to cease interviewing additional participants. As a result, this study, adhering to snowball sampling and abundance principles, conducted 40 interview sessions involving rural individuals. However, for the analysis, only 36 interviews were deemed appropriate. The remaining four interviews were excluded from the study due to their limited relevance to my research objectives; these sessions were comparatively brief, and participants exhibited minimal interest in expressing their views and perspectives on DFS.

As the data collection phase of this study coincided with the COVID-19 pandemic, it brought some distinct constraints that echoed throughout the data collection process. For instance, the social distancing restrictions and wearing face masks during conversations, while essential for safety, disrupted the smooth flow of face-to-face interactions with the local community and study participants to some extent. However, facing these challenges, my research journey continued unabated. To ensure the safety of study participants, the other community members and myself, a researcher safety protocol (annexed in Appendix D) was followed throughout the data collection activity during the fieldwork.

It is also important to mention that my original fieldwork plan for this study initially targeted three villages: one within the GBN district and two within the BS district. Employing the snowball technique for participant selection extended my reach to visit nine villages in these districts. However, among these nine villages, I successfully conducted interviews with residents from seven villages, as detailed in Table 3-1 in the preceding section. This amplified scope of village visits augmented the comprehensiveness of this study's data collection phase.

Research participants

As previously indicated, this study's participants are selected from seven distinct villages across two districts within the UP state of India. The ultimate sample comprises 36 individuals, serving as the primary unit of analysis, along with an additional six bank officials. The inclusion of bank officials assists in enhancing my comprehension of the rural DFS landscape and associated practices. For a comprehensive overview of these participants' demographics, refer to Tables 3-4 and 3-5.

Table 3-4. Research Participants in Three Villages of BS District

Village	Pseudonym	Gender	Age	Education level	Occupation
Machru	Bharti	Female	57	College Graduate	Multiple job Holder
	Tilak	Male	30	College Graduate	Salaried Employee
	Vairaj	Male	46	Higher Secondary	Business Owner
	Raghu	Male	58	College Graduate	Farmer
	Solanki	Male	50	College Graduate	Multiple job Holder
Bhatona	Jatin	Male	27	College Graduate	Self-Employed
	Pradeep	Male	28	College Graduate	Salaried Employee
	Lalit	Male	30	College Graduate	Business Owner
	Gayatri	Female	39	College Graduate	Salaried Employee
	Tika	Male	59	College Graduate	Multiple job Holder
	Saurabh	Male	23	College Graduate	Commission Agent
Mandwaya	Harish	Male	65	College Graduate	Retired (Pensioner)
	Lokesh	Male	50	College Graduate	Farmer
	Palki	Female	30	College Graduate	Salaried Employee
	Rajiv	Male	47	College Graduate	Multiple Job Holder
	Param	Male	48	Higher Secondary	Commission Agent

Table 3-5. Research Participants in Four Villages of GBN District

Village	Pseudonym	Gender	Age	Education level	Occupation
Chhomas	Brij	Male	48	Higher Secondary	Farmer
	Deepam	Male	28	College Graduate	Salaried Employee
	Gagan	Male	47	Higher Secondary	Farmer
	Hari	Male	28	College Graduate	Salaried Employee
	Jai	Male	26	Higher Secondary	Salaried Employee
	Kulveer	Male	52	Higher Secondary	Business Owner
	Rajan	Male	45	College Graduate	Multiple job Holder
	Shakeel	Male	25	Higher Secondary	Commission Agent
Maglasukh	Bala	Male	42	Elementary	Multiple job Holder
	Dhiraj	Male	40	College Graduate	Multiple job Holder
	Anubhav	Male	35	College Graduate	Multiple job Holder
Shivennagar	Dinkar	Male	34	College Graduate	Multiple job Holder
	Krishna	Male	35	College Graduate	Business Owner
	Madhav	Male	49	College Graduate	Farmer
	Vikas	Male	47	Elementary	Business Owner
Balanpur	Harpal	Male	70	College Graduate	Retired (Pensioner)
	Chirag	Male	35	College Graduate	Farmer
	Bhuvan	Male	24	College Graduate	Salaried Employee
	Prakash	Male	25	College Graduate	Self-Employed
	Yogesh	Male	24	College Graduate	Self-Employed

The participants in this research include both men and women from villages in the GBN and BS districts. However, most of these participants are male. These individuals represent diverse occupations within their communities. Specifically, the study incorporates ten individuals holding multiple jobs, indicative of their engagement in multiple livelihood sources (for example, a farmer operating a milk dairy or a grocery retailer acting as a BC). Additionally, the participants include seven individuals engaged in full-time salaried positions (such as schoolteachers and sales executives), six individuals primarily involved in full-time crop farming, five small business owners (e.g. running a retail shop or vehicle pollution-checking centre), three full-time BCs, and three self-employed individuals who temporarily engage in work to support their family's livelihood activities (such as working on family farms or in retail shops). The study also features interviews with two retired individuals (who receive pensions). The study's participants exhibit diverse educational backgrounds, with the majority (27) possessing a higher level of education, namely college graduates. A portion (06) of these individuals achieved secondary school education, while a small subset (03) has attained education up to the elementary level (i.e. higher primary schooling).

I visited various rural bank branches throughout my fieldwork, including public and private banks. During these visits, I sought the perspectives of bank employees regarding rural banking as a whole and specifically discussed the role of DFS in facilitating and promoting rural banking.

I encountered no challenges in approaching and scheduling interviews with these bank employees. However, it was requested that I ensure their identities remain confidential. I conducted five interviews at the bank employees' workplace, specifically at the rural branch office. One senior employee (Prashant) invited me to interview at his home in one of the nearby villages in Shikarpur.

During the fieldwork, I interviewed six bank personnel from rural branches of both public and private sector banks within GBN and BS districts. This group of bank employees involves three branch managers (BM), one assistant branch manager (ABM), and two senior executives (SE), each with diverse work experiences spanning one to five years in rural banking. Table 3-6 furnishes detailed information concerning bank officials from rural GBN and BS district branches.

Table 3-6. Bank Officials in Rural Areas of GBN and BS Districts

Pseudonym	Position/Bank	Rural Banking Experience	Branch Location
GBN district			
Rakesh	BM/ Public Sector	Over 2 years	Inside the village
Manish	ABM/ Private Sector	Over 1 year	Outside the village
Shalini	BM/ Public Sector	Over 2 years	Outside the village
BS district			
Prashant	BM/ Public Sector	Over 5 years	Outside the village
Sujon	SE/ Public Sector	Over 2 years	Outside the village
Sanjay	SE/ Private Sector	Over 1 year	Outside the village

DFS user segmentation

During the fieldwork phase, it became evident that rural inhabitants employ diverse approaches to accessing financial services via existing DFS channels. Drawing from my observations, the research participants were classified into two distinct groups: Active DFS users and Passive DFS users, as detailed in Table 3-7. Active users denote individuals who directly engage with DFS channels via their digital devices (such as smartphones, feature mobile phones, or ATM debit cards). Conversely, passive users include individuals who access DFS indirectly through active users or BC points (Montague & Xu,

2012). This research designates 29 respondents as active DFS users and the remaining 07 under the classification of passive DFS users.

This segmentation further reveals that active participants primarily fall within the age range of early 20s to late 40s, with exceptions such as Kulveer (52), Raghu (58), Lokesh (50), and Solanki (50). In contrast, passive users are older, typically from late 30s to 70s. This age difference underscores the clear division between active and passive user groups and their respective engagement levels with DFS.

Table 3-7. Categorisation of Participants by DFS User Types

DFS user category	Research participants
Active users	Brij, Deepam, Hari, Jai, Kulveer, Dhiraj, Dinkar, Krishna, Madhav, Vikas, Chirag, Jatin, Prakash, Yogesh, Bhuvan, Pradeep, Lalit, Tilak, Vairaj, Raghu, Lokesh, Palki, Rajiv, Anubhav, Solanki, Param, Rajan, Shakeel and Saurabh
Passive users	Gagan, Harpal, Bala, Gayatri, Tika, Bharti, and Harish

Data sources

Within the framework of this study, I adopted a multifaceted strategy to gather an array of qualitative data to facilitate analysis and comprehension of how individuals use DFS to attain their life goals. Therefore, data collection techniques includes observation, semi-structured interviews, and visual materials (Creswell, 2014). These diverse methods were adeptly employed to ensure a comprehensive and holistic exploration of the nuances surrounding the interplay between rural individuals and DFS.

Observation

The unstructured observation was employed to document rural individuals' physical environments, actions, and day-to-day interactions within their native contexts (Creswell, 2014; Given, 2008). As explained by Given (2008), "In unstructured observation, the researcher enters the field with some general ideas of what might be salient, but not of what specifically will be observed" (p. 2). Therefore, this holistic and emergent data collection approach is most frequently associated with an interpretivist perspective, giving me the flexibility to report observations relevant to the research question and context without being constrained by any predetermined observation arrangement (Given, 2008). Field notes were employed for recording the physical settings, behaviours, and activities of research participants and locales (Creswell, 2014; Díaz Andrade, 2007). This meticulous process was essential for capturing the intricate

dynamics and elements of people's natural surroundings and interactions, facilitating a holistic and contextual understanding of their engagement with online and onsite financial services.

Since participants were not mandated to undergo formal notification or recruitment preceding the commencement of this adaptable observation approach, a conscientious effort was made to uphold the privacy of participants and other locals (i.e. non-participants) to avert any unwarranted intrusion into their personal spheres. To this end, a comprehensive observation protocol was meticulously formulated. The details of the observation protocol are available in Appendix E. This stringent procedural measure ensured the ethical conduct of the study and safeguarded the rights and privacy of the individuals under scrutiny.

I also engaged in observing rural bank branches. I primarily conducted my observations from outside the bank premises. This involved observing the footfall of customers visiting rural bank branches and ATM outlets in rural areas without causing any disruption to the activities of customers and banking officials. As I conducted six interviews inside the rural branch premises, I had the opportunity to observe the physical working conditions of the bank. This included seating arrangements, digital devices, customer queues, and the implementation of health and safety measures for rural customers and banking staff within the branch.

Semi-structured interviews

In this study, I harnessed the potential of semi-structured interview techniques to engage in comprehensive and insightful dialogues with the participants. The semi-structured interviews incorporated carefully crafted open-ended questions, serving as guideposts for the interviewer (researcher) and the interviewees (participants) to engage in a purposeful discussion within the research context. This technique allowed participants to share information and perspectives frankly, without any perceived reluctance, while sharing their experiences, practices, sentiments, and motivations surrounding their utilisation of DFS within their natural environments (Creswell & Creswell, 2017).

A set of guiding questions was carefully prepared for rural individuals and bank officials to facilitate productive interview sessions. Indicative questions can be found in Appendix F.

The interview sessions spanned from 25 to 90 minutes, contingent upon the participants' willingness to share their experiences and the extent of depth in the information they provided. These interviews took place at diverse venues, including the participants' residences, shops, the homes of friends or relatives, or their workplaces, all determined with due consideration for the participants' convenience. In certain instances, interviews included the presence of the participant's family members, relatives, and friends, who also contributed their perspectives on DFS.

In adherence to privacy and confidentiality standards, a voice-recording mobile application was employed to capture the interview discussions after obtaining explicit consent from the participants. Follow-up interactions were conducted with six participants using their contact information to enhance the clarity and accuracy of specific responses. This secondary engagement involved requesting participants to provide additional details or clarify their= initial interview responses. The outcomes of these supplementary conversations were meticulously recorded manually within the field notebook.

Since the interview is a dialectal interaction process, the language employed for communication between the researcher and the participants plays a pivotal role in this whole exercise. This linguistic medium serves as a valuable instrument for expressing and comprehending emotions and the significance of actions during conversational exchanges (Van Nes, Abma, Jonsson, & Deeg, 2010). Furthermore, adopting a shared language by the investigator and the participants throughout the data collection process enhances the fluidity and effectiveness of communication for both interviewer and interviewee (Vaidya, 2012; Van Nes et al., 2010). Since my research participants are non-native English speakers but are fluent in Hindi, interview sessions were conducted in Hindi. As the transcription of interviews involves specific critical considerations, I elaborate on this process in the data analysis section.

Visual material

In conjunction with utilising observation and interview methodologies, I incorporated photography to comprehensively document the research landscape and the endeavours of prospective participants within their authentic contexts.

This approach sought to yield in-depth insights capable of capturing the richness of the gathered data while concurrently serving as a mechanism to validate the occurrences witnessed during field visits (Banks, 2008; Creswell, 2014; Díaz Andrade, Urquhart, & Arthanari, 2015). To be precise, 231 photographs were captured throughout this study's fieldwork phase.

Since photographs serve as visual representations of objects, locations, or individuals, including textual or image-based information, it becomes paramount to uphold ethical research principles by safeguarding the privacy and confidentiality of such visual data. To ensure this, precautions were taken to ascertain that the captured images contained no sensitive or personal particulars about any object, location or individual depicted in the photograph.

Adhering to the tenets of photography ethics, a photography protocol was devised and rigorously obeyed throughout my fieldwork. For instance, photographs of rural bank branches and ATM outlets were exclusively taken from publicly accessible locations where photography was not restricted. Images of BC outlets, the residences or shops of participants, their activities, or physical possessions such as DFS devices were captured only after obtaining explicit consent from the respective individuals.

Moreover, I ensured that no sensitive details were inadvertently disclosed within these photographs while using them in this doctoral thesis. This was achieved by employing techniques such as blurring elements that could potentially convey confidential information, including participants' faces, names, phone numbers, bank account details, brand names, and personal content. The photography protocol can be found in Appendix G.

My position as a researcher

The importance of a researcher's role, whether as an insider (emic) or an outsider (etic), in the process of collecting data and its impact on the resulting knowledge has been

significantly recognised by researchers (Adler & Adler, 1987; Soedirgo & Glas, 2020). The researcher's role is pivotal in both quantitative studies, as shown by Adida, Ferree, Posner, and Robinson (2016), and qualitative inquiries, as evidenced by the research of Berger (2015) and Dwyer & Buckle (2009). As Jimenez, Abbott, and Dasuki (2022) pointed out, researchers in the field of IS and ICT4D studies often overlook discussing their positionality. Therefore, it is crucial and falls within my responsibility to clearly state the position I adopted during this study.

In this research endeavour, I occupied dual roles as both an insider and an outsider and adeptly adjusted my stance according to the circumstances. This dual role finds resonance with the concept of 'in-betweenness' (Jimenez, Abbott, & Dasuki, 2022).

Given my shared cultural and ethnic background and a seamless entry into the research sites facilitated by my rural acquaintances, I see myself as an insider. Nevertheless, I concurrently identify myself as an outsider due to two overarching reasons. Firstly, my study explores the role of DFS in the lives of individuals living in rural environments, weaving their personal and professional interests distinct from mine. Secondly, the intimate nature of DFS relating to personal finances dissuades individuals from discussing such matters within their social circles, thus shaping my role as an external researcher. However, my fieldwork has unveiled both the merits and limitations of adopting a dual identity. I now take this opportunity to expand upon the circumstances that made me play dual roles throughout my data-gathering endeavours.

As an insider, my familiarity with local norms, language, and accents proved invaluable in decoding participants' verbal and non-verbal cultural expressions. Nonetheless, as an insider researcher, the risk for me was unconsciously overlooking critical expressions relevant to the studied phenomena or becoming biased about the people and culture being studied. Being an insider, I was not immune to such possibilities. To counteract these pitfalls, I took an outsider stance, periodically suspending my preconceptions to facilitate an unbiased understanding of the villagers' practices. Moreover, I firmly believe that adopting an outsider perspective also shielded me against the dissemination of partial accounts of people's DFS practices. Instead, I used my insider viewpoints to underpin the disclosure of participants' contexts and situations, which are usually not disclosed to outsiders.

During the fieldwork, I often realised that holding an insider position eased my access to informants and their willingness to engage in the study. Yet, engaging in conversations about individuals' financial affairs and practices, frequently treated as private facets of their lives, necessitated my cautious approach in tactfully addressing these confidential topics during formal and casual dialogues with residents. However, many participants exhibited confidence in me and shared their financial activities, making me feel like a trusted insider. Perhaps my rural connections and the rapport I established during informal conversations with locals (before having formal interviews) helped my participants to consider me as an insider and a "nice guy" (p. 12) to share their internal financial matters with me without hesitation (Adler & Adler, 1987).

Nonetheless, not all interactions during interviews mirrored this insider dynamic. Challenges surfaced in fostering open and casual dialogues with select informants, leading me to pause audio recordings to alleviate discomfort – although this approach was ineffective in all scenarios. Such instances evoked a sense of detachment, casting me as an outsider in those moments.

From a logistical vantage point, my insider status in the field streamlined my fieldwork, minimising costs associated with food, lodging, and local travel, often managed graciously by acquaintances and locals.

I unequivocally want to state that the absence of my pre-existing affiliations would have introduced considerable obstacles to this qualitative field study involving people's financial practices. Moreover, my in-betweenness role-play (i.e. unfamiliar presence and a confidant) during my fieldwork facilitated acquiring unique insights that would have remained inaccessible had I solely adopted one of these roles (Adler & Adler, 1987; Jimenez et al., 2022).

3.4 Data analysis and theorising method

I adopt the guidelines of the thematic analysis (TA) approach outlined by Braun and Clarke (2006) to analyse the qualitative data that addresses the overarching question of this research: How do individuals in rural areas of India use DFS to achieve their life goals? The decision to use TA is grounded in its capacity to provide a versatile yet meticulous analytical framework. TA is known to be adaptable and accommodating to

realist and constructionist paradigms, rendering it a suitable approach to analysing, identifying, and reporting potentially substantial and meaningful insights in the form of themes drawn from qualitative interviews conducted with research participants (Braun & Clarke, 2006).

At this point, it becomes crucial to clarify the definition of a 'theme' within the analytical approach utilised in this research. In a broader sense, "theme is an extended phrase or sentence that identifies what a unit of data is about and/or what it means" (Saldana, 2013, p. 175). It "captures something important about the data concerning the research question and represents some level of patterned response or meaning within the data set" (Braun & Clarke, 2006, p. 82). Generally, the primary objective of the thematic analysis approach is to 'winnow' the number of initial categories or seamlessly combine various categories for constructing an overarching theme from the data corpus to form a coherent narrative (Saldana, 2013). Researchers often regard frequently appearing patterns in the dataset as themes. However, their significance is not solely tied to the frequency of their occurrences or presence in a certain percentage of data items (Braun & Clarke, 2006). In other words, themes might be prominent in specific data but appear (or be absent) sparingly across the dataset. Therefore, researcher discernment plays a crucial role in recognising themes rather than applying rigid rules (Braun & Clarke, 2006). Thus, guided by these suggestions, the identification of categories and themes in this study relies on their ability to represent something significant concerning the overarching research question rather than their repeated occurrences in the data corpus.

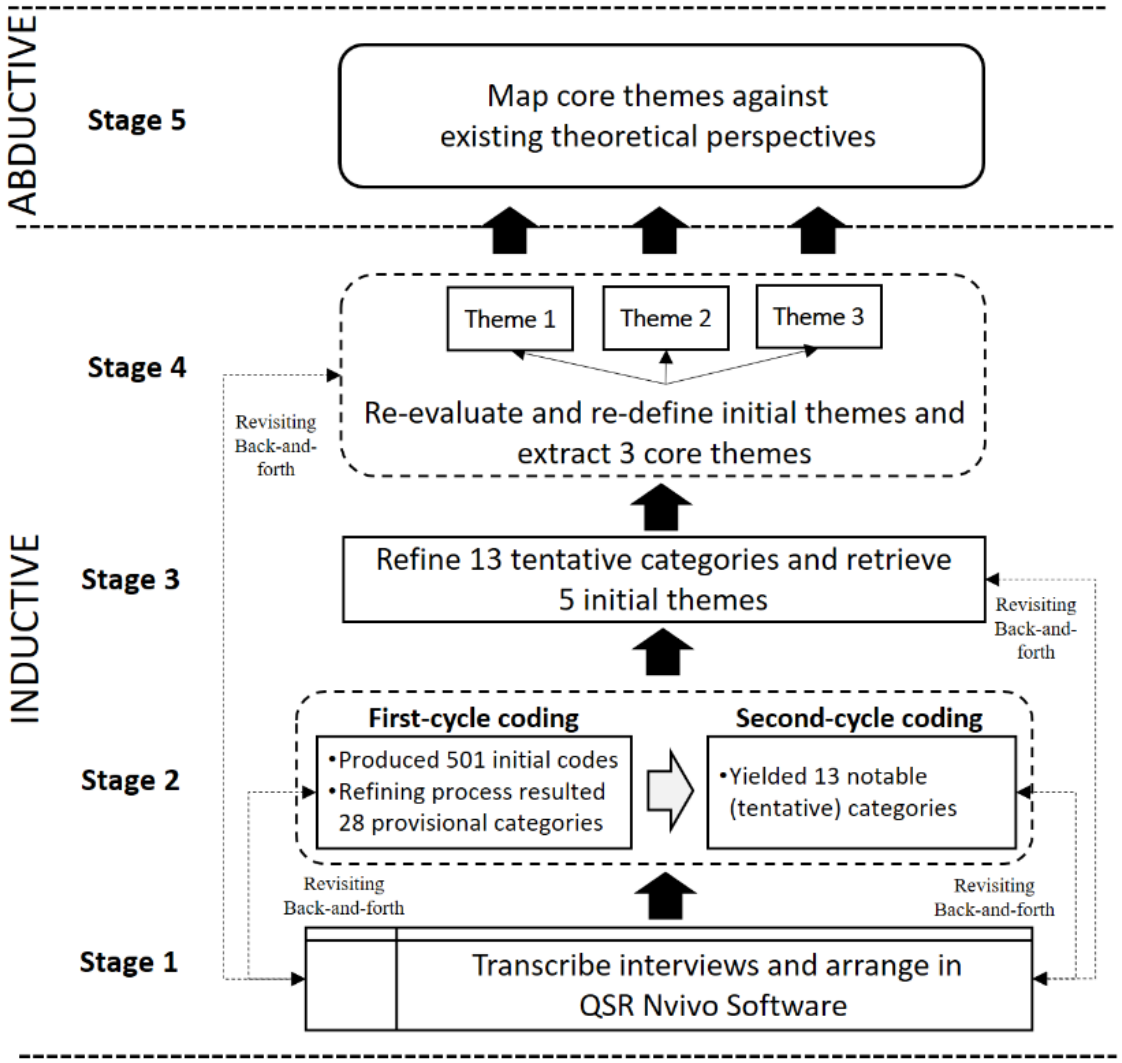
Another critical decision in adopting the TA method pertains to the researcher's stance on analytical reasoning to facilitate the identification of core themes. In this study, I employed inductive-abductive analysis to analyse empirical data (Reichertz, 2007, 2014). While inductive thinking signifies that the identified themes are intricately entwined with the data itself (Patton, 1990), abductive reasoning offers a creative inferential path designed to extract novel insights and concepts while being attuned to the extant theories (Díaz Andrade, 2023; Tavory & Timmermans, 2014). To follow this blended analytical path, I first utilise inductive logic to scrutinise the dataset and identify critical themes around participants' DFS practices. (Braun & Clarke, 2006). Subsequently, I employ abductive reasoning to map these themes with the concepts of the CA

framework and SC theories discussed in Chapter 2. This blended analysis of participants' use of DFS within their rural settings allows me to uncover the dynamics between their DFS practices and the realisation of life goals.

3.4.1 Inductive-abductive thematic analysis stages

Recognising the importance of inductive and abductive reasoning outlined earlier, I performed data analysis in five distinct stages. The first four stages of analysis allow me to extract three core themes inductively, as illustrated in Figure 3-2. These core themes are then abductively mapped with the existing theoretical concepts explained in Chapter 2. This constant move between themes and existing theories allowed me to recognise and uncover the dynamic interplay between individuals' DFS practices and achieving life goals (Miller, 2003). Each analysis stage is described in the following sections.

Figure 3-2. Inductive-Abductive Analysis and Theorisation Stages



Stage 1. Unpacking Data: transcription and structuring

The transcription process is crucial for researchers to become familiar with what they have collected from the field. Transcribing the researcher's conversations with participants into a written form is vital in facilitating and adding rigour to the data analysis (Duranti, 2006; Nascimento & Steinbruch, 2019). Since the transcription process involves transposing informants' feelings, experiences and meanings constructed through their social and cultural norms, the selection and implementation of the transcription method are not free from the researcher's sociocultural background and epistemological perspectives (Kvale & Brinkmann, 2009). With this understanding, I describe the interview transcription process followed in this study in the following sub-section.

Transcribing interviews

The transcription process was conducted by me. There are three main reasons for doing this task on my own. Firstly, as I had been physically immersed in informal and formal conversations and experienced people's activities during the fieldwork, I believe that taking the assistance of any third-party physical transcriber or digital transcription software would increase the chances of losing valuable aspects of collected data (McMullin, 2023). Secondly, my cultural and social backgrounds are like the research participants', allowing me to easily reflect on their feelings and voice expressions while listening to the audio and corroborating them with my field notes.

Lastly, transcribing people's feelings, views and experiences into the text form is neither static nor mathematical (Nascimento & Steinbruch, 2019). Transcription requires interpretations infused by the researcher's cultural, social, academic, and philosophical perspectives, further helping a researcher with what to transcribe and how to transcribe (Pelzang & Hutchinson, 2017). For example, two people from different backgrounds will likely transcribe or understand the same interview with different interpretations or meanings. Therefore, as an interpretivist, I decided to conduct the transcription process of the interviews myself.

The transcription process can be done using objective (i.e. naturalised transcript) and subjective (i.e. denaturalised transcript) characteristics. While the former stance focuses on transcribing spoken words coming from the interviewee precisely without any biases,

the latter allows the representation of dialects in a standard written language by making necessary adjustments in the speech, such as making assumptions, using important punctuation marks (e.g. comma, full stop and ellipses), and placing word or phrase between square parentheses [ ] for the reader's better understanding of the conversation (Oliver, Serovich, & Mason, 2005). I adopted the denaturalised transcription approach. I carefully used this approach to ensure that my subjectivity and adjustments did not affect the contextual meaning of the research informants' spoken words. During the transcribing process, participants' responses were anchored to the open-ended interview questions, irrespective of the sequence of their responses received during the interview session.

At this point, I want to mention that the transcription process I followed was time-consuming due to three main factors. Firstly, I translated all audio into English since all interviews were conducted in Hindi. This task required meticulous attention as I had to carefully listen to every spoken word by participants (or others with them in their natural environment) and translate it into standard written English. For example, some interview sessions included unavoidable background noise, such as children playing or vehicles honking near the interview location. This whole exercise was undertaken to ease subsequent analysis and reporting stages.

Secondly, during translation, it was crucial to ensure that the chosen words conveyed the intended meaning and emotional nuances expressed by participants. This was challenging when participants used non-verbal cues. For instance, there were instances when participants made a sound using their palate, tongue, and lips to express agreement or disagreement. Lastly, the process involved filtering out any discriminatory or abusive language used by participants while sharing their views and experiences.

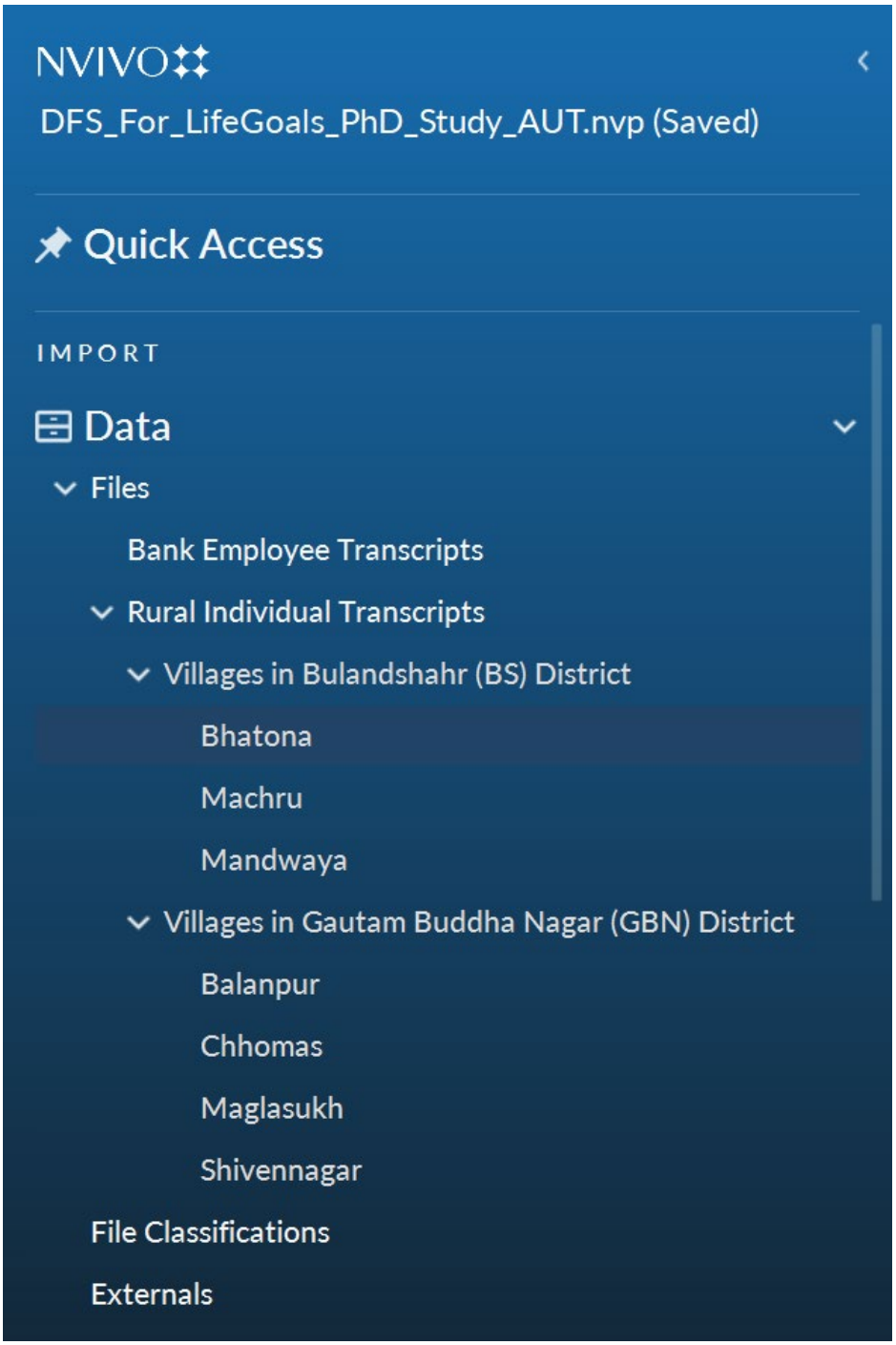
The transcription process was iterative. In the analysis phase, I had to revisit the transcribed interviews multiple times and occasionally re-listen to audio recordings to validate my interpretations of participants' spoken words and perspectives. This involved making necessary edits to the previously transcribed versions.

Organising interview text files

I organised the transcriptions into the QSR NVivo Software following the initial transcription process. The transcribed files were categorised into distinct main folders,

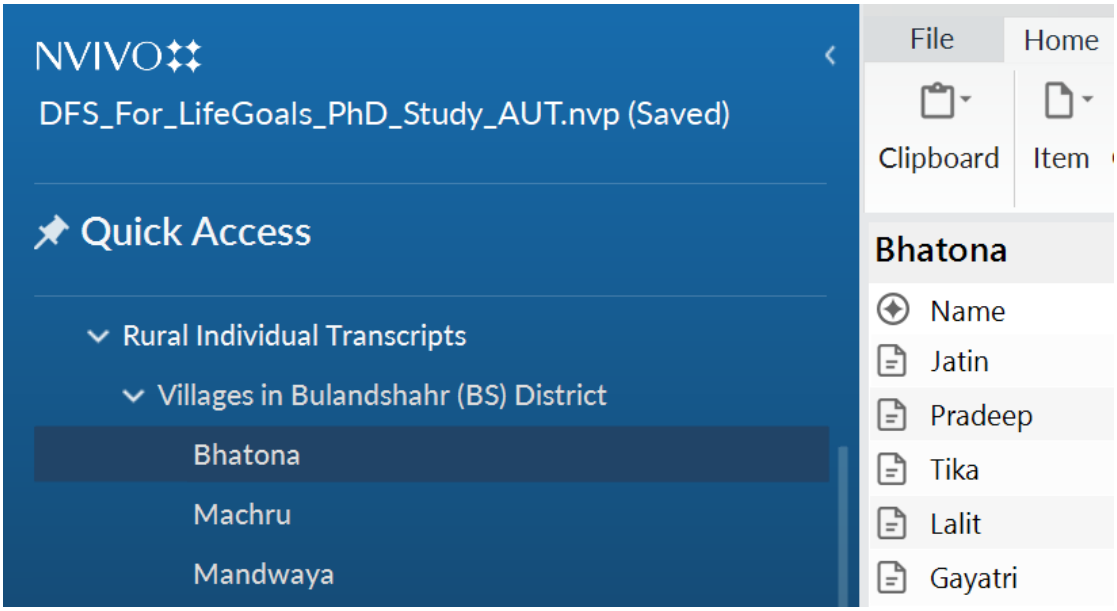
such as “Bank Employee Transcripts” and “Rural Individual Transcripts,” with further subdivision into sub-folders based on districts, such as “Villages in BS District” and “Villages in GBN District”. Each district sub-folder had additional sub-folders representing specific villages (using pseudonyms) visited during the research. This hierarchical organisation facilitated efficient data management and retrieval. Figure 3-3, a screenshot of NVivo QSR software, visually represents interview transcripts’ methodical organisation.

Figure 3-3. Transcript Arrangement in QSR NVivo Software



Each transcript was carefully named using the participant's pseudonym to facilitate quick and convenient reference to transcripts, as demonstrated in Figure 3-4.

Figure 3-4. Transcripts of Participants from Bhatona Village (Pseudonym)



In addition to capturing a wide range of participant perspectives, I have incorporated contextual attributes of the research participants. These attributes include the interview location, participant's gender, age, education level, and occupation or designation. These details were included based on the participant's willingness to share them during the interviews. These demographic particulars are of critical importance as they enhance our understanding of the contextual backgrounds of this study and research participants (Deterding & Waters, 2021).

Stage 2. Coding: initial understanding of data corpus

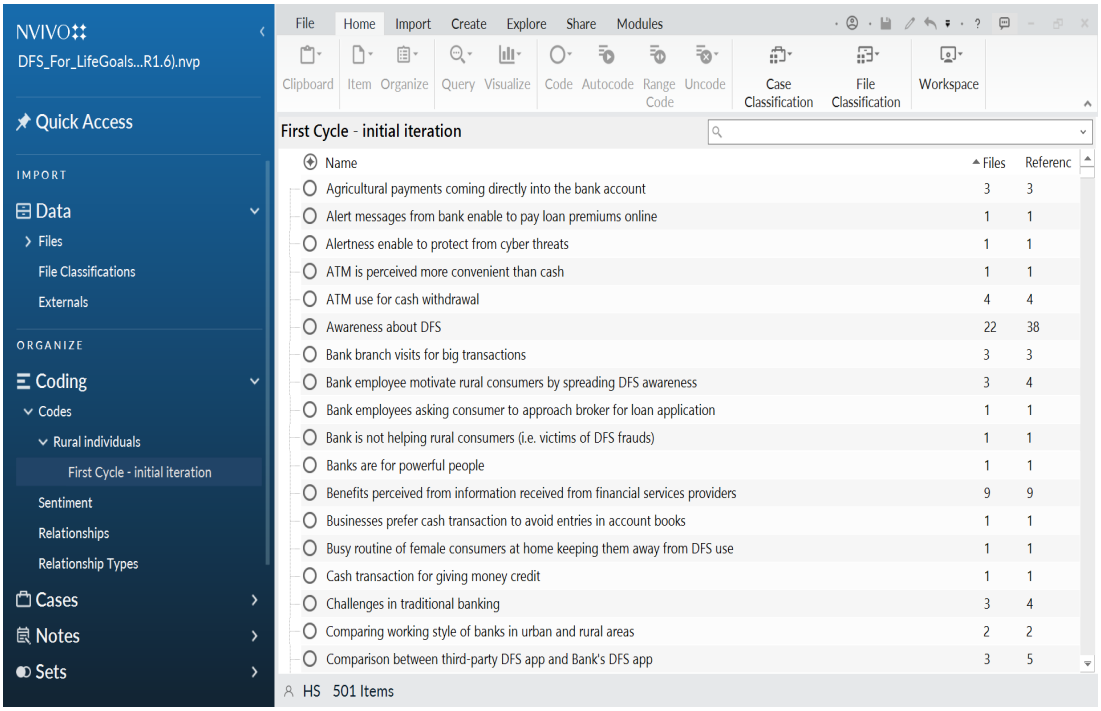
This phase involves coding the interview transcripts, which have already been organised within the NVivo Software. While the transcription process provided an initial understanding of participants' diverse perspectives, the initial coding set the stage for extracting deeper insights hidden within the data.

I commenced the coding process by adhering to the coding guidelines proposed by Van Maanen (1979) and Saldana (2013). These guidelines are particularly suited for research studies that utilise ethnographic techniques. The coding procedure adopted in this stage consisted of the first and second cycles.

First-cycle coding

In the initial round of open coding, I closely examined each transcript and assigned initial codes to capture details about participants' settings, DFS usage, and practices. These codes established the foundational structure for subsequent analysis, resulting in 501 codes. Figure 3-5 illustrates the screenshot of NVivo after developing initial codes.

Figure 3-5. NVivo Screenshot Displaying the List of Initial Codes



The complete list of initial codes is provided in Appendix H. Given that these initial codes represented my initial grasp of the data, they naturally exhibited overlaps and similarities in meaning. I refined this complexity by merging overlapping codes and assigning more meaningful labels to simplify. This refinement process also involves revisiting interview transcripts back and forth. Additionally, I organised different code folders to categorise information, including participant demographics and codes that seemed less relevant to the overarching research question.

This step aimed to enhance the manageability of the subsequent analysis. Through this consolidation and preliminary refinement process, the initial set of codes was condensed into 28 provisional categories, comprising 158 codes, as illustrated in Figure 3-6.

Figure 3-6. NVivo Screenshot Displaying Provisional Categories

First Cycle - next iteration

Search Project

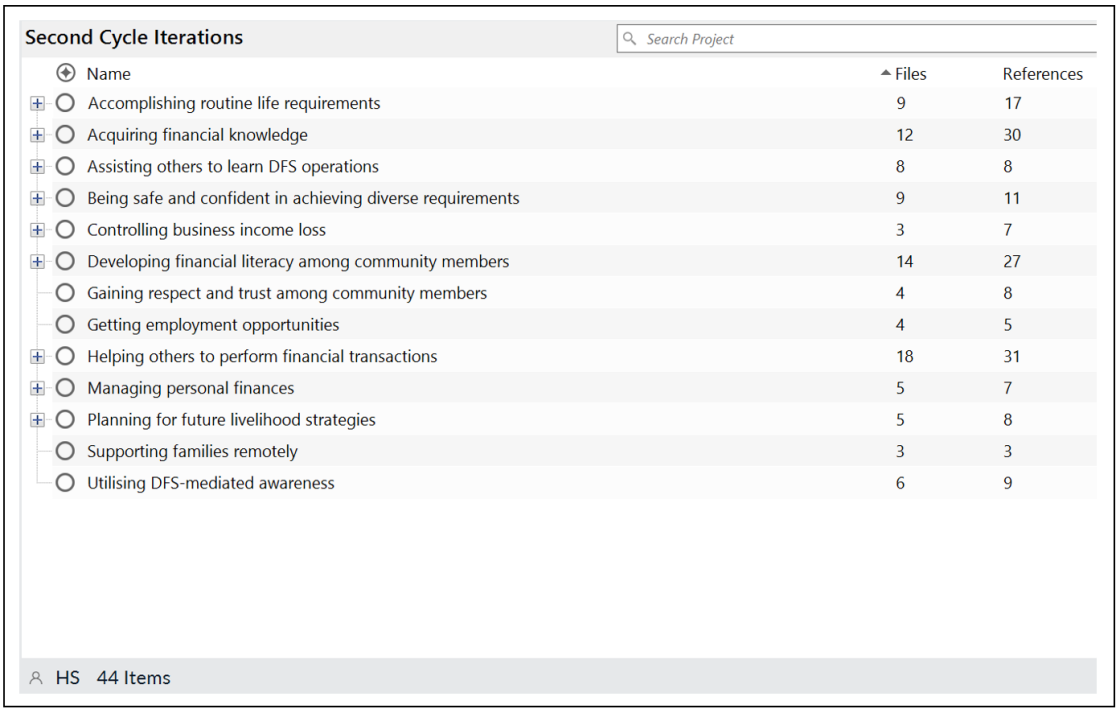
Name	Files	References
Cash incentives for DFS use	6	8
Constraints with DFS channels	10	11
Cultural barrriers to use DFS	7	10
DFS as source of financial awareness	12	16
DFS for managing emergency situations	6	10
DFS for visually disabled	1	31
DFS is percieved as unsafe	12	15
DFS related fears	11	15
DFS save time, cost and tension	27	102
DFS support farming activities	3	8
DFS support small businesses	7	27
DFS supporting career-building activities	2	4
DFS use for diverse requirements	20	47
Drawbacks of traditional banking	4	5
Income levels affecting DFS use	7	10
Lack of DFS initiatives	13	31
Lack of literacy	12	25
Lack of participation in formal financial system	10	28
Lack of trust in DFS	10	15
Life without DFS	14	19
Limited DFS access by females	9	22
Local money lending practices	4	11
People's needs and preferences	14	44
Response to DFS threats	17	33
Sources of DFS awareness	21	46
Supporting others	9	19
Willingness to receive DFS awareness	4	5
Younger rural individuals are more inclined towards DFS	4	4

HS 186 Items

Second-cycle coding

This cycle aims to pinpoint emerging ideas in the set of provisional categories produced in the first-cycle coding and refine these categories further. As I proceeded further into the category development and refinement process, I carefully re-examined each category and its corresponding codes (while referring to interview transcripts back and forth), merging and renaming them as needed to produce a set of conceptually similar and closely related categories. The data winnowing process carried out in the second-cycle coding produced 13 tentative significant categories, as shown in Figure 3-7.

Figure 3-7. NVivo Screenshots: Second-Cycle Categories



Stage 3. Refining and enhancing tentative categories

I thoroughly refined the initial 13 tentative categories in this stage to extract provisional themes. I referred to the participants' interview transcripts whenever necessary to ensure no critical information was overlooked. This exercise facilitated the refining of tentative categories and identifying provisional themes concerning DFS's contribution to attaining life goals.

After several refinement iterations at this stage, I identified five provisional themes and their corresponding categories, offering fresh insights into DFS's role in the lives of people living in the rural communities of villages in UP state. Details of provisional themes and their respective categories are annexed in Appendix I.

Stage 4. Unveiling clarity: polishing themes and categories

In this phase, a rigorous reassessment of provisional themes and their associated categories was undertaken to determine the definitive themes – the central focus of the study, often referred to as the "main dish" (Saldana, 2013, p. 208). The refinement process included amalgamating categories and themes, using more precise terminology in label rephrasing, and carefully preserving their distinctiveness. This stage also involves revisiting interview transcripts to check the consistency of selected excerpts. This stage

produced a definitive set of themes and categories through this iterative approach, as outlined in Chapter 5.

Stage 5. Applying abductive reasoning: linking themes with extant theories

In this critical analysis stage, I mapped the core themes with concepts of the CA and social capital. This ongoing movement between the identified themes and existing perspectives enabled me to uncover the insights into the dynamic connection between individuals' DFS practices and achieving life goals.

3.5 Chapter conclusion

This chapter has clarified the research methodology by outlining my philosophical foundation that guides this study, describing the research design, which comprises data collection process, fieldwork locations, participant selection, demographic information, data sources and my role as a researcher. Subsequently, the chapter explained the data analysis and theorising method, incorporating thematic analysis stages based on inductive and abductive logic. This blended method facilitates this research to unveil fresh insights woven into the data corpus.

Chapter 4 Research Context

4.1 Chapter outline

This chapter commences by offering a broader insight into the cultural perspectives of the Indian populace regarding money and asset ownership. Subsequently, I provide details of the Indian financial services ecosystem and the initiatives towards FI. The purpose has been to gain a foundational understanding of the current implementation of DFS across India. Afterwards, I narrowed the focus to contextual information, particularly addressing the state of UP. Within this context, I present the multi-dimensional backdrop, circling the historical, cultural, socio-economic, and financial services dimensions of UP. I then cast a spotlight on seven villages in two districts of UP. The contextual information presented in this chapter has been gleaned from my observations and conversations with residents and bank employees. I also gathered demographic information from official sources. This description includes various dimensions, encapsulating the physical environments, living conditions, economic activities, and cultural practices that constitute the essence of these villages. Moreover, I broadly describe villagers' educational background, financial awareness, and digital proficiency. In addition, I present villagers' DFS preferences, the challenges they encounter with DFS use, and their engagement with traditional banking channels. These comprehensive contextual accounts provide readers with a nuanced understanding of the research context and equip them to interpret the findings while considering these intricacies.

4.2 An overview of cultural perspectives on money among Indians

Cultural norms, beliefs and attitudes significantly influence individuals' perceptions, values, and interactions with money (Jain & Joy, 1997). Therefore, understanding these dynamics surrounding money is crucial for grasping the financial behaviours of the research participants of this study. Money carries diverse meanings across different cultures, extending beyond its economic utility to shape perceptions and beliefs within a culture (Dyer, 1989). Western cultures often place a lot of importance on money, viewing it as a medium of exchange and a primary way to measure success. However, contrary to this pecuniary view, in many non-Western cultures, money plays a crucial

role beyond simple exchanges; it shapes people's personal needs and values for their family ties and relationships (Dyer, 1989).

People in India typically adopt a long-term outlook towards money, regardless of their urban or rural backgrounds. For them, money holds significance beyond its role in exchanging commodities or supplies required to support daily needs. It is often valued and safeguarded to ensure personal financial security (e.g., life during old age or retirement) and as a responsibility towards their family and descendants (e.g., children and grandchildren) financial wellbeing. For instance, saving money and owning assets, such as a house or land are considered paramount for people in India to gain financial stability, guided by financial obligations, responsibilities, and the collective interest in the family's financial wellbeing.

Besides investing money in real estate, money is often used to possess expensive jewellery, primarily gold ornaments. This additional financial asset contributes to people's and their families' financial security. Jewellery is also crucial in India's gift-giving customs, where men and women receive it during important life events. For instance, during weddings, the jewellery given to the bride by her family reflects the family's socio-economic status (Mehta & Belk, 1991).

Regarding borrowing practices, they are influenced by factors such as socio-economic status and access to financial services. Indians rely on both informal and formal sources based on their needs. Informal sources, including relatives, friends, and moneylenders, are preferred due to their flexibility, especially regarding documentation and timing, to address immediate and short-term financial needs. However, repayment pressure often accompanies this type of credit. With the expansion of formal banking services, individuals also turn to banks and microfinance institutions for structured credit services to meet long-term and larger investment goals, such as purchasing homes, expanding businesses, funding education, buying vehicles, or securing agricultural loans.

4.3 Financial services system in India

The financial services sector in India is extensive and varied and has kept evolving since independence in 1947. This section focuses on the structure of the Indian financial institutions. Financial institutions in India have two broad categories: banking

institutions and non-banking institutions. Banking institutions comprise commercial banks, co-operative banks, and the relatively recent additions of small financial and payment banks[6]. Non-banking institutions include insurance companies, mutual funds, and other non-banking financial companies (Mohan & Ray, 2018; Parthasarathy & Joshi, 2021).

Indian commercial banks, as the focus of this study, hold a dominant position in India's financial services sector, accounting for more than 64% of its composition (Parthasarathy & Joshi, 2021). Commercial banks are further classified into different types, including public sector banks, private sector banks, small finance banks, payment banks, regional rural banks, and foreign banks (Mohan & Ray, 2018; RBI, 2020). Except for foreign banks, these banking institutions offer comprehensive financial services to individuals residing in all regions and states, including UP state. These commercial banks are critical in facilitating financial transactions, mobilising savings, and providing investment opportunities to their customers through brick-and-mortar branches and digital banking technologies (Mohan & Ray, 2018).

4.4 Digital FI across India

India’s rapid adoption of DFS in recent years has been remarkable (Demirgüç-Kunt et al., 2022). The RBI, the apex banking authority, reported that digital transactions accounted for nearly 88.9% of total financial transactions in 2016-17 and surged to 92.6% in 2017-18 (RBI, 2018). Furthermore, mobile banking customer registrations soared by 54% in 2018, reaching 251 million, up from 163 million in 2017. This trend continues, exemplified by the preference for Bharat Interface for Money (BHIM-UPI)[7], facilitating 4.5 billion digital payment transactions as of the first quarter of 2022 (Bureau, 2022).

This significant rise in DFS adoption in India can be attributed to comprehensive FI endeavours by key entities such as the Ministry of Electronics and Information Technology, RBI, the National Payment Corporation of India, and the Government of

[6] Payments banks, a novel banking model by the Reserve Bank of India (RBI). These banks facilitate regular banking service, including deposits and savings, but no credit facility, accessible through mobile phones.

[7] BHIM is a digital mobile payment application using the UPI platform, developed by NPCI. BHIM app allows users to make digital payments through the Smartphone App and Unstructured Supplementary Service Data (USSD) via feature mobile phones.

Source: http://cashlessindia.gov.in/

India. Notable initiatives include ‘Pradhan Mantri Jan Dhan Yojana’ (PMJDY), connecting the unbanked with financial services, ‘Pradhan Mantri Gramin Digital Saksharta Abhiyan’ (PMGDISHA) and ‘Go Digital, Go Secure’ for digital literacy in rural areas (Menon, 2019; Bureau, 2022; Sharma & Thomas, 2017).

The journey towards digital FI in India began with the PMJDY initiative in 2014. Aimed at unbanked and underserved individuals, PMJDY’s primary goal is to extend banking services nationwide, particularly to rural areas comprising over 800 million people across approximately 640,868 villages (Singh & Malik, 2019). By facilitating affordable and accessible access to essential financial services, PMJDY empowers excluded segments to participate in the formal economy (MOF, 2022; Singh, Kumari, Sharma, & Malhotra, 2021).

DFS have played an integral role in advancing PMJDY’s objectives. A key strategy involves linking bank accounts with mobile and Aadhaar numbers for unique identification. This integration empowers customers to avail themselves of a broad spectrum of financial services through DFS channels like mobile phones, ATMs, and BCs (Rupam, 2019). This accessibility has substantially bolstered FI, enabling participation in the formal financial system and bolstering the initiative’s success. Research reveals that millions of rural residents and thousands of merchants have already transitioned to digital transactions in India (Singh & Malik, 2019).

Alongside FI initiatives (as mentioned above), the demonetisation of 500 and 1000-rupee notes in India has played a significant role in DFS uptake across the country. These high-value currency notes comprised approximately 86% of the total currency value in circulation. Declaring these currency notes as invalid as legal tender created shockwaves nationwide. Citizens were given approximately two months to exchange their old currency for a redesigned 500-rupee note and a newly introduced 2000-rupee note (Sastry, 2020). It is argued that the demonetisation move, unprecedented in scale and scope, aimed to address several pressing issues plaguing the Indian economy. These included combating black money (i.e. illegal or unaccounted-for income), curbing corruption, eliminating counterfeit currency, combating terrorism financing, and expanding the tax base (Sharma, 2017; Smith, 2017a).

While the policy was met with initial scepticism and widespread inconvenience, particularly among the rural and economically marginalised populations heavily reliant on cash transactions, it garnered significant public support (Smith, 2017b). The decision to demonetise currency notes was not without historical precedent. India had previously undergone demonetisation exercises in 1946 and 1978, albeit on a smaller scale and with different objectives (Bose, 2019). The 1946 demonetisation aimed to capture tax avoiders, while the 1978 demonetisation targeted individuals holding black money. Each demonetisation episode was accompanied by its unique set of challenges and implications for the economy (Bose, 2019).

However, the 2016 demonetisation under the ruling government leadership was distinct in scale, scope, and objective. The policy was driven by a vision of transforming India into a cashless economy, thereby reducing reliance on physical currency and promoting digital financial transactions (Smith, 2017a). The idea of transitioning to a cashless economy was not new. It had been advocated by developed nations, including the USA, to enhance financial inclusion, promote digital literacy, and foster economic growth (Smith, 2017a).

While demonetisation was recognised as a bold and decisive step towards achieving these goals, it also raised concerns about its impact on vulnerable segments of society, including the poor, rural populations, and small businesses. The demonetisation exercise underscored the complexities and challenges of implementing transformative policy measures in a diverse and rapidly evolving economy like India's. As India grappled with the aftermath of demonetisation, including disruptions to economic activity, cash shortages, and logistical challenges, the event served as a defining moment in the country’s economic history. The demonetisation policy highlighted the need for robust regulatory frameworks, effective governance mechanisms, and comprehensive financial literacy initiatives to successfully pilot the transition towards a digital economy (Bose, 2019).

In recent years, people in India have witnessed a rapid evolution in the accessibility of their financial services. In the following sub-sections, I will explore online and offline solutions for accessing the country's financial services.

4.4.1 Access to mobile DFS channels

Over the past few years, DFS provided by commercial banks in India have undergone rapid evolution. These services now offer affordable financial solutions delivered through mobile-based digital transactional software. This includes mobile banking applications offered by banks and third-party digital payment applications of non-bank entities like Google Pay, Paytm, and PhonePe. These digital platforms have revolutionised the way financial transactions are conducted, offering convenience, accessibility, and cost-effectiveness to users. According to the reports, mobile payment applications provided 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). The availability of these DFS has empowered individuals with greater control over their financial activities and has contributed to the growth of the digital economy in India (RBI, 2021a, 2021b).

UPI, introduced in August 2016, has significantly contributed to advancing mobile-based DFS. UPI is a 24/7 instant mobile payment system that allows users to conduct immediate financial transactions using a virtual payment address, such as sending or receiving money. This address can be a UPI ID, a bank account-linked mobile number, or a quick-response (QR) code. The advantage of UPI is that it eliminates the need to share bank account details or other sensitive information with the transacting parties, ensuring enhanced security and privacy. Additionally, UPI can be used for non-financial activities, including checking account balances and providing users with comprehensive access to their banking services through a user-friendly interface (NPCI, 2022).

The proliferation of mobile payment applications has significantly impacted the adoption of DFS in rural areas across the country. These mobile applications, offered by banks or non-bank entities, provide a convenient and accessible platform for rural individuals to engage in financial transactions using their mobile devices (both feature mobile phones and smartphones). They have simplified financial transactions, allowing individuals to efficiently perform fund transfers, bill payments, and mobile recharges. Moreover, the availability of mobile payment applications has overcome barriers related to physical distance and limited access to traditional banking infrastructure in rural areas. With a smartphone and an internet connection, individuals can access a wide

range of financial services from the comfort of their homes or local communities (Bijapurkar et al., 2020; KPMG, 2019).

In addition to MFS, individuals can access DFS through smart cards, such as debit and credit cards. The Ministry of Finance (MOF) in India has released a recent report highlighting the issuance of approximately 310 million RuPay debit cards to account holders from 2015 to 2021. These cards have been distributed across rural and semi-urban areas in various states, providing individuals with a convenient and secure means to access financial services digitally. This widespread adoption of RuPay debit cards reflects the increasing popularity and acceptance of digital payment methods in India, offering individuals greater flexibility and convenience in managing their financial transactions (MOF, 2022).

Furthermore, data from the RBI indicates that commercial banks have distributed more than 49 million electronic smart cards to rural banking customers as part of India's digital FI initiative. While this distribution of smart cards translates to around 8% of the total adult population of India, this number can be considered significant in the broader context of India's population dynamics. Approximately 168 million households, comprising nearly 600 million adults, reside in rural areas and have historically been unbanked. Considering the first phase of India's FI initiative, which aimed to digitally connect households with formal banking services, this percentage demonstrates a positive trend in promoting FI within rural communities (RBI, 2019).

Additionally, installing approximately 130,000 ATMs and roughly 1,78,500 micro-ATMs in 2020 to provide financial services to rural customers strongly indicates the growing adoption of DFS in rural regions. These ATMs serve as accessible touchpoints for rural populations, allowing them to conveniently access various financial services, including cash withdrawals, balance inquiries, and fund transfers (RBI, 2021a).

4.4.2 BC model to enhance FI

Public commercial banks have adopted the BC model to enhance access to financial services. This model facilitates essential financial services to underbanked and unbanked populations, primarily residing in rural areas, through BC banking points that utilise ICT solutions. By leveraging this model, individuals in remote areas can avail

themselves of a wide range of financial services through BC outlets equipped with ICT infrastructure, including banking transactions, deposits, withdrawals, and remittances. Individuals from the local community, such as shop owners and retired servicemen, can operate these BC points. Acting as representatives of the banks, these BCs facilitate various financial transactions on behalf of the banks and receive commissions from the banks for their services. BCs are equipped with an ICT-based financial transaction device called the AePS or micro-ATM. This device allows BCs to conduct financial transactions securely and conveniently, leveraging the Aadhaar authentication system for customer identification and verification (MOF, 2022).

AePS allows customers to initiate financial transactions using their unique identification, known as an Aadhaar number, and biometric verification, typically through fingerprint authentication. This approach has been implemented to promote digital transactions in rural areas and reduce dependence on cash-based transactions. Recent statistics indicate that commercial banks distributed approximately 178,500 AePS micro-ATMs to BCs nationwide in 2020 (RBI, 2021a). This widespread distribution of AePS devices reflects the commitment of commercial banks to enhance FI and extend DFS to underserved populations in rural regions.

4.4.3 Offline access to DFS

Apart from offering online access to financial services, the DFS ecosystem provided by commercial banks extends access to consumers even without an Internet connection. This is achieved by leveraging the Unstructured Supplementary Service Data (USSD) communication protocol. Through this USSD-based payment service, Indian banking customers can execute diverse financial transactions, including fund transfers and non-financial activities, such as checking account balances. This is accomplished by dialling a designated code, such as *99#, on their feature phones (RBI, 2021a). This USSD-based system allows individuals to conveniently access and utilise financial services using basic mobile phones, ensuring that even those without smartphones or internet access can still participate in digital financial transactions.

Building upon the comprehensive understanding provided in the preceding description of the Indian financial services sector and its endeavours towards fostering FI, the

following sections focus on furnishing background information specific to the state of UP, where the fieldwork for this study is undertaken.

4.5 UP at a glance: historical, cultural, and socio-economic accounts

Among the 28 states in India, UP holds profound significance owing to its historical eminence, cultural opulence, and religious diversity. The state's name, "Uttar", translating to "North", and "Pradesh", signifying "Province/Region" in English, inherently reflects its geographical location. UP is celebrated as the birthplace and residence of numerous ancient sages during the Vedic era, an epoch in ancient Indian history intertwined with the creation of the Vedas – the most ancient sacred Indian scriptures. The state is deeply connected with India's two renowned epics, the Ramayana and the Mahabharata, which have moulded the cultural and religious tapestry of the nation.

UP distinguishes itself through its remarkable religious diversity, a vibrant nexus where multiple faiths and cultural traditions converge. Furthermore, the state has many revered sites, including ancient temples, mosques, gurdwaras, and pilgrimage destinations, drawing devotees and tourists from around the globe. These varied religious and cultural practices contribute to the lively and pluralistic essence of UP.

In understanding the population density of UP across its four economic regions, the Eastern and Western regions surpass the state average, with 931 and 930 people per square kilometre, respectively. Conversely, the Central and Bundelkhand regions exhibit comparably lower population densities, with 785 and 329 people per square kilometre, respectively. The mean family size across UP stands at 5.97 individuals. However, this figure slightly increases in rural areas to 6.05 persons per household (UPDES, 2020). A majority of the population in this state belongs to the working-age demographic. This indicates that a substantial portion of the state's inhabitants, aged 15 to 59, are within the prime working age bracket (GOUP, 2022). This demographic trait holds significant implications for UP's economy and workforce dynamics.

Despite a 20% surge in the literacy rate in UP, as evidenced by census data spanning 2001 to 2011, a substantial gap of approximately 30% persists in complete literacy attainment. UP urban areas demonstrate an overall literacy rate of around 84%, while

rural regions register a literacy rate of nearly 68%. Notably, a disparity emerges when comparing literacy rates between genders in UP, revealing a lower female literacy rate at 63% compared to the male literacy rate of 82% (UPDES, 2020). In the selected study districts, the rural population in the GBN district has a higher literacy rate of around 75%, compared to the BS district, with approximately 69%. UP averages 61 junior schools, 37 senior schools, and 12 higher secondary schools per 100,000 people across all regions and boasts over 5,800 colleges, the highest among Indian states. These colleges are affiliated with 67 universities, the second-highest affiliations in the country (UPDES, 2020).

Alongside its expansive educational framework, the state is home to 3,268 industrial training institutes and centres to foster individuals' practical industrial skills, professional growth, and employment prospects. From an economic perspective, UP is the third-largest state of India, contributing approximately 8% to the country's national Gross Domestic Product (GDP). Collectively, these statistics highlight the educational landscape of UP, showcasing advancements in literacy rates and the supportive infrastructure in place for academic progression (GOUP, 2022).

The populace of UP partakes in diverse occupational categories, including cultivators (like farmers), agricultural labourers, household industries (encircling manufacturing, servicing, and repairs), and other service sectors (such as teachers, doctors, and bankers). A substantial majority, roughly 65% of the population, engages in agricultural pursuits (UPDES, 2020). Apart from cultivating staple crops such as wheat, rice, potatoes, pulses, and oilseeds, UP retains the distinction of being the largest sugarcane producer in the nation. The agricultural domain is a pivotal pillar of the state's economy, making significant contributions to national food production and supply chains, making UP India's "food basket" (NIPFA, 2022).

Although the economy of UP state is predominantly reliant on agricultural production, the state also boasts significant large-scale industries, including cement, cotton textile, and glass manufacturing. In addition to these industries, the people of UP derive their livelihoods from locally specialised small-scale manufacturing sectors such as wooden furniture and toys, clay toys, silkware, brassware, and sports goods. These sectors

contribute to the overall economic landscape of the state and provide employment opportunities to a diverse range of the local population (NIPFA, 2022).

According to reports, nearly 30% of UP's population resides below the poverty line (BPL), representing the largest population of impoverished individuals in India. The Central and Eastern districts encounter more substantial challenges, with higher poverty rates than the Western and Bundelkhand regions within UP (World Bank, 2016). However, the statistics show a reduction in poverty levels over the last two decades, both in urban and rural settings of the state. Starting from a poverty rate of 48% in 1994, it has progressively decreased to 29% by 2012 (World Bank, 2016).

To ensure access to food grains for individuals in the BPL category, the state allows BPL households to purchase food items at subsidised rates through designated fair-price ration shops. As part of this scheme, BPL families can buy a monthly quota of 10 kg to 20 kg of food grains at a 50% reduced price compared to households living above the poverty line. This initiative aims to support and provide affordable food options for those who need assistance meeting their basic nutritional needs (NIC, 2023). As of 2020, the state has 80,127 fair-price shops, with the GBN district hosting 378 and the BS district having 1,369 ration outlets (UPDES, 2020).

From a transportation and connectivity perspective, UP has six domestic airports and two international airports, ensuring both domestic and international air travel accessibility. The state's railway network is the largest in the country, offering extensive intra-state and inter-state connectivity to passengers. In addition to air and rail transportation, UP has a well-developed metalled road infrastructure comprising state and national highways, district roads, and rural roads, totalling approximately 336,806 kilometres. This comprehensive road network facilitates efficient transportation and connectivity within the state and beyond (NRI Department, 2022).

The availability of electricity is crucial in elevating individuals' quality of life. It is the bedrock for accessing vital amenities and services reliant on electricity, including lighting, heating, communication devices, and routine electronic appliances. While both urban and rural areas in UP have achieved full electrification, a discrepancy arises in the consistency of uninterrupted power supply between these zones (UPDES, 2020). Urban

areas are typically supplied with electricity 22 to 24 hours daily, whereas rural households receive only approximately 16 to 18 hours daily (NRI Department, 2022).

Ensuring the welfare and safety of residents while ensuring public order is one of the state's highest priorities. To achieve this goal, the state operates a comprehensive network of about 1,600 police stations, supported by about 360,000 police officers (UPDES, 2020).

The state has a robust telecommunications infrastructure bolstered by one public and six private telecom operators. These include Bharat Sanchar Nigam Limited (a public operator) and private operators such as Bharti Airtel, Idea Cellular, Vodafone Essar, Aircel Ltd, Reliance Communications, and Tata Teleservices. UP has a large subscriber base, with 127.1 million telecommunications subscribers. This includes 125.7 million wireless (mobile phone) subscribers and 1.3 million wireline subscribers. As a result, the tele density in UP stands at 57%, indicating a relatively high penetration of telecommunications services among UP's population (NRI Department, 2022). This robust telecom infrastructure and the availability of multiple telecom operators have a major role to play in contributing to improved mobile connectivity and communication within the state.

4.5.1 Financial services in UP

Regarding financial services accessibility for individuals residing in urban and rural areas of UP, there is a combined total of 17,539 commercial bank branches, comprising both public and private sector banks. This accounts for approximately 12% of the total commercial bank branches across India. On average, each branch serves around 13,000 customers, catering to the diverse financial needs of the population in UP. These bank branches play a crucial role in providing essential banking services and fostering FI by bringing accessible financial services closer to the residents of urban and rural areas in the state through DFS infrastructure (UPDES, 2020).

A report suggests that UP has achieved 100% of its FI phase I, specifying that every family is connected to the formal banking system (Singh, 2013). The report further indicates that both rural and urban areas within UP have achieved comprehensive FI, aligning with the objectives set forth by the national FI mission. This achievement signifies that

individuals in both urban and rural regions of UP now have access to a wide range of financial services, empowering them to participate in the formal financial system and benefit from various financial products and opportunities. The people of UP, especially those in rural areas, now have easy access to a diverse range of financial services through multiple channels, including brick-and-mortar bank branches, as well as DFS such as mobile banking applications, ATM outlets and BC points, providing convenient options for individuals to manage their financial needs (Singh, 2013).

Considering the contextual backdrop of UP state, embracing its diverse demographic aspects, I now present the contextual specifics concerning the seven villages where the fieldwork for this study was conducted in the subsequent sections.

4.6 Unveiling the contextual insights of seven rural communities

Based on my fieldwork encounters, this section offers an inclusive portrayal of the seven villages I had the opportunity to explore during a challenging period of the COVID-19 pandemic in 2021. Within this segment, I navigate through the contextual dimensions of these villages, covering their physical infrastructure, residents' living conditions, sources of livelihood, cultural norms, educational levels, proficiency in financial and digital matters, and their inclinations and perspectives regarding digital banking. Additionally, I outline the obstacles impeding DFS use and the status of rural branch banking in these regions.

4.6.1 The beginning of my fieldwork

While my original PhD timeline had initially planned for fieldwork in the first quarter of 2021, the unexpected emergence of the COVID-19 pandemic led to a temporary halt in those plans. However, in September 2021, I commenced fieldwork after obtaining the necessary approvals from the university's ethical and research board committee (annexed in Appendix A). Throughout this process, I prioritised the wellbeing and safety of the prospective research participants and myself.

Fortunately, the UP government had lifted COVID-19 restrictions and eased travel limitations, facilitating unrestricted movement between districts without needing emergency travel passes. Nevertheless, it is important to emphasise that compliance

with guidelines, including wearing face masks and maintaining safe physical distances, remained mandatory.

As I intended to conduct my fieldwork in the western regions of UP across two distinct districts, GBN and BS, I commenced my fieldwork in the GBN district. Although I was prepared to initiate fieldwork in either district, I began my exploration from the Chhomas village of GBN district.

In an informal telephone conversation with an acquaintance employed as a nurse in a public hospital in Dadri, a semi-urban town in the GBN district, I discovered her involvement in a COVID-19 vaccination drive in Chhomas village. Although this village was not initially included in my fieldwork plan, I utilised this unexpected opportunity to gain access to this village and commence my fieldwork journey.

During my initial visit to Chhomas village, I was introduced by my acquaintance's rural contact to a diverse group of younger and middle-aged villagers engaged in various occupations. This occasion allowed me to describe my research project and my fieldwork objectives to them. The people of Chhomas were ready to assist me in conducting my fieldwork within their village.

Chhomas

Chhomas village is located approximately 15 kilometres away from Dadri town, with easy access via a metalled road that leads to the entrance of the village's residential area. The streets within the village's residential zone are paved with interlocking tiles or big concrete blocks. On my way to the village, I observed four mobile phone towers, as depicted in Figure 4-1, providing mobile network services to this village and nearby villages.

The houses in Chhomas village are primarily constructed using bricks and mortar, with most of them being single-storied structures. Some homes have water storage tanks installed on their rooftops, ensuring a convenient water supply for the residents. Surrounding the residential area, some permanent shops and facilities are owned and operated by locals. These establishments include grocery stores, hair salons, photo studios, confectioners, locally made furniture shops, and even a small dental clinic managed by a village resident.

Figure 4-1. A View of Farmlands, Roads, and Cell Towers in Chhomas

The shops in the village are mainly located within residential structures. Usually, the front part of the house serves as the shop area, while the back is used for living and keeping livestock. This arrangement allows residents to closely integrate commercial activities with the residential spaces in the village. Additionally, I find many street vendors in the marketplace selling items like fast food, toys, and plastic utility products. Apart from retail business, the villagers are involved in farming, daily-wage jobs, and full-time salaried occupations, mainly outside the village. Most villagers prefer using their vehicles like bicycles and motorbikes for commuting, despite the availability of local transport like auto-rickshaws.

The village has a public sector bank branch with an ATM nearby, as shown in Figure 4-2. This branch is located within the central market area of the village. It also serves as the main banking facility for people in the neighbouring villages. The bank operates from 9:00 a.m. to 4:00 p.m., with employees staying until 5:30 p.m. for administrative tasks. The ATM has limited operating hours, closing for 2-3 hours in the afternoon and during the night. The bank staff includes a manager, cashier, clerk, and security guard, who also helps customers with their queries and advises them to be patient. Since the bank branch was usually crowded, I noticed that many residents (both men and women) access financial services from a BC point near the bank branch to avoid the crowd.

Figure 4-2. A Villager Using an ATM Outlet Outside the Bank in Chhomas

I found the residents of Chhomas extremely welcoming. I was offered hot beverages such as ginger milk tea or cold drinks on several occasions. They also served me homemade food, usually consisting of vegetarian curry and rice followed by a big bowl of yoghurt and locally produced jaggery. Figure 4-3 displays the typical lunch that includes curry (called Kadhi) made of sour buttermilk and gram flour with rice, which I had during my initial visit to one household in Chhomas village.

Figure 4-3. My Meal in Chhomas: Home-Cooked Rice and Curry

People of Chhomas also provided me with references to people in the neighbouring village – Maglasukh. To further my fieldwork, I decided to make Maglasukh my next stop to understand people's financial practices and explore the use of DFS.

Maglasukh

Maglasukh village is located about three kilometres away from Chhomas. The proximity of these villages made my fieldwork in both locations convenient, as I could easily commute between them without significant travel challenges.

This village's road and house structures are similar to those in Chhomas. Regarding occupations, the residents of Maglasukh are engaged in various livelihood activities. These include farming (the most common occupation among villagers), small retail businesses (e.g. grocery or general store), part-time labourer, and salaried jobs. While some households rely solely on agricultural income, others are involved in multiple income activities. For example, they may combine farming with retail business or take on part-time jobs.

As with my experiences in Chhomas, the people of Maglasukh displayed a friendly and courteous expression. Most residents I interacted with were eager to share insights into their daily routines and financial habits without any reservations. Notably, during my visits to various households in the village, I was consistently offered a welcoming drink such as milk tea or a soft beverage, leaving me with no choice but to accept. Sometimes, they even insisted I taste their locally produced cow milk or buttermilk, served in generously sized steel mugs.

Regarding financial services, residents of Maglasukh largely depend upon the bank branch and ATM outlet in Chhomas village. Nevertheless, a privately-owned banking point is managed by a local general store retailer, as illustrated in Figure 4-4. At this financial service point, individuals can digitally conduct various transactions, such as cash withdrawals, deposits, account balance inquiries, digital money transfers, bill payments, and mobile recharges, using the owner's digital device.

Figure 4-4. A Small Grocery Store Offering DFS in Maglasukh

During my informal conversations with the locals of Maglasukh, I discovered that they prefer having multiple bank accounts in banks located in the nearest town. People of this village shared their dissatisfaction with the nearby bank branch in Chhomas village, with overcrowding and unsupportive staff attitude being the most cited reasons. The villagers also expressed frustration about the lack of field staff in the bank branch in Chhomas village. This absence of field staff has caused delays in loan applications, document verifications, and processing, resulting in pending applications for several months. The locals mentioned that even simple tasks like updating the bank passbook can take several days to be completed by the bank employees, despite it being a quick process to use a passbook printing machine on the employee's desk.

Following my time in Chhomas and Maglasukh, I opted to deepen my inquiry by venturing into another village already designated in my fieldwork plan within the GBN district - Shivennagar. This village is in proximity to the town of Jewar. Located approximately 60 kilometres from Dadri, Jewar town is a densely populated semi-urban hub with robust connectivity to major regions in UP, including Aligarh, Bulandshahr, and

Noida. It also maintains convenient links to New Delhi, the national capital, via an established network of roads and railways. Jewar town boasts an array of essential amenities such as hospitals, banks, schools, and colleges. With the assistance of an acquaintance residing in Jewar town, I successfully gained access to Shivennagar to advance my fieldwork.

Shivennagar

Located a mere seven kilometres from Jewar, Shivennagar is conveniently reachable via a well-constructed roadway. The internal areas of the village, though, predominantly feature concrete block paving.

While exploring the village, I observed that the residents of Shivennagar inhabit robust single-storey homes akin to those in Chhomas and Maglasukh. Livestock, predominantly cows and buffaloes, are common in these households. While some villagers primarily keep livestock as milk sources for personal use, some sell milk to local dairy enterprises to augment their household earnings. While the village roads are paved with concrete, they tend to be relatively narrow, spanning around 10 feet in width.

Like Chhomas and Maglasukh, this village also receives an approximate power supply of 15-18 hours daily. In this village, I also witnessed a blend of traditional and modern cooking methods, with residents utilising clay stoves and Liquid Petroleum Gas (LPG) stoves for their culinary needs. However, the meal preferences are more or less similar to those of the previous two villages. I noted that the villagers' meals typically include legumes, peas, beans, or lentils used to prepare the dish "Sabzi" in Hindi. This sabzi is often accompanied by chapatti or rice, sometimes both, with yoghurt or buttermilk. To elevate the flavour of sabzi, people use homemade clarified butter.

The local farmers harness livestock waste to craft organic manure for their agricultural endeavours. Interestingly, these waste materials are ingeniously repurposed as cooking fuel in the form of dung cakes. As I enquired more about why these dung cakes are used when an LPG supply is already present, I learned that people mainly use this traditional cooking fuel to save money by reducing their purchase of LPG cylinders. Figure 4-5 visually captures a member of Shivennagar village preparing dinner, employing a clay stove fuelled by dung cakes as depicted.

Figure 4-5. A Woman Preparing Dinner on a Clay Stove in Shivennagar

I mostly ate at locals' residences during my stay in this village. The image in Figure 4-6 showcases one of my exclusive dinners consisting of two different varieties of sabzi.

Figure 4-6. My Dinner Cooked with Locally Grown Vegetables

The female household member prepared an extra sabzi as a gesture of hospitality for me as a guest in her home. In addition, there are airy deep-fried "poori" crafted from

wheat flour alongside fresh green chillies and pickles. Concluding the meal is a sweet dish called “Ghee Boora,” created using homemade clarified butter and refined sugar.

Like Chhomas and Maglasukh, the residents of Shivennagar largely depend on privately owned vehicles, such as motorcycles and tractors, for their transportation. Moreover, the residents utilised manual and auto-rickshaws to meet their travel requirements. However, certain households in the village continue to rely on bullock carts for various purposes, be it traversing between residential areas and farmlands or even travelling outside the village, as depicted in Figure 4-7.

Figure 4-7. A Front Yard View of a House in Shivennagar Featuring a Bullock Cart

During my interactions with the villagers in Shivennagar, it became evident that electricity had been a significant concern until a few years ago, with a mere 4-5 hours of daily supply. However, this situation has improved considerably, particularly benefiting the farming community. For instance, they now have the convenience of using electric water pumps for irrigation during daylight hours, in contrast to when they had to operate these pumps during unconventional hours, such as late at night or before sunrise, when power was available. Moreover, I observed that the residents of Shivennagar had found creative solutions to address power cuts, such as using car batteries to power electronic devices like table fans and mobile phone chargers.

Regarding individuals' participation in formal interview sessions, most villagers I engaged with readily agreed to participate in interviews after understanding the purpose of my research. Some individuals even proactively contacted their friends, family, and acquaintances to inform them about my PhD research and arrange suitable meeting times. The villagers' exceptional support and collaboration considerably eased the interview process and enhanced valuable data collection.

While observing and discussing the villagers' occupations, I discovered that the residents of Shivennagar are engaged in diverse economic activities to support their livelihoods. Many individuals depend on farming as their primary source of income. Furthermore, the residents generate revenue by operating small grocery shops and garment stores outside the village. Additionally, they pursue daily-wage employment opportunities, including roles as labourers, auto-rickshaw drivers, and street vendors. However, it became apparent that some villagers hold aspirations for their children beyond agriculture. They encourage their children to pursue higher education and envisage careers as doctors, computer engineers, bank officers, or lawyers rather than following the family farming tradition for their livelihoods. For instance, one middle-aged farmer expressed his desire, stating, "I want both my sons to secure corporate jobs because there are limited income prospects in farming."

Regarding financial services, Shivennagar has no bank branches or ATM counters. All banking facilities and ATMs are situated in Jewar. Additionally, I did not come across any BC points in this village. According to the information provided by the locals, much of the adult population in this village maintains bank accounts in public sector banks located in the nearest town, Jewar.

During my fieldwork in Shivennagar, I met the former village chief, known as the 'Gram Pradhan' in Hindi, through one of my research participants. During several conversations with the village chief, I learned that he maintains a positive relationship with the current village chief of the neighbouring village, Balanpur. This information presented an excellent opportunity for me to meet the head of Balanpur and request his support for conducting my fieldwork in his village. I approached the ex-chief of Shivennagar to arrange a meeting with his friend, the current chief of Balanpur. He agreed to my request

and volunteered to accompany me to Balanpur and assist in setting up the initial meeting with the village chief there.

Balanpur

Balanpur is located approximately two kilometres away from Shivennagar. While there was a paved road connecting Shivennagar to Balanpur village, the road condition was subpar. However, the streets within the village, constructed using concrete blocks, were in much better condition than the roads outside the village.

Upon arriving at the village, I parked my vehicle near the chief's residence in a vacant store. After a brief two-minute walk, we arrived at the main entrance of the chief's house. Since there was no doorbell, we entered the house through the main gate together. At this point, I want to mention that I did not observe any doorbells in any of the villages I visited during my fieldwork. People, such as guests or neighbours, would usually announce their arrival by calling out the name of a family member, typically the head of the household, in a slightly elevated voice as they entered through the main gate of the residence. People also use the iron chain (used for locking gates) hanging on the main doors like doorbells.

As we entered the chief's residence, we found the chief seated in what seemed to be the front room, possibly a designated guest area of his house, with a nameplate on the top of the room's entrance, as shown in Figure 4-8. I introduced my research objectives to the chief and handed him the participant's information sheet for further details. After reading the information sheet, he dialled another resident (using a simple feature mobile phone), inviting him to join us at his place. He also shared my mobile number with that individual. During this episode, he asked whether we wanted tea or a cold drink. Following local customs, I accepted a half-cup of tea to show appreciation for his hospitality, as I had come to understand that declining such offers was not customary.

Figure 4-8. Village Chief's Nameplate on the Top of the Main Room's Entrance

After about 10 minutes, a resident in his mid-twenties entered the room where we were seated. The chief introduced me to this individual, referring to him as Prakash (a pseudonym), and requested his assistance facilitating my fieldwork within the village. The head also cordially (but in a slightly compelling tone) invited me to stay at his house throughout my fieldwork in Balanpur village. Feeling honoured, I politely accepted the chief's invitation as I was eager to immerse myself in the local community and gain first-hand insight into their daily activities.

During my fieldwork, I discovered that Balanpur village has better sanitation than the other villages I had visited before arriving there. Like those villages, the houses in Balanpur were solidly constructed with bricks and mortar. In addition to the local means of transportation, such as auto-rickshaws, I observed that villagers relied on their two-wheelers, including bicycles and motorbikes, for their daily commuting needs. As I witnessed, the village enjoyed uninterrupted mobile network coverage, and the residents confirmed this. Like other villages, this village has four to six hours of power outages daily. However, distinguishing it from the other villages I had explored in the GBN district, Balanpur has solar-powered street light poles throughout the village, as shown in Figure 4-9.

Figure 4-9. Solar Street Lights in Balanpur

Although I had seen COVID-19 awareness slogans adorning the village walls, as depicted in Figure 4-10, I did not find every villager following these COVID-19 safety measures, such as wearing face masks or practising social distancing. This observed pattern of lax attitudes towards COVID-19 precautions appeared consistent across other villages I had visited.

Figure 4-10. COVID-19 Awareness Slogans (in Hindi) in Balanpur

During my interactions and observations, it became apparent that many villagers, regardless of age, possessed mobile phones. Typically, older individuals had basic feature phones, while the younger and middle-aged population used smartphones. Furthermore, I noticed that certain retail shops in the village prominently displayed QR code stickers for digital payments on their storefronts, as depicted in Figure 4-11.

Figure 4-11. Digital Payment QR Code Option at Retail Shop in Balanpur

Regarding financial services access, like the other two GBN villages (Shivennagar and Maglasukh), there are no bank branches, ATM outlets, or BC points in Balanpur. Residents of this village either use remote DFS channels (i.e. mobile financial applications) or travel to the bank branches located outside the village in Jewar town.

Following a series of comprehensive interviews with villagers and rural bank employees in four GBN district villages, I stretched my fieldwork to the villages of BS district in UP state. Following my plan, I contacted my relative, Jagan Prasad (a pseudonym), who had retired as principal at an intermediate school in Shikarpur town, located in the BS district. Shikarpur is a semi-urban town renowned for its historical landmark structure, Barahkhamba (in English, 12-pillar), constructed in the 1750s. This monument is surrounded by an intriguing tale that ghosts made that structure overnight. However, not everyone (or at least some people I interacted with) believes in this ghost story, and they have their own alternative versions.

Regarding population and infrastructure, Shikarpur is a densely populated town with various amenities, including schools, colleges, banks, markets, hospitals, clinics,

temples, and mosques. The town's streets are alive with activity, and its main market road, as depicted in Figure 4-12, showcases the vibrant and bustling atmosphere that characterises Shikarpur's daily life.

Figure 4-12. Main Market View of Shikarpur Town

Due to Jagan Prasad's close connections with the villagers in the rural areas surrounding Shikarpur town, I sought his assistance in gaining access to these villages and collecting my data. With Jagan Prasad as my guide, we visited three villages in the BS district, commencing my fieldwork in Machru village.

Machru

Machru village is about six kilometres from Shikarpur town, a smaller village in terms of population and number of households compared to other villages I visited during the fieldwork. Machru village, like other villages I visited, consists of solid brick and mortar houses, predominantly single-storied in structure. During my visit to various households, I noticed that the residents have amenities, such as television sets connected to satellite dishes, water coolers to beat the heat in summer, and motorbikes and bicycles for

commuting. Residents use feature phones and smartphones for various purposes, including communication, entertainment, and financial transactions.

Like other villages, the residents of Machru also get a power supply that spans approximately 16-18 hours a day, a significant relief as emphasised by the locals. Figure 4-13 portrays the typical house structures and basic amenities in Machru village.

Figure 4-13. Pavements and House Structures in Machru

In terms of occupations, many individuals in this village are primarily involved in agricultural activities, focusing mainly on cultivating crops such as wheat, paddy, sugarcane, and potatoes. Additionally, people supplement their household income by undertaking daily wage jobs, such as working as farm labourers or selling vegetables.

Regarding financial services, Machru lacks bank branches, ATM outlets and BC points. The villagers, particularly non-DFS users, must travel to the nearest town, Shikarpur, to access financial services. Despite this limitation, the village showcased its residents' simplicity, adaptability, and resourcefulness in embracing modern technologies while retaining traditional rural living.

Following my time in Machru, where I interviewed five residents named Bharti, Tilak, Vairaj, Raghu, and Solanki, I proceeded with my fieldwork as scheduled, venturing into Bhatona village, near Shikarpur town.

Bhatona

Bhatona is located approximately 10 kilometres away from Machru village and four kilometres from the nearest town, Shikarpur. Our journey took us through a poorly maintained metalled road, pierced with potholes, surrounded by extensive farmlands on either side. After utilising all the driving skills I had acquired over the past 15 years, we finally arrived at the entrance of the residential area in Bhatona village. Fortunately, the roads within the village were in better condition than the connecting road. Like other villages, these roads were made of bricks and concrete blocks. However, their narrow width posed a challenge for two vehicles, such as small 4-seater hatchback cars, to pass each other without the risk of scratching.

A primary school with a more spacious entryway stood at the residential area's entrance. Taking the advice offered by a resident, I parked my vehicle inside the school premises. During my stay, as I explored the village, I observed that the villagers' houses were constructed using durable materials such as bricks and cement. Some houses were relatively small, comprising only two rooms and a veranda with a modest gated entrance. However, there were larger houses with four to five rooms and spacious verandas to accommodate two tractors at a time through a wide gate entrance. Some residents in this village have separate areas designated for keeping their livestock.

During my time there, I encountered regular power outages lasting approximately five to six hours per day. However, the resourceful residents of the village employed power inverters – battery-operated devices – as a backup solution to cope with these electricity disruptions.

The residents of this village partake in various income-generating activities. Farming is the primary income source for households, typically carried out by middle-aged and older family members. On the other hand, the younger individuals in the village are primarily engaged in small businesses such as grocery shops, ready-made garments shops, chemist stores, and milk dairy. The image in Figure 4-14 depicts a small milk dairy operated by a local resident using a battery-operated digital milk testing machine as a supplementary source of income. Additionally, some of them pursue full-time salaried jobs, such as school teaching or working as sales executives, outside the village.

Figure 4-14. Villager Operating Digital Milk Quality Testing Machine in Bhatona

Regarding digital communication, my observations reveal that most male residents in the village possess mobile phones. Similarly to other villages, the older and middle-aged members of this village typically have feature phones, while the younger individuals own smartphones for communicating and accessing financial services. Notably, I also observed some younger females in Bhatona owning smartphones, although I did not come across them using these digital devices for performing financial transactions.

In addition, like the other villages I explored, households in Bhatona commonly had televisions, fans, water coolers, and motorbikes. While a few families still relied on bullock carts for transportation, most owned motorbikes, and a few even had small cars. Furthermore, some households possessed tractors, highlighting their adoption of mechanised farming practices.

Regarding financial services facilities, the nearest bank and ATM branches to this village are in Shikarpur town. The town offers a range of options, including branches of private and public sector banks and several ATM and BC outlets. Figure 4-15 depicts males and females in this rural area accessing financial services through BC points in Shikarpur town.

Figure 4-15. People Accessing Financial Services at BC Points in Shikarpur

As each day of my fieldwork unfolded, I delved deeper into the intricacies of these rural communities and people's daily routines and practices. Motivated to gain further insights, I decided to expand my fieldwork and ventured to another village called Mandwaya in the BS district.

Mandwaya

Mandwaya is about eight kilometres from Bhatona village and four kilometres from Shikarpur town. With a reference from one of the research participants, Gayatri from Bhatona, and the assistance of Jagan Prasad, we reached Mandwaya by passing through a magnificent tall gate structure, as depicted in Figure 4-16.

Figure 4-16. A Tall Gate Type Structure at Entrance of Mandwaya

Regarding land area, population, and number of households, Mandwaya is relatively smaller than Bhatona village. However, like the other villages I have visited, Mandwaya

is a diverse community comprising people from various castes and religions. The village has a similar infrastructure, with houses, roads, and basic amenities that align with what I have observed in the other villages. Similarly to other villages, the people of Mandwaya have 24/7 access to a mobile network through a communication tower mounted inside the village, as shown in Figure 4-17.

Figure 4-17. A Mobile Network Tower in Mandwaya

The people of Mandwaya engage in various income-producing activities, including farming, labour work, full-time employment in schools or private companies in nearby cities, owning small businesses like general stores, or retired individuals receiving pensions. They have access to essential daily-life resources to meet their basic needs. These include an adequate supply of nutritious food and clean drinking water, secure and permanent housing that provides safety and privacy, educational opportunities through private and public institutions located outside the village, primary healthcare services, medications, and sanitation facilities such as enclosed toilets and bathrooms to ensure proper personal hygiene and prevent the spread of diseases. However, to access face-to-face financial services, such as bank branches, ATMs and BC points, people of Mandwaya must travel outside the village to their nearest town, Shikarpur. It was common to see households in this village owning motorbikes. I have also observed a few houses possessing small hatchback cars, as shown in Figure 4-18. However, through casual conversation with a retired ex-serviceman, I discovered that people in

this village use their cars only on special occasions, such as attending weddings or events outside the village, often in the company of family members, friends, or neighbours.

Figure 4-18. Front Courtyard View of Retired Resident's House in Mandwaya

Another noteworthy infrastructural aspect of these villages was the presence of sanitation facilities in all the houses, such as toilets and bathrooms. Furthermore, alongside the installation of hand pumps to extract drinking water from the ground in most of the houses, each house I visited had piped water supply lines.

In addition to my visits to the aforementioned villages, I visited two additional villages in the BS district. Unfortunately, during those visits, I could not identify suitable participants for my data collection. However, despite the brief duration of these trips, I interacted with locals. During these interactions, I observed the physical surroundings and engaged in informal conversations about their daily lives and experiences with financial services. Through these observations and casual discussions, I noted several similarities in terms of physical amenities, economic activities, access to financial services, and cultural practices I had previously observed and documented during my stays in other villages within both districts.

At this point, I had spent nearly three months conducting 35 interview sessions with rural residents and six interviews with various bank employees in GBN and BS districts. Then, I decided to return to my hometown, Meerut, which is approximately 100 kilometres away from Shikarpur town. However, I soon realised that my fieldwork had

not yet concluded. In December 2021, I visited Chhomas and Bhatona villages to conduct five additional interviews.

Since the research participants had my contact number, I received calls from acquaintances of some participants who expressed their willingness to share their experiences with DFS. Without hesitation, I returned to these villages and engaged with these prospective participants. I made pre-scheduled visits to these villages, typically lasting for a day or two, to conduct interviews so that I could gain more depth into my research.

4.7 Cultural practices within these rural communities

In this section, I present a detailed account of the standard cultural practices observed among the inhabitants residing in the seven villages that I had the privilege to explore during my research in these rural enclaves. Moreover, I provide a systematic overview of the gradual transformations that have taken place within these practices, supported by first-hand narratives shared by individuals belonging to these communities.

The most prominent characteristic of their culture is the presence of strong bonds and commitment among community members. I use some instances witnessed during my stay in these villages to portray the existence of robust interpersonal connections and dedication within the culture of these villagers.

A resident of Bhatona village narrates a compelling example that exemplifies their tightly-knit relationships. In an informal conversation, an individual recounted an incident illuminating the depth and extent of mutual assistance in these communities. According to the villager, his wife encountered a potentially life-threatening situation when she received an electric shock while attempting to connect some equipment. Unfortunately, he was not present in the village at that time. Fortunately, their daughter discovered her mother in distress and raised a cry for help. Promptly responding to the urgent call, two neighbouring individuals swiftly scaled the adjoining walls of a nearby house, untangled the woman from the electric source while risking their safety, and promptly transported her to the hospital located in the nearby town of Shikarpur. The villager further revealed that one of the assisting neighbours even sustained an injury to

his leg while leaping over the wall, underscoring the selflessness and physical sacrifices made in the pursuit of aiding others.

Furthermore, another first-hand account from a Shivennagar resident shed light on a culture of assistance within their tightly knit network, specifically during the demonetisation period in India. According to this individual, the effects of demonetisation were mitigated within their village as community members supported one another by addressing urgent cash needs, such as engaging in currency exchanges (e.g. providing smaller currency denominations in exchange for demonetised ones). As stated by the locals, these acts of support did not yield any personal advantage to the individuals facilitating the exchange of demonetised currency.

Another compelling instance I observed during my fieldwork, exemplifying the bonding and commitment among these community members, is their collective support and assistance during agricultural endeavours. During my observations, I discovered that these individuals readily extended their support to neighbours and friends intending to do agricultural tasks, particularly when the rightful owner of a farm could not work on his farm due to illness or other incapacities. In such instances, these neighbours and friends readily assumed the responsibility of caring for the farm, ensuring that the farm owner would not face any crop or income loss. This act of lending a helping hand not only showcased the depth of their interdependence and willingness to extend themselves for the wellbeing of others but also underscored the deep-rooted sense of collective welfare prevalent in these rural enclaves.

During my stay in Balanpur village, I had the opportunity to witness an incident that vividly demonstrated the commitment, mutual support, and solidarity of the residents of this village, as well as Shivennagar's. The incident involved a group of middle-aged individuals from both villages coming together to willingly take legal responsibility for a fellow villager (of Balanpur) who had been detained at the local police station due to some prior event. As I learned from other villagers, these groups of individuals also collected some money as a backup to manage the expenses of legal proceedings and alleviate the financial burden on the affected individual.

During my fieldwork, I encountered an additional noteworthy instance that underscores the prevailing culture of assistance among the villagers of Chhomas, particularly within

the small business community. I observed that these business handlers (i.e. retail shopkeepers) in Chhomas village actively supported one another in their daily business activities. An example of this was witnessed when a grocery shopkeeper sought the help of a neighbouring shopkeeper to oversee his store and serve his customers during periods when the owner was unavailable. However, these requests for assistance were typically for short durations. This display of cooperative behaviour within the local business community again exemplifies the mutual reliance and support that characterises the cultural fabric of Chhomas village.

4.7.1 Dissemination of information within the villages

My observations also revealed an exciting and common phenomenon related to information spreading within these rural communities. To my astonishment, I encountered numerous instances where individuals residing in these villages were already familiar with my identity (i.e. my name and hometown), the purpose of my visit to these villages, and even the country where I am pursuing my PhD program. It was as if news of my presence and intentions had traversed through the community like a rapidly spreading blaze, reaching every corner of these settlements.

This unexpected level of awareness among the villagers about my background and objectives often surprised me regarding the underlying mechanisms that facilitated such efficient information transmission. This is apparently because of the tight-knit nature of relationships and expeditious verbal communication channels that formed the backbone of this rapid knowledge dissemination and relayed the details about my arrival from one person to another within these rural communities.

In addition to the rapid dissemination of information about my presence and research objectives, I made another noteworthy observation during my fieldwork: the residents of these rural communities displayed a keen awareness of the activities and whereabouts of their fellow community members. It became evident that they knew about the movements and engagements of individuals within their social circles, such as neighbours and friends. As I observed, these villagers seemed familiar with when their neighbours and friends were departing the village, their journey's specific purpose, and even the expected duration of their absence.

Besides face-to-face interactions, the availability of affordable cell phone communications has become a critical factor in maintaining the community awareness system that has evolved over generations within these communities. These observations made it apparent that individuals in these villages leverage the capabilities of mobile phone communication to remain knowledgeable about the activities and whereabouts of their fellow community members.

Overall, I found this cultural practice in all villages I visited, where information is shared quickly and extensively, allowing these villagers to be well-informed about each other's routines and activities. Indeed, these activities demonstrate a strong culture of interconnectedness and effective information exchange within these rural communities.

4.7.2 Resource-sharing practice within these rural communities

Among the villagers, I have observed another fascinating and prevalent cultural practice of resource-sharing. It is common to witness informal and reciprocal acts of lending and borrowing various resources within these communities. These resources can range from farming equipment like tractors to motorbikes for commuting. I also found villagers, particularly in Bhatona, readily offer rooms in their houses to accommodate guests during social occasions such as weddings, displaying a strong sense of support for one another's needs.

I also noted the existence of informal money-lending practices within these rural communities. Through casual discussions with villagers, I learned that individuals in a more stable financial position provide loans to fellow villagers within their close social circles, which may include relatives, neighbours, or friends. However, these loans are typically based on mutual agreements and involve a monthly interest rate. Interestingly, these financial transactions occur without formal paperwork, relying solely on the trust and confidence shared between the lender and borrower. As I was able to manage to speak to individuals who are actively engaged in these money lending practices, I learned that they had never encountered a situation where the borrower refused to repay the loan or provided an insufficient amount. However, there were instances of delays in repayments.

According to the information shared by the villagers, the practice of money lending and borrowing primarily serves the purpose of meeting financial needs related to events such as children's weddings or business transactions requiring a substantial amount of money. Despite having the option to obtain a loan from a bank at lower interest rates, these individuals prefer approaching someone within their social circles. This preference is based on a belief that seeking assistance from someone they know can help them avoid the complexities of paperwork and limitations on loan amounts imposed by financial institutions.

4.7.3 Urban influence on cultural practices of these rural enclaves

During my time in the villages, I noticed that the local communities, especially the younger generation, are influenced by a culture typically associated with urban areas. A resident in his late 50s from Mandwaya village also confirmed my observation while sharing his thoughts on the changing rural traditions, citing an example of how urban culture has impacted birthday celebrations among the young members of the village. According to this individual, birthdays used to be commemorated by either visiting the temple in the morning for prayers or performing a ritual known as "Havan" at home, where friends and neighbours gathered to make offerings into a sacred fire while reciting mantras and prayers. Afterwards, a holy food called "Prasad" would be distributed to all the guests. However, in recent times, especially among the younger population, birthday celebrations have transformed into events featuring cakes, lively music, and fast food.

This change in traditional customs can also be observed in other social events among these rural enclaves. Residents from Shivennagar village described to me the prominent alteration of rural wedding customs. During a casual conversation with some villagers after dinner, they explained how wedding ceremonies in villages have evolved over the past few years. Since weddings hold significant social importance and involve members of close-knit relationships within the community and neighbouring rural areas, these events typically have extensive community participation, with invitations extended to people from nearby villages as well. Previously, these weddings would often occur in the open fields, with wedding tents adorned with marigold flowers for their religious significance and economic value. Guests would be served regional dishes, usually comprising a few varieties prepared with locally grown vegetables readily available on

the village farms. People were not very concerned about their wedding attire. Married individuals, typically in their middle age, often wear their wedding suits for such occasions without any reservations about repetition. However, this tradition has been overshadowed by urban customs, which, in their opinion, impose greater financial pressure on the parents, especially the bride's family.

According to these villagers, the new style of weddings necessitates parents' reserving banquet halls in nearby small towns or cities. Accommodating and hosting many guests naturally escalates the cost of the arrangements. Both the bride and groom, as well as their families, now make significant investments in wedding attire and jewellery, particularly for the bride. The traditional varieties of regional dishes have been replaced by a wide range of delicacies, further contributing to the overall wedding expenses. Moreover, they highlighted the prevalence of the dowry system in rural weddings. The dowry conditions, including cash, furniture, utensils, and clothing for the groom's parents and relatives, are usually decided by both the groom's and bride's parents during the initial meetings. However, they mentioned that negotiation about dowry conditions is possible if the bride is educated and employed.

4.8 Formal education, financial knowledge, and digital skills

During my observations and conversations with members of these rural communities, I noticed a disparity in literacy levels among different age groups. The younger generation demonstrated a higher level of formal education than their middle-aged counterparts (ages 45–55) and elderly individuals (ages 55 and above). While the younger individuals had a minimum education level of completing higher secondary education, with some even achieving master's degrees, the middle-aged and elderly individuals typically had education up to, but not necessarily completed, the higher secondary level, with the majority having only received elementary schooling.

To the best of my understanding and familiarity, rural areas in UP state were known for a prevalent gender disparity in educational opportunities, with parents often prioritising boys' education while neglecting girls' educational needs. Contrary to my (now updated) understanding, I observed a significant change in the perspective of parents residing in these villages. Regardless of gender, parents in these rural enclaves now actively aspire for their children to pursue higher education. The emphasis on education reflects a

cultural change, marking a deviation from traditional norms and a greater appreciation of the value and importance of education for both boys and girls within these rural communities. I believe that by embracing a more inclusive approach to education, rural parents are not only empowering their children with knowledge and skills but also challenging traditional gender roles and promoting gender equality. Overall, this shift in attitudes towards education demonstrates broader societal changes in these rural regions, highlighting the increasing recognition of education as a key driver of social and economic progress.

Regarding access to banking services, nearly all adults in these communities, regardless of gender, have connected to the formal banking system by having a bank account. However, I observed that there is also a lack of understanding and awareness regarding financial products among the rural community members. For example, most farmers in these villages have availed themselves of the farmer's loan offered under the Kisan Credit Card (KCC) scheme, which the Government of India provides to address farmers' urgent agricultural financial requirements, including the procurement of seeds, fertilisers, pesticides, and cash for production needs (Kolloju, 2014). During my conversations with farmers who availed themselves of the KCC scheme, I found that many of these beneficiaries are unaware of the terms and conditions associated with this loan scheme, except for the interest rate and repayment due date.

According to one farmer from Mandwaya, people in his village blindly follow the actions of other farmers: "Others want to do the same if one person applies for a KCC loan." They often sign the loan agreement without taking the time to read and understand its contents, solely focused on obtaining the loan funds. I also learned that some farmers even use these funds for purposes other than agriculture (e.g. renovating a house). In fact, a few go as far as lending the loan money to others at higher interest rates without fearing repercussions from their banking institution.

I closely examined the digital skills prevalent among individuals in the studied villages during my research. I discovered that most people between 18 and 45 years are familiar with various digital technologies. They are adept at operating smartphones, using popular applications such as WhatsApp for communication, and accessing online platforms like YouTube for video content. Furthermore, I observed their proficiency in

utilising digital milk testing machines, showcasing their ability to adopt digital solutions for specific tasks.

However, when engaging with DFS channels and devices, there are individuals who lack confidence, particularly those in the old-aged bracket. Despite this, I noted that most banking customers, falling in the younger and middle-aged groups within these villages, demonstrate comfort and competence in using DFS channels. While the younger generation exhibits greater familiarity and confidence in utilising MFS, individuals in their early 50s show ease with face-to-face DFS, such as ATM or BC outlets.

4.9 Preference for DFS channels

Individuals residing in these rural areas access DFS through different online and onsite channels. Among the active DFS users, a significant majority preferred digital mobile applications to access financial services. Specifically, they were more inclined towards utilising third-party digital payment applications such as BHIM, PhonePe and Google Pay instead of mobile banking applications offered directly by banking institutions.

Upon interacting with the users, I discovered that the primary reason behind this preference is the user-friendly and efficient interface provided by third-party digital payment applications. These platforms' ease of use and swift transaction processing were key factors influencing the users' choice. However, it is essential to note that active DFS users also utilise banks' mobile applications, particularly when they need to engage in transactions with higher values exceeding the daily limits imposed by third-party DFS applications. For such weighty transactions, these people use National Electronic Funds Transfer (NEFT) or Real-Time Gross Settlement Systems (RTGS) fund transfer systems offered by banks' mobile applications.

Apart from MFS, DFS users in these rural communities rely heavily on their ATM debit cards primarily for accessing cash. On the other hand, passive DFS users tend to approach BC points to access financial services, such as small withdrawals, deposits, and transfers. However, these villagers still rely on the nearest bank branch for more complex transactions, such as obtaining loans. Their belief, with few exceptions, is that loan transactions require complicated paperwork that is difficult to execute through mobile DFS channels. Additionally, there is a perception that submitting a loan request

via mobile DFS channels may not reach the bank manager or be taken seriously. Consequently, they prefer face-to-face interactions, such as meeting the bank manager personally with the required documents.

Regarding BC points, my investigations revealed that rural communities are utilising these outlets to access financial services. As I observed, both men and women visit these BC points and perform financial transactions using AePS. I found that, typically, these BC points are situated in nearby towns, except for Chhomas village. I also noticed that the working hours of these BC points varied depending on the agents' availability and decisions. Some BC points closed during the daytime, while others remained open until late evening. It was common to see frequent visitors at these BC points, indicating their importance in providing financial services to the local population. In fact, some BC points I visited were heavily crowded, making it challenging for all customers to stand comfortably within the premises.

Furthermore, despite the objective of the BC model being to expand the reach of banking services within rural areas and provide convenient access to financial services for rural customers, my observations revealed that the majority of BC points were situated near their associated banks, somewhat limiting the actual effectiveness of the BC model.

4.10 DFS challenges

Based on my observations and informal conversations with villagers and DFS providers, I became aware of the various barriers that hinder the utilisation of DFS among rural individuals. These challenges primarily affect female members in the age range of 15 to 65 and above, as well as male members in the age range of 55 to 65 and above. I will now outline these constraining factors in the subsequent sections.

4.10.1 Limited awareness of DFS

Upon observation, it became evident that insufficient support from service providers, specifically rural banking institutions, plays a significant role in the limited awareness and skills related to DFS among rural individuals. This lack of support further constrains them from utilising DFS to its full potential.

Despite various awareness programmes and models, such as BC points, rural banking institutions seem ineffective in disseminating information about DFS to rural communities. My close observations revealed the lack of dedicated resources or programmes specifically designed to educate and create awareness about DFS among rural customers. The absence of adequate training and guidance from these service providers contributes to the limited skills of rural people when it comes to utilising DFS.

During my time in these villages, the villagers expressed their concerns regarding the absence of training and educational programs offered by their financial service providers. For example, a young villager from Chhomas, who actively uses DFS, voiced his concern about the lack of formal training initiatives the local bank branch provided:

> People in my village lack awareness about [financial products and schemes]. It is essential for them to receive training from a reliable source [referring to bank employees]. Having someone from the bank come and provide training on [DFS] would be more beneficial.

Similarly, a resident from Balanpur expressed a related sentiment, stating, “People are unaware of the advantages [offered by DFS] as there are no awareness programs from banks. This is one of the reasons people are not confident [about DFS].”

However, bank employees have a different perspective regarding their awareness initiatives in rural areas. For example, when I inquired about the efforts made by a rural bank branch to promote DFS awareness among villagers, I received the following response from one of the senior rural bank employees (Shalini) I interviewed:

> Indeed, our bank has implemented a digital village program that involves setting up camps within villages, covering not only the immediate village but also reaching out to people from 3-4 nearby villages. The primary objective of this program is to educate rural individuals about various banking products and services available to them and how they can access these services digitally.

4.10.2 Irregular income

I observed that the inconsistent earnings of villagers contribute to their reluctance to embrace DFS. These individuals typically include daily-wage labourers with unpredictable income that often falls short of covering their household expenses. Many rural people earn cash income and prefer to keep it readily available at home rather

than depositing it in banks. During my fieldwork, I conversed with some daily-wage workers, such as autorickshaw drivers, who receive their earnings in cash daily. Despite having bank accounts, many of them do not utilise DFS. According to one driver, he must pay a fixed daily rent to the autorickshaw owner, and there are days when he does not earn enough from passenger rides, forcing him to use his previous earnings to cover the rent. He further explained that he sees no benefits from DFS and rarely uses his bank account.

A senior bank executive in a rural branch of the BS district has also highlighted the significance of income levels as a major obstacle to rural people's adoption of DFS. During an interview, this employee emphasised the crucial role of the income aspect by stating: "I believe that while banks are working towards raising awareness among rural customers, the inclination towards DFS will not increase until people's income sources and levels are improved."

Besides irregular income patterns, the costs associated with some DFS channels, such as ATM cards and short message service (SMS) charges, also contribute to the lack of integration of DFS among rural individuals. Some villagers choose not to opt for DFS due to the fees imposed by banking institutions on SMS alerts and the maintenance of ATM debit cards. While speaking to a villager from Chhomas, I observed his unwillingness as he expressed, "I do not want to pay for service charges."

Similarly, during a casual conversation, a young villager (Pradeep) from Bhatona mentioned to me the villagers' perception of DFS charges, stating:

> Whenever the villagers find out about deductions, they quickly go to the bank and ask the bank employees to stop that digital service... they believe that there is no need to pay unnecessary charges to the bank.

A senior bank employee, Prashant, has also identified DFS charges as a contributing factor to the reluctance of rural consumers towards DFS. During an interview, Prashant mentioned:

> Not all customers prefer to use DFS due to the associated charges. In fact, every day, there are instances where customers come to the branch and express their dissatisfaction by arguing about the service charges.

4.10.3 Cyber threat concerns

I identified that fears related to DFS also play a significant role in preventing these villagers from using DFS, such as MFS or ATM cards. The primary fear among rural people, especially passive users, is linked to the risk of cyber fraud. These individuals believe that DFS applications are unsafe because cyber scammers can potentially steal money from their bank accounts if they use mobile banking or debit cards. For example, during a casual conversation, an elderly villager expressed his fear of DFS, stating, “There is so much digital fraud happening nowadays... people like us [referring to older individuals] are afraid to use these [DFS] technologies.” Some research participants also mentioned the fear of DFS among their elderly family members. Pradeep, for instance, shared that no one in his family, except himself, uses DFS. Despite his efforts to convince his father to learn how to use DFS, his father remains fearful of cyber scams. Pradeep also noted that other elderly individuals in his village in his father’s age group share the same attitude toward DFS, saying, “This is not only my father’s opinion... other elderly people in my village also have similar thoughts.”

A bank employee who works in a rural area shared the first-hand experience he had with elderly rural customers. He mentioned that cyber fraud is a significant obstacle preventing older individuals from embracing DFS. He explained that bank employees face challenges in persuading elderly villagers to adopt DFS options, like ATM cards: “Old-aged customers run away from [DFS]. We have to struggle to give them debit cards because they think fraudsters can easily trap and steal their money.”

The fear of losing ATM debit cards is another factor contributing to the reluctance of rural individuals to adopt DFS. A middle-aged villager who works as a daily-wage painter and engages in farming on his family’s agricultural land in Maglasukh explained why he hesitates to obtain an ATM card from the bank despite being aware of its advantages and receiving advice from a bank employee to use DFS:

> Often, the cashier [bank employee] suggests that I get the ATM card. But I ignored his suggestion. I know [ATM card] provides flexibility in performing financial transactions. But I am hesitant to use it. What if I lose it somewhere? Or someone snatch it from me. It is a big tension.

Likewise, another resident from Shivennagar village confirmed the villagers’ apprehension about losing their DFS devices, which hinders their adoption of DFS.

During our casual conversations, he shared his wife's fear regarding ATM cards: "My wife also has a debit card, but she refrains from using it due to the fear of dropping or forgetting it."

Apart from the concern of losing their DFS devices, rural individuals have also expressed fears about compromising their confidential information to cyber scammers. A farmer from Chhomas describes his doubts about the security of his personal information when using DFS: "I wonder if it is safe. What if someone gets hold of my information and misuses it? These digital services may offer convenience, but the risk of my personal data being compromised worries me."

Likewise, another person from Mandwaya also harbours some doubts regarding information safety in relation to DFS. Despite being an active user of DFS and acknowledging the advantages it offers, this participant still maintains a lingering concern about the risks of information hacking: "I understand that [personal] information is required [by DFS providers] to verify the authenticity of a customer, but hackers are stealing our information from them and looting people."

4.10.4 Gender-based finance practices

Information gathered from research participants and the female members of the rural households revealed that, typically, male members of these rural families hold the financial reins. As female members do not feel it necessary to participate much in financial affairs, this affects their interest in performing financial transactions, thereby reducing the appeal of learning and using DFS.

Most rural females are connected to the formal financial system (i.e., having single or joint bank accounts), but most do not operate their bank accounts, like ATM cards. Instead, these responsibilities are often handled by the male members of the household. For example, a farmer shared that "ladies are usually not much concerned about financial transactions of households." This practice was further corroborated by one of the research participants. During an informal conversation with Dhiraj, I asked if he knew of any rural female who independently operated her bank account and used DFS. He responded clearly: "See, in villages, mainly male family members do the financial transactions… females have bank accounts, but I do not think they use their accounts."

Continuing with my inquiry, I approached another research participant, Pradeep, to gather insights regarding the utilisation of DFS by women in these rural communities. Once again, the response reaffirmed the prevailing dominance of males in financial matters within rural households: “If any financial transaction is to be done, then male members of the house will do it.”

One female participant, Gayatri, explained why she does not utilise her bank account independently. Despite being a college graduate and working as a Hindi language teacher in a school near her village, she expressed her lack of interest in her family’s financial matters:

> We live in a culture where ladies do not much participate in financial matters. When my husband is already looking after all the financial affairs, I do not think there is a need for my interference in those matters.

Having heard these views, I further pursued the bank employee to clarify this male dominance phenomenon. Corroborating the notion of male dominance in financial matters within rural households, a bank employee, Sujon, with experience in urban and rural areas, affirmed this observation. According to him, the ratio of female customers is lower in rural areas than in urban areas. Additionally, he clarified that a significant portion of female customer accounts in rural areas are usually held by women receiving pensions on behalf of their deceased partners.

It is crucial to highlight that the observed dominance within these rural households does not stem from the intention of a male member to inhibit a female member from interfering with or managing finances. From my observations, it is clear that men and women in these rural communities have established clear boundaries between housework responsibilities. This indicates that female members have the freedom and opportunity to actively participate in financial matters and manage their finances if they choose to do so. This observation was reinforced by witnessing rural females operating their bank accounts and utilising DFS, including ATM debit cards, mobile applications, and BC points, within these rural areas. Furthermore, conversations with BCs operating in these regions confirmed that they provide financial services to female customers on a daily basis.

4.11 Insights into rural branch banking

This section presents an overview of the contextual information concerning rural branch banking. This information is gathered from extensive observations and conversations I had with villagers and bank employees during my fieldwork in the rural areas of the two districts.

In general, the rural bank branches, whether private or public banks are situated in the nearest town, just outside the villages. This pattern holds true for the majority of rural areas, where individuals residing in villages need to travel to nearby towns to access banking services. However, there is an exception in the case of Chhomas village.

I observed an apparent disparity in customer footfall between private and public sector banks. Public sector bank branches were consistently bustling with customers, indicating a higher demand for their financial services. On the other hand, private bank branches had noticeably fewer customers seeking financial services. The difference in customer footfall between private and public sector banks indicates a preference among rural customers for public sector banks. This preference could be attributed to factors such as trust in the reliability and stability of public sector banks, as well as the affordability of their services.

In terms of branch entrance and facilities, there were notable differences between public and private bank branches. Public bank branches typically had narrow entryways with iron-channel doors, and visitors were closely monitored by armed security guards. In contrast, private bank branches had wider entry doors and more appealing physical work settings. These included staff cubicles, a greater emphasis on cleanliness, and more comfortable waiting and sitting areas for customers. The physical environment of private bank branches appeared to be better maintained and more inviting than that of public bank branches.

During my observations, I noted that rural bank branches were implementing COVID-19 prevention guidelines. They had prominently displayed posters at the entry, displaying “No entry in the bank without a face mask.” Security guards also instructed visitors and ensured they wore face masks before entering the branch. However, despite these

measures, I observed that some rural customers disregarded the COVID-19 guidelines after entering into the bank premises.

Usually, the bank branches have their ATM outlets near the branch office area. Although ATMs are intended to be accessible 24 hours a day, some have specific operating hours. For example, in Chhomas, the ATM counter remained closed for two to three hours during the daytime (specifically from 4 p.m. to 7 p.m.), reopened until 10 p.m., and shut again until 7 a.m. the following morning. I also noticed the presence of a security guard positioned inside these ATM outlets. Upon inquiry with the ATM guard, it was revealed that he was the sole guard responsible for the ATM outlet throughout the day. He mentioned that he closes the ATM for breaks, such as lunch and rest periods, ensuring his own well-being and the safety of customers as well as the ATM itself. On several occasions, I observed multiple customers waiting inside the ATM counters while only one person was actively using the machine. This led to a scenario where customers had to patiently wait their turn to access the ATM services.

4.12 Chapter conclusion

As we move forward, this chapter lays the groundwork for subsequent chapters of this thesis. In this chapter, I comprehensively explored India's financial services landscape and its push for FI. I have zoomed in on the UP state, shedding light on its physical and cultural dimensions. Highlighting my exploration of seven villages, I have provided critical details based on my observations and conversations with locals within these rural enclaves. These insights present village life, culture, financial awareness, DFS challenges and skills. This foundational information equips readers to understand the research context and interpret upcoming findings thoughtfully.

Chapter 5 Thematic Kaleidoscope

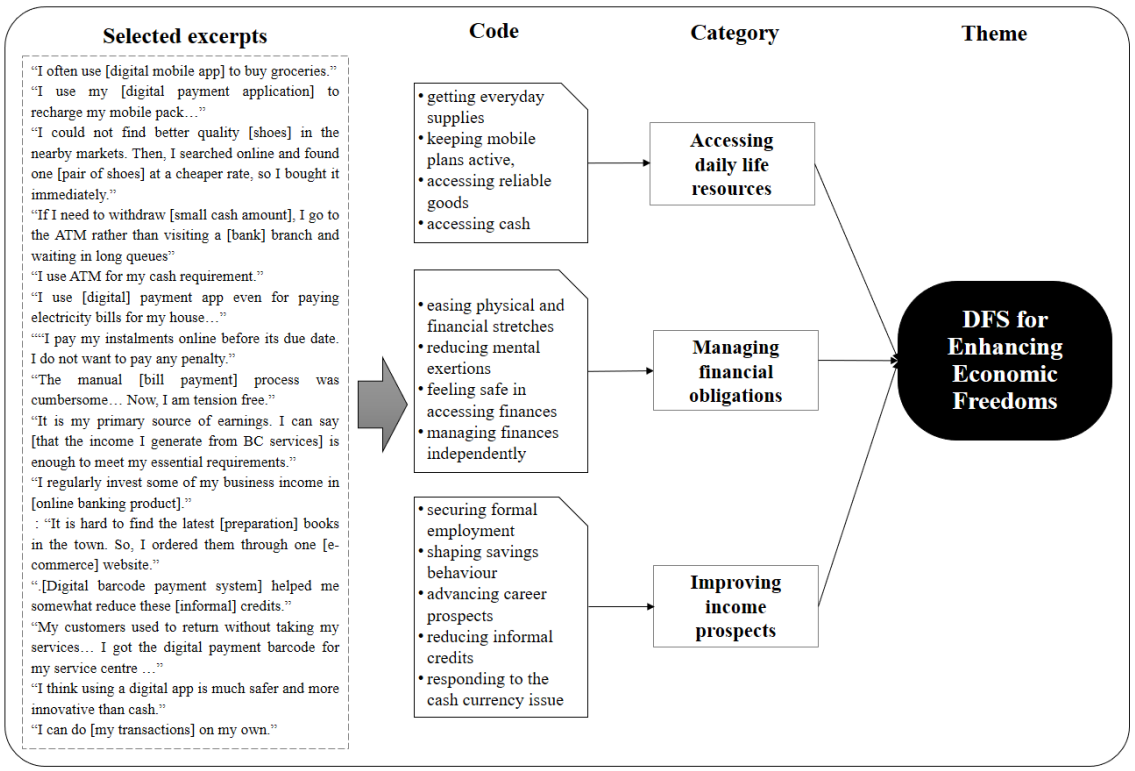
5.1 Chapter outline

This chapter reports my findings in light of the overarching research question relating to the use of DFS by rural individuals in their natural rural settings. How do individuals in rural regions of India leverage DFS to achieve life goals? I present my findings in the form of core themes, their associated categories, and the corresponding codes identified using an inductive approach. The inductive thematic analysis yielded three core themes: DFS for enhancing economic freedoms, DFS for expanding financial literacy, and DFS for supporting and empowering others. The findings under each theme are substantiated by interview excerpts and visually complemented by relevant fieldwork photographs. This chapter lays the foundation for extracting theoretical insights into the DFS practices among individuals residing in seven villages of UP state.

5.2 Theme 1: DFS for enhancing economic freedoms

DFS for enhancing economic freedoms describes DFS's role in easing the daily lives of people in these villages. This theme constitutes three categories: 1) accessing daily life resources, 2) managing financial obligations, and 3) improving income prospects. Figure 5-1 shows relevant excerpts, codes and categories identified during the thematic process to develop this theme. The first category presents people's use of DFS to access resources required to meet their routine necessities, such as everyday food supplies, mobile communication, durable goods, and cash. The second category reveals the importance of DFS in the lives of these villagers in managing their financial commitments, such as utility bills, life insurance premiums, and loan instalments, without having physical, financial, and mental discomforts. This category also underscores the role of DFS in reducing fears of accessing financial services. The third category signifies the importance of DFS in enabling these individuals to enhance their livelihood opportunities by obtaining formal jobs, forming new financial habits, improving participation in career development activities, and increasing business sales.

Figure 5-1. Thematic Graph Illustrating the Construction of Theme 1



5.2.1 Category: Accessing daily life resources

Four codes constitute this category: getting everyday supplies, keeping mobile plans active, and accessing quality goods and cash. The first code represents individuals' use of DFS to access everyday consumables, such as groceries and vegetables. The second code reveals people's DFS use to keep their mobile plans active to maintain communication with others, stay alert about banking transactions, access the internet, and get cash incentives. The third code reveals the significance of DFS in the lives of individuals who want to get hold of goods [through e-commerce platforms] that are not readily available in rural markets. The last code reveals the importance of using DFS channels to enable them to access cash to meet their other routine requirements.

Code: getting everyday supplies

The data analysis shows that people in these villages leverage the convenience of DFS to meet their routine requirements, such as buying daily-use items, including groceries and vegetables. For instance, Palki prefers digital payments because she does not have to carry cash to meet everyday life requirements. She feels confident that, by using DFS, she can easily make payments without any concerns:

> See, these days there is [digital payment] facility everywhere. It is better than the cash option. I am not worried whether I have enough cash in my purse to [buy groceries]. As long as I have my smartphone with me, there is nothing to worry about regarding payments.

Other participants, Deepam and Dhiraj, also confirm their DFS's use for various requirements, making their routine life easier. Deepam mentions using his mobile app to buy groceries. He also emphasises the DFS acceptance by street vendors selling vegetables: "I often use [digital mobile app] to buy groceries. Even vegetable [street vendors] accept [digital payments] these days." Dhiraj also affirms his DFS practices for meeting his everyday small expenses: "I use my UPI app for [small] everyday requirements."

In summary, evidence within this code shows that individuals in these villages have integrated UPI mobile applications into their daily lives, making it a preferred choice for meeting their everyday essentials, such as groceries and vegetables.

Code: keeping mobile plans active

Besides using DFS channels to meet daily supply needs, participants also speak about utilising DFS to keep their mobile plans active. As I observed and conversed with participants, I found that individuals in the visited communities use the instant mobile recharge features offered by digital payment (smartphone) applications. The evidence shows that keeping mobile plans activated enables these people to perform their routine life activities, including staying connected with others, checking bank account balances, and transferring or receiving money.

For instance, Krishna's comment best describes the instrumental role of DFS in managing various routine life activities. In particular, he emphasises the use of digital payment mobile apps to recharge his mobile plans for accomplishing other routine exercises efficiently:

> I use my [digital payment application] to recharge my mobile pack... You know how important a mobile phone is these days. I ensure that my mobile [plan] is active so that I am always in touch with my [business and personal contacts] … I access the internet to use my [social networking apps] … check my bank account, transfer money, etc.

Jai also finds digital mobile apps to be more accessible and flexible ways of keeping his mobile plan activated rather than depending on traditional channels, such as going to recharge shops in town. He further recognises DFS as an affordable and rewarding choice over traditional methods:

> It is easy and fast. So, I always prefer to recharge my mobile [plan] via [digital payment app]. I do not need to go to the [recharge shop in town] just for this task. Sometimes, I also receive a cashback offer when I recharge my [mobile] number through my app.

Like Krishna and Jai, Chirag also expresses his comfort with using the UPI mobile application to recharge his mobile phone pack. He mentions that he receives cashback offers when he uses the mobile digital payment app to buy mobile packs online: "I am comfortable with this application. I mostly use my [UPI mobile app] to recharge my mobile pack. I also receive cashback offers whenever I do it through my [UPI] mobile payment app."

The evidence presented above not only underscores the importance of a mobile phone in the daily lives of these villagers to meet their communication and financial needs but also the role of digital payment applications as an attractive choice for keeping mobile communication functioning.

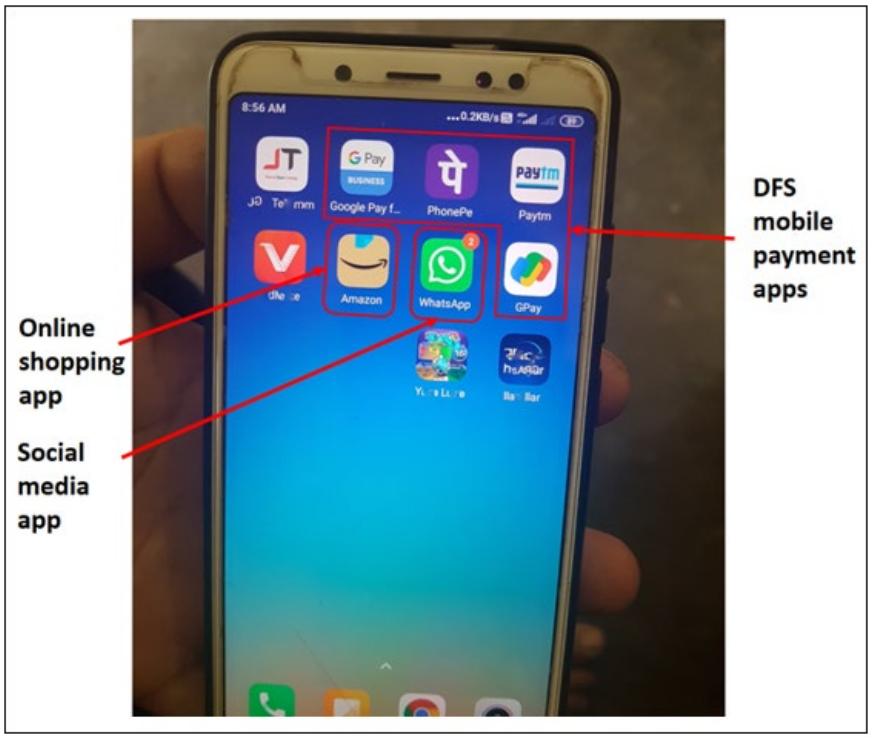
Code: accessing reliable goods

Data reveal a noteworthy trend among participants who harnessed DFS to gain access to durable goods not readily available in their local rural markets, all at discounted prices through e-commerce platforms. Furthermore, participants shared their experiences of reaping the benefits of discounts on online transactions when purchasing through e-commerce websites. For example, Jatin, an active participant in inter-village Kabaddi tournaments, displayed his use of an online shopping app on his smartphone, as illustrated in Figure 5-2. During this demonstration, Jatin revealed his DFS, which is used to procure reliable sports accessories through an e-commerce platform. Jatin's engagement with DFS mobile apps provides a concrete example of how DFS use enables individuals to get hold of diverse products while residing in remote areas:

> I recently purchased my practice shoes from [a popular e-commerce website]. I could not find better quality [shoes] in the nearby markets.

> Then I searched online and found one [pair of shoes] at a cheaper rate, so I bought it immediately.

Figure 5-2. Jatin Displaying Smartphone Apps He Utilises on a Routine Basis



Jatin further adds in the conversation that his friends also utilise e-commerce shopping platforms to access a broader and better selection of products at lower prices compared to what is available in physical stores at the local market: “My friends also use these websites to do online shopping … you can find variety [of products] and choose a [better quality goods] on low prices, which you do not get in the local market here.”

Jatin's disclosure of online purchasing through digital payment applications emphasises the common trend among residents to access a quality and diverse range of products at competitive pricing that is not readily accessible in rural markets.

Code: accessing cash

The findings reveal that people in these villages often use face-to-face DFS channels, such as ATM outlets and BC points, to access cash to meet their requirements. Data analysis shows that participants prefer these channels for accessing cash, especially when the amount of money is small, as they perceive going to the bank branch for small cash withdrawals as not only a time-consuming but also an unpleasant activity.

For instance, in his statement, Vikas strongly favours the role of ATMs for meeting his cash needs, particularly when he needs to withdraw a small amount of cash. He prefers the ATM outlet over the bank cash counter as he finds this process annoying and time-consuming: "If I need to withdraw [small cash amount], I go to the ATM rather than visiting a [bank] branch and waiting in long queues …. It is an annoying task [withdrawing cash from bank branch]."

Pradeep expresses a clear preference for accessing cash through ATM outlets while citing his dislike for the time-consuming nature of bank branches, even with small transactions. His sentiment reflects ATMs' convenience and efficiency compared to traditional financial services: "I do not like to go to the branch… Even for small transactions, you have to spend hours."

Similarly, Jai also echoes the preference for the face-to-face DFS channel by mentioning that he uses ATMs for his "cash requirement". This choice underlines ATMs' continued relevance and acceptance as a convenient means of obtaining cash among these villagers.

Bala, who has never had an ATM card issued from the bank due to his fear of losing it, also sheds light on the role of face-to-face DFS channels in individuals' daily lives by using his biometric identity (fingerprint) to obtain cash for his routine requirements: "Most of my daily requirements are fulfilled with [a small amount of cash]. So, whenever I need to withdraw money from my account, I go to the nearby BC [point]."

The evidence presented in this code highlights the significant advantages of face-to-face DFS channels in terms of convenience and efficiency compared to traditional financial services, especially for meeting routine and relatively minor cash requirements.

5.2.2 Category: Managing financial obligations

Two codes fall under this category: easing physical and financial stretches and reducing mental exertion. The evidence in the first code reveals DFS use in reducing people's physical (i.e. travel) and economic (i.e. costs involved in the process) discomforts to pay their financial due, such as utility bills and credit repayments. The second code focuses on DFS's role in helping people reduce the mental exertion (or tension) they often

experience while fulfilling their financial obligations using conventional (i.e. non-digital) methods.

Code: easing physical and financial stretches

People in these villages utilise digital payment applications to pay dues such as electricity bills. For instance, Dhiraj exemplifies how DFS has transformed the way electricity bills are paid in the village. He no longer visits the distant electricity department but instead relies on a mobile payment app to settle his dues. Dhiraj perceives DFS as a cost- and time-effective approach to meet this recurring requirement. By saving his meter number in the app and receiving timely reminders, Dhiraj ensures he pays his bills promptly and avoids any inconvenience or penalties:

> I did not go to the electricity office [far from the village] for a long time… I have saved my meter number in my [mobile payment app]. When my bill is due, I receive a reminder [from the app] showing the due date and amount to be paid.

Like Dhiraj, Pradeep echoes a similar sentiment about the significance of DFS in his financial management. He emphasises the importance of using a digital payment app to pay his electricity bills, even for his village home. Pradeep values the importance of DFS for effectively managing his financial responsibilities remotely without having to negotiate with his job hours:

> I use [digital] payment app even for paying electricity bills for my house [in the village]. See, I have many things to do at [my] work... my manager may not like it if I take leave to deposit the electricity bill for my home in the village.

Tilak, another participant, views the mobile banking application as a valuable tool for handling his loan instalments efficiently. He appreciates the automated payment reminders provided by the app, which prevent him from missing due dates and incurring overdue payment charges: “I receive automated payment reminder every month… otherwise, I have to pay the late payment fee, which is too high.” Similarly, Vairaj also highlights the automated payment reminder feature of digital payment apps: “I receive alert messages on my [digital payment] app about a month before the [payment] due date with an online payment link.” He further highlights the importance of DFS in avoiding fines related to past dues. By proactively paying his instalments online before

the due date, Vairaj ensures he remains penalty-free: “I pay my instalments online before its due date. I do not want to pay any penalty.”

Overall, the excerpts within this code illustrate how using digital payment applications helps villagers streamline their financial transactions, such as by timely payment of utility bills and loan instalments. Evidence also showcases the effectiveness of the payment reminder feature offered by digital payment applications that also promote proactive financial behaviour, allowing these individuals to manage their financial dealings without incurring additional expenses.

Code: reducing mental exertion

Besides easing physical and financial hassles through digital payments, participants also cite a decrease in the mental exertions they used to face while making payments through traditional (non-digital) modes. For instance, Vairaj finds digital banking a vital tool, enabling him to pay his policy premiums without tension. He recalled his experience of facing trouble in getting his policy revived after he accidentally missed the payment due date. During the interview, he explained how the DFS mobile application keeps him alert about policy dues and helps prevent his policy from being voided due to non-payment:

> [Digital payment] facility was not there when I started my policy ten years ago. I remember that once my policy got elapsed because I forgot the [due] dates. I had to follow the long and terrifying process to revive my policy. I also had to pay some penalty [to restore the policy].

Dhiraj, who stopped visiting the electricity department to pay bills, also spoke about reducing the hitches in the traditional bill payment process:

> It was very stressful, especially when I was on my [delivery] job. The manual [bill payment] process was cumbersome… I had to wait in the queue outside the [payment counter window] of the power supply department… Now, I am tension-free.

Dinkar also revealed the importance of DFS over traditional payment services for paying instalments for his life investment policy. According to Dinkar, the online payment facility reduced his mental exertion while depositing payment manually:

> I used to pay [payment] through cheque at the counter in the office…dealing with those employees in the office was very stressful. Some of them were very arrogant and rude. I do not have to deal with them.

Similarly, Lalit perceived DFS as a tension reliever for business income loss. He thinks that the use of DFS at his business counter helped him to "reduce [his] tension of keeping small currency [he often requires to give back to customers as the remainder money 'change' of the total service charge]."

Collectively, these excerpts illustrate the positive role of digital payment applications in reducing the inconvenience and mental pressure associated with manual, cumbersome and unfriendly payment processes that these villagers experienced in the past.

Code: feeling safe in accessing finances

Conversations with participants reveal that they feel safer with remote DFS channels (e.g. mobile payment applications) than with cash-based transactions to meet their financial requirements. For instance, Dhiraj perceives his mobile payment application as a safer method to gain access to funds while completing his truck delivery jobs, mainly when other banking channels (e.g. ATM outlets or bank branches) are not accessible. According to Dhiraj, he must spend days and nights on highways and carrying cash on such long routes is not safe as there is always a risk of looting activities occurring on state highways, which could put the driver's life at risk:

> I have to drive for days to complete [truck] deliveries... I had to carry cash for travel expenses like fuel, tolls and overnight stays. See, it is risky travelling days and nights on highways… I always fear being robbed by highway gangs. You know that highways are prone to such activities. Moreover, it is not just about money; your life is at risk, too. So, I think using a digital app is much safer and more innovative than cash.

The analysis also pointed to another perspective on safety leveraged by DFS users in these villages. Evidence shows that individuals utilised DFS to have safe access to finances while avoiding the physical handling of money during the COVID-19 pandemic. Participants revealed that DFS played a significant role in meeting their daily supply needs during COVID-19 lockdowns across the UP state and ensuring their protection

from the COVID-19 virus. Tilak, for instance, commented about his frequent use of digital payment services both by retailers and customers to meet their requirements:

> I often used my [mobile payment application] during [COVID-19] lockdown. Many [retail businesses] stopped taking cash. Even [street] vendors started accepting [digital] payments during [COVID-19]. There was no other option. People were scared.

Vairaj also reveals his observation concerning the increased use of digital payment apps during the COVID-19 pandemic. His experience signifies the role DFS played in shaping people's financial transaction practice to protect themselves from life-threatening situations:

> I found many people switching to [digital payment] during COVID-19, especially during the second wave. Everybody was so scared to use [physical currency].

During the interview, Vairaj also cited that he feels safer with digital mode rather than cash when he has to go to the city to buy goods from different suppliers for his shop:

> When I need to buy [larger quantity] from different wholesalers in the city, I prefer to pay them via [digital payment application] … carrying cash is risky… it is my hard-earned money.

Overall, the excerpts underscore the safety and convenience aspects embedded within digital payment applications. Participants' comments demonstrate how digital payments offer a more secure and flexible option to deal with potentially risky situations while carrying cash, particularly involving travel, pandemic-related concerns, and business transactions.

Code: managing finances independently

The evidence demonstrates that DFS mobile applications have empowered DFS users to autonomously fulfil their financial needs. This notion is vividly exemplified by the remarks of Hari, who, due to his permanent visual impairment, previously relied on others to access financial services. Since he adopted DFS, he feels a sense of confidence in managing his financial requirements independently:

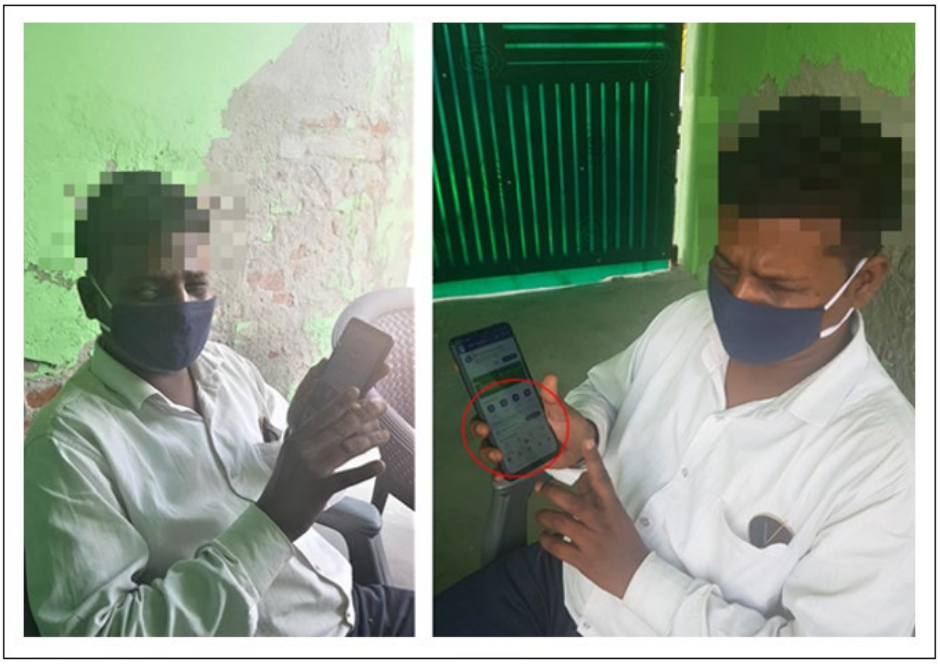
> Dealing with money-related requirements was challenging. I had to tell others the reason or value [of my personal] transactions. I do not feel like asking for assistance now. I can do [my transactions] on my own

> [using DFS mobile apps]. I know how much I am paying and to whom I am paying.

As Hari is connected to the blind people's committee, he pointed out other individuals who use DFS to carry out their daily transactions independently. He also expresses the view that these services are a blessing for disabled people: “As I am connected to the blind peoples’ committee, I know several individuals who utilise [DFS] to perform their routine transaction on their own. I think it is a blessing for disabled people.”

In Figure 5-3., Hari, despite being completely blind, demonstrates how he uses the DFS mobile application on his smartphone.

Figure 5-3. Hari Showing His DFS Use



Besides Hari, another participant, Palki, an active DFS user, asserts that DFS plays a pivotal role in “boosting [her] confidence” and enabling her to manage her financial affairs independently.

Overall, the highlighted evidence underscores the transformative aspect of DFS in terms of self-confidence and autonomy to manage financial affairs independently. Specifically, comments by Hari emphasise the promising role DFS use in empowering individuals with vision disabilities by providing them control over their routine financial transactions.

5.2.3 Category: Improving income prospects

This category comprises five codes: securing formal employment, shaping savings behaviour, advancing career prospects, reducing informal credits, and responding to cash currency issues. The evidence shown in the first code focused on the role of DFS in enabling these individuals to generate livelihood. The data reveal that the ICT-mediated BC model has allowed these individuals to secure formal employment to support their life's requirements.

Examining the evidence in the second code exposed how DFS contributes to rural people's financial behaviour by shaping their savings practices. Evidence shows that using DFS has helped DFS users in these villages develop a habit of regular saving and investing their money in different banking products. The third code reveals how rural applicants use DFS to access online professional training resources and gain the knowledge they need to pursue job-related opportunities.

The evidence in the fourth code shows DFS's use to deal with informal credit shopping practices[8] by small-scale business owners in these rural communities. According to these small-scale entrepreneurs, implementing a digital payment system at their business premises has enabled them to reduce payment delays from credit shoppers.

The evidence in the fifth code highlighted the role of DFS in controlling business income loss that these small-scale entrepreneurs had to deal with due to the limited availability of small currency denominations (e.g. 5, 10, 20, 50). As these small-scale businesses sell low-value goods, digital payments help them smoothly conduct their daily business transactions without facing issues related to the availability of small currency denominations.

Code: securing formal employment

In-depth conversations with individuals revealed that the intervention of digital technologies in the banking sector has improved income opportunities, particularly for those working as BCs in these rural communities. Although the initial aim of the BC model initiative is to reduce the financial exclusion of the members of our society,

[8] In the context of this study, informal credit shopping practice refers to customers buying goods from local retailers by making a verbal promise to pay the transaction amount later.

especially those living in remote areas (including rural regions) where access to essential financial services through brick-and-mortar channels is not feasible, this ICT-mediated financial service model can be perceived as an employment creator for the individuals belong to rural communities. During the fieldwork of this study, I interviewed individuals in these villages who worked as full-time BCs and regarded the BC model as their primary source of livelihood.

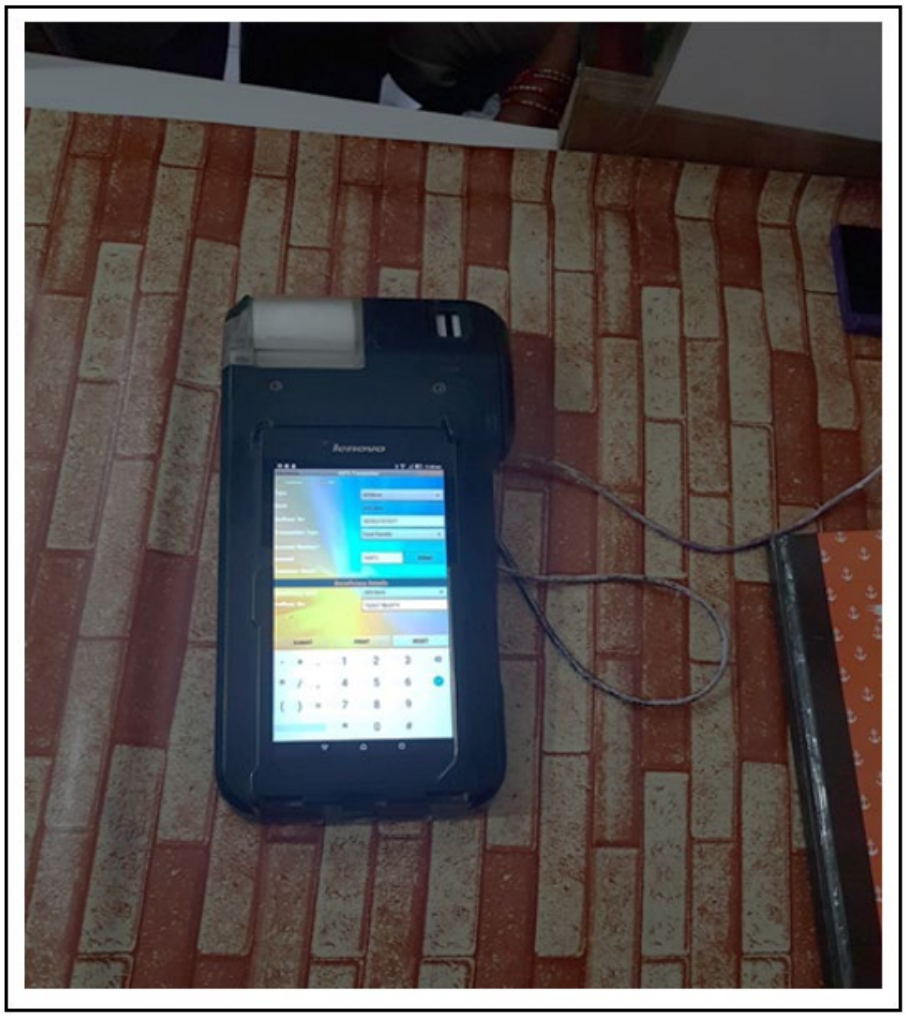
For instance, Param, who has completed his education up to the higher secondary level, has been working as a full-time BC for over two years; he used to have a small grocery store but had to shut it down permanently due to low income. Param started BC services with the help of digital technologies after getting advice from a bank employee who used to work in a rural branch in a nearby town. Param perceived that his income through his BC Point enabled him to meet most of his basic life requirements:

> It is my primary source of earnings. I can say [that the income I generate from BC services] is enough to meet my essential requirements. Initially, I faced challenges as only a few people knew about BC services [in town]. But now I have many clients.

Another participant, Saurabh, who has been running a BC service point for over four years, offers rural people diverse financial services using a Micro-ATM with a biometric scanner device, as depicted in Figure 5-4. As a bachelor's degree holder in Arts, he thinks there is no better job for him. For Saurabh, his income from BC Point enabled him to meet his requirements. During an interview, he also mentioned that he is the breadwinner of the family, including his mother, "a homemaker," and a younger brother, who is "still in school."

> [BC Point] is my primary source of income. I have a good income… enough to support our [referring to his family members – mother and younger brother] requirements. I do not think I could get a better job with my bachelor's degree [in Arts]. I am paying my brother's school fees, rent for this [BC] shop, bills, etc., all with my BC income.

Figure 5-4. AePS Device with Biometric Scanner at BC Point Situated in Shikarpur



Shakeel, who holds a higher secondary level education, has been working as a full-time BC for over five years. He provides financial services to the rural people from his village and nearby villages. Like Saurabh, Shakeel's experience as a BC highlights the role of the ICT-BC model in providing him with opportunities to earn a livelihood and improve his lifestyle. Shakeel perceives the ICT-BC Model as his primary and regular source of income, which enables him to satisfy his diverse requirements. For instance, the income he derives from this work not only covers his financial needs but also empowers him to ensure his smooth mobility and security while travelling to different rural locations for personal and work-related activities:

> Since I became a BC, I have had a regular income… I also purchased a motorbike [from my BC income] … [owning a personal vehicle] is important because I need to travel [to different rural locations] for my [personal and work-related] activities. I must carry cash [collected from customers] to my [associated] bank branch to complete the deposit transactions. I feel much safer [visiting a bank branch] on my

> motorbike than public transport as I have to carry money [cash deposit by customers].

The BC model not only provides these individuals with an opportunity to secure formal employment but also helps them build a reputation in society. For instance, Shakeel believes that BC services gained him respect among his close family members and the community: “My parents were proud when I bought a motorbike from my income. Villagers also respect me a lot. They trust me as I help them with their financial transactions.”

The data extracts highlighted in this code reveal individuals getting formal income opportunities offered by the DFS ecosystem. Participants' comments highlight the role of the ICT-BC model in providing individuals with a formal avenue for generating regular income, even those with no technical educational background.

Code: shaping savings behaviour

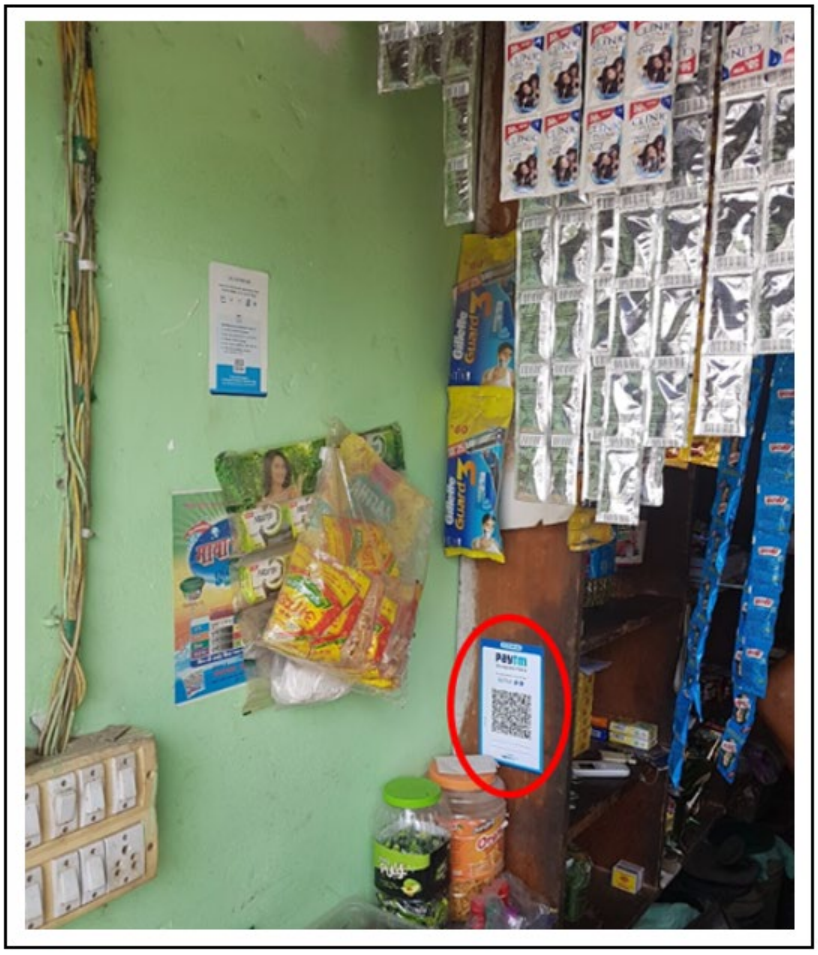
DFS use by individuals in these villages has influenced their savings behaviour. It enables them to invest funds in regularised (formal) financial schemes. The findings reveal that the easy investment options offered by DFS channels contribute to their investment habits. This habit further helps them increase their savings by earning interest (passive income) on their deposits. For instance, Krishna's comment reveals how his DFS-mediated savings behaviour increased his deposited funds through earning interest offered by the banking scheme:

> I regularly invest some of my business income in [online banking product]. I usually do not keep much money in my savings account [which offers a nominal interest rate]. Once some [significant amount] is accumulated in my savings, I transfer that money to [fixed deposit account] to gain interest on that money.

Kulveer also highlights the role of the digital payment system in enabling him to automatically accumulate his grocery shop income through a digital payment QR code, as shown in Figure 5-5, to his bank account and further invest that money into his business. In the following extract, Kulveer described his financial practices for managing his business income and how DFS-mediated income helped him to accumulate savings by reducing undue expenses:

> Before installing [digital barcode payment system], I used to collect all my [shop] earnings in cash. I used to keep some portion [of my business earnings] for purchasing [stock] and some for my daily household expenses and emergencies. Sometimes, that emergency cash was also spent on unnecessary things. I was barely saving any money. [Digital payment] helped me accumulate money because it goes directly into my bank account instead of my [spending hand]. This accumulated money helps me in expanding my grocery business. I keep more product variety and quantity in my shop than I used to.

Figure 5-5. QR Code for Digital Payments at Kulveer's Retail Shop in Chhomas

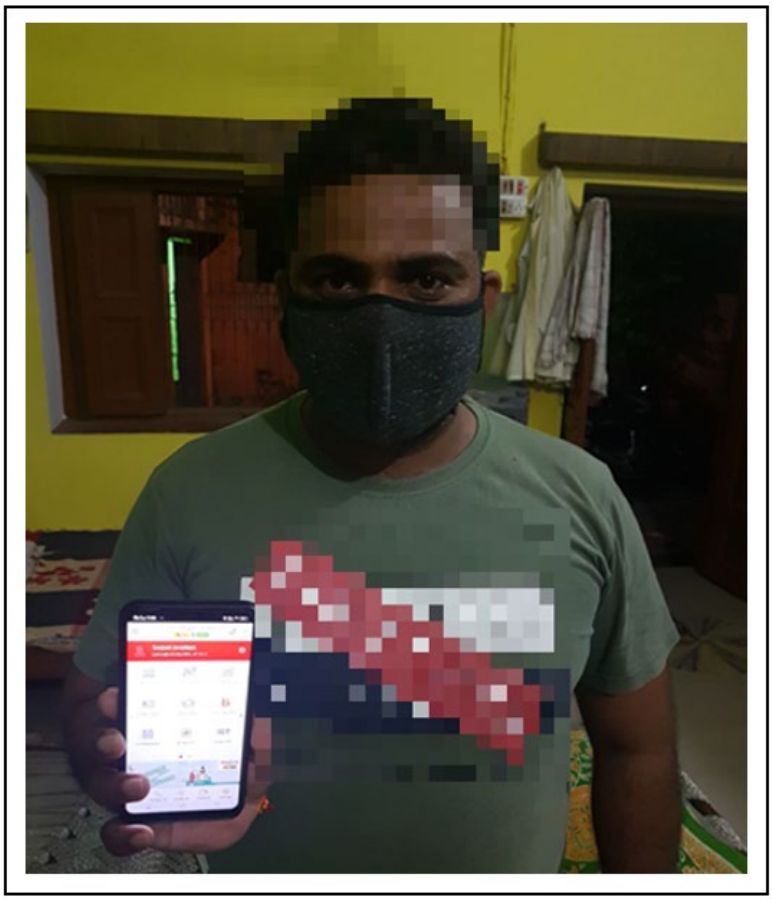


Like Krishna and Kulveer, Tilak has also developed a habit of channelling part of his income in the e-FD (electronic fixed deposit) using his mobile banking application, as shown in Figure 5-6. As per Tilak, the e-FD option on his mobile banking app has contributed to his financial habits. It enables Tilak to get product information (current interest rate and related schemes) and eliminates the need to visit the bank branch and

fill out documents to make that investment. These capacities of DFS further motivate Tilak to invest his money:

> I use the e-FD option on my [mobile banking] app. It shows all the necessary [product details]. I do not have to think of postponing my investment as I know I can do it with just some clicks rather than filling out [investment application form]. I create one [online] FD in three months… it takes not even a minute to [invest my savings].

Figure 5-6. Tilak Displaying His DFS Mobile Application on His Smartphone



In summary, this code exemplifies the effective use of mobile financial applications to explore and leverage digital banking products for investing money and accumulating savings in a disciplined fashion. Interview extracts also reveal that using DFS apps simplifies managing income and channelling it further through easy and quick investment options, such as e-FD. These digital investment features also shape villagers' money management habits and skills.

Code: advancing career prospects

Evidence shows that individuals, particularly those who recently graduated from college and aspire to become white-collar professionals, leverage the DFS to access professional

learning and career development resources. These individuals utilised digital payment services for accessing textbooks and online learning resources – designed explicitly for aspirants seeking positions in highly competitive public and private sector jobs – that are difficult to access physically from a rural location.

For instance, Prakash, besides helping his father in farming activities, was preparing for an entrance examination for the UP state public sector services. According to Prakash, digital payment services enabled him to purchase recommended textbooks – unavailable in the local market near his village (Balanpur) – by making an online payment*:* "It is hard to find the latest [preparation] books in the town. So, I ordered them through one [e-commerce] website."

Like Prakash, Yogesh, when discussing his aspirations and career goals, highlights the role that DFS have played in enabling him to work towards his goals. After completing his college education, Yogesh started helping his family run a small retail shop in the village. However, he kept pursuing his career goal by enrolling in online training courses, all made possible through DFS:

> After completing my college education, I started helping my family at a [small shoe shop]. But I want to become a bank officer. There are many [preparation centres] in the city, but they are costly. My parents have already spent a lot [of money] on my college education. I have taken a one-year course subscription [from an online educational content provider] for my bank PO [probationary officer] exam.

Yogesh perceives that DFS enables him to get "access to the online course" to initiate his preparation to meet his future career goal while supporting his family "without leaving the village".

These participants also reveal the use of DFS, particularly digital payment services, to ensure their participation in career development opportunities (i.e. entrance examinations) rather than relying on traditional payment methods. For instance, Prakash talks about using digital payment services to send the application fee to the recruitment organisation to participate in the State's public services job entrance examination: "I paid my application fee through my [mobile banking application]."

Although a physical payment service, such as demand draft (DD)[9], is used by aspirants to meet their application requirements; it requires the applicant to visit the bank branch and request the DD by filling out the application form and paying the fee amount with additional service charges. This physical payment document and the application form must then be sent (via postal services) to the recruitment authorities.

According to Prakash, it is difficult to ensure the confirmation of the receipt of the DD (i.e. application fee) by the examination authorities. Applicants have to wait for the authorisation document allowing the candidate to sit in the examination: "There is no payment acknowledgement [from the authorities]. You have to wait for the admit card to be issued after they receive the fees."

Prakash views digital payment as a reliable, affordable, and faster alternative to traditional methods like DD, particularly when confirming his participation in the entrance examination. He perceives that digital payment solutions simplify the process and enhance the overall experience:

> [digital payment] is a safer and cost-effective way… I received the [online payment confirmation] when I paid my exam fee. I also saved the [online confirmation] on my mobile as proof of payment.

Overall, the evidence presented in this code revolves around the benefits of using DFS, particularly MFS, in accessing educational and career development resources (e.g. ordering preparation books through an e-commerce website). Participants' comments reveal how mobile digital payment facilities have improved access to online training courses, making learning more affordable for younger aspirants without needing to leave their villages. Moreover, digital payments provide these individuals with a safer and cost-effective gateway, allowing them to pay application fees and receive proof of payment (acknowledgement) instantly. This is more efficient than authorities issuing and sending physical acknowledgement letters (through postal services) to candidates when payment is made through the traditional (e.g. DD) method.

[9] DD is a physical and non-transferable banking instrument provided by the bank to the payer on the name of the payee.

Code: reducing informal credits

Small-scale entrepreneurs in these villages reveal another crucial aspect related to DFS. As the informal credit-shopping culture is prevalent in these villages, small business owners face difficulty managing their business and other personal expenses. These small-scale business owners perceive DFS as helpful tools for controlling their business income losses due to informal credit transactions. According to the research participants, connecting with digital payment systems helps them reduce payment excuses and delays by credit shoppers.

For instance, Vairaj, who has been running a small general retail store and dealing with rural consumers for over a decade, offers insights into the informal credit shopping practices among rural consumers. Vairaj describes his daily encounters with a range of customers - who usually make partial payments for their purchases and continue this shopping behaviour without settling the previous dues. In the following excerpt, Vairaj describes the use of conventional and digital mechanisms to deal with these credit shoppers:

> Every day, I attend [some] customers who buy things from me but pay a partial [amount of the total bill]. Some of these [customers] pay the remaining amount after a few days without any reminder. But some keep shopping without paying their previous dues and request me to enter the amount [in my credit notebook]. These continued credits impact my income. See, I require money to maintain my shop and inventory. [Digital barcode payment system] helped me somewhat reduce these [informal] credits.

Like Vairaj, Kulveer also emphasises the benefits of using digital payments to address income losses caused by credit shopping. He points out that not all villagers prefer digital payments, and those who opt for cash transactions contribute to the informal credit culture. However, since he started using digital payments, he has been able to control income losses more effectively and ensure a smoother flow of income for his business and personal needs:

> The problem with cash culture is that customers take items [from my shop] without making payments. In villages, it is normal [for people to buy things on informal credit], but from my business angle, such [informal credits] disturb my income flow and other [business and personal] requirements. I can say that [digital payment facility] has enabled me to reduce my income loss due to unnecessary credits and improved my income flow.

The instances cited above shed light on the effectiveness of digital payment solutions, particularly the digital QR code system, for reducing income disruptions caused by informal credits of small business owners within these villages. Implementing a digital QR code solution has also contributed to a more structured and predictable income flow for these small-scale retailers.

Code: responding to the cash currency issue

Besides credit shopping culture, the unavailability of small-value currency affects the smooth flow of business income and activities. This issue arose after India demonetised two big legal tenders (i.e. currency notes of ₹500 and ₹1000). According to small business owners in these villages, demonetisation made people anxious, and they started to hoard small-value currency, which affected the availability of small currency denominations. Since these small-scale businesses often deal in low-value goods and services, they usually face problems related to small denominations of currency (cash) to perform their daily business transactions, which affects their sales and income. However, moving to digital payment options enabled these small businesses to deal with cash currency issues.

Lalit's case exemplifies the financial challenges faced by small businesses after demonetisation. The shortage of small-value currency and the lack of a digital payment system initially affected his ability to serve customers and impacted his business income. However, Lalit's decision to install a digital payment system allowed him to adapt effectively to the changing payment landscape and address the cash currency issues.

Lalit, who has a small business setup to offer automobile owners vehicle pollution-checking services at the petrol pump near the Bhatona village, speaks about how he struggled to hold on to his customers due to cash problems after the demonetisation. According to Lalit, he had to decline customers with high-value currency denominations (i.e. new currency notes introduced after demonetisation). Although he used to keep some loose currency (small-value currency notes) at the cash counter to return the balance amount to customers, it was not enough to meet his daily cash requirements. Lalit also had to refuse those customers who wanted to pay digitally, as he had no digital payment system installed at his business counter. These issues eventually affected his business income. In the following extract, Lalit explained the financial challenges he used

to face and how he managed to deal with those issues by installing a digital payment system at his service centre:

> My customers used to return without taking my services. I was also unable to provide the change of high-value 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 readily available, which caused me a hard time sustaining my business income. This problem had a significant impact on my daily sales… then, I got the digital payment barcode for my service centre... if [customers] do not have cash, they pay digitally... digital payment has increased my sales.

Vairaj also adds insights into the role of DFS in reducing cash-related issues. According to Vairaj, DFS was not as widely used until or even some time after demonetisation because people did not take DFS seriously until the demonetisation forced them to consider digital alternatives because of the scarcity of physical cash. Further, he mentions that in the past two years, there has been an increase in the use of DFS applications in rural areas. He credits DFS with reducing cash-related problems and the convenience it offers, especially for small retailers who no longer need to worry about keeping change:

> As I observed, DFS was used less at the time of demonetisation than it is being used now. One of the reasons could be that people were not serious about DFS until demonetisation happened. From what I have felt, the use of DFS applications in the last two years has increased in rural areas. After DFS [intervention], cash-related problems are reduced. Small retailers like me do not need to worry about keeping [small currency] these days.

Much like Lalit and Vairaj, Chirag also finds DFS useful for handling small-value purchases in routine situations where obtaining physical cash change for minor purchases becomes inconvenient: “Suppose I need to buy something of small value, and a retailer asks for a change, then I use UPI [DFS mobile application].”

The evidence presented in this code underscores the positive role of digital payment solutions (e.g. the UPI payment system) in addressing challenges related to currency change that individuals (customers and retailers) face in performing small-value transactions. These digital payment solutions have not only reduced people's reliance on cash but also improved the sales of small retailers.

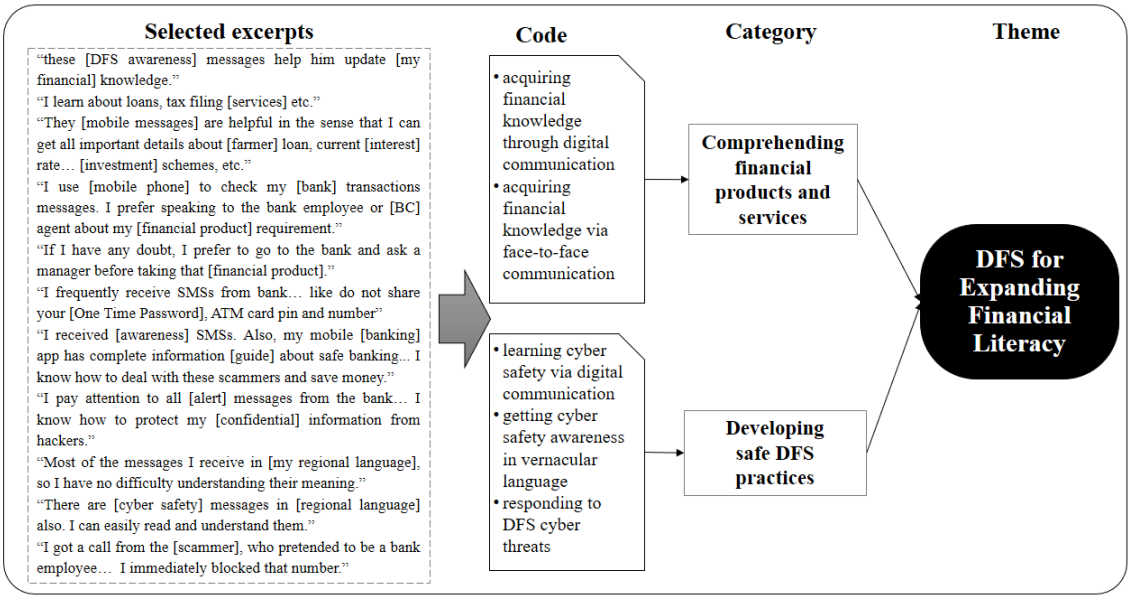
5.3 Theme 2: DFS for expanding financial literacy

The theme of DFS for expanding financial literacy describes the significance of DFS in enhancing people's understanding of financial products, services, and cybersecurity practices required to fully utilise DFS capacities. This theme comprises two categories: 1) Comprehending financial products and services and 2) developing safe DFS practices.

The first category highlights people's access to the latest information related to financial products and services offered by banking institutions disseminated through different DFS communication methods, such as mobile notifications, infographics, and SMSs. These communication methods enabled village people to enhance their awareness of loan schemes, tax filing dates and procedures and other online financial services. This category also recognises the role of face-to-face DFS (i.e. ICT-BC model) in enabling these villagers, particularly those with low-level DFS skills, to improve their financial knowledge through BCs.

The second category emphasises DFS's role in enhancing DFS cybersecurity skills. The existing DFS-mediated communication methods (i.e. push notifications, digital infographics, and SMS) are critical in improving people's awareness about DFS cyber threats and helping them develop essential skills to effectively respond to the prevalent risks and threats posed by DFS scammers. Figure 5-7 shows relevant excerpts, codes and categories identified during the thematic process to develop this theme.

Figure 5-7. Thematic Graph Illustrating the Construction of Theme 2



5.3.1 Category: Comprehending financial products and services

Two data codes constitute this category: learning through digital communication and learning via face-to-face communication. The first code reveals the role of DFS use by individuals to gain financial knowledge (e.g., information about loans, tax filing, and online services) through multiple digital communication methods offered by DFS providers (i.e., banking institutions). The most common communication methods individuals cite include mobile notifications, infographics, and bank SMSs. The data gathered in the second code highlights the significance of BC points as a face-to-face communication method individuals use to enhance their financial awareness.

Code: acquiring financial knowledge through digital communication

Evidence shows that DFS users in these rural communities learn about different financial products and services through three DFS-mediated modes: mobile notifications, infographics, and bank SMSs. The data also reveals that active DFS users in these villages perceived this digital awareness method as helpful for learning and improving their financial knowledge. For instance, Deepam receives regular SMS and notifications from banks covering new ATM services, online fraud prevention, investment schemes, and loans. He values these messages as they help him stay informed and update his financial knowledge: “I receive regular [SMSs and notifications on my mobile] related to new ATM services, online frauds… investment schemes and loans from my bank... These [DFS awareness] messages help me update [my financial] knowledge.”

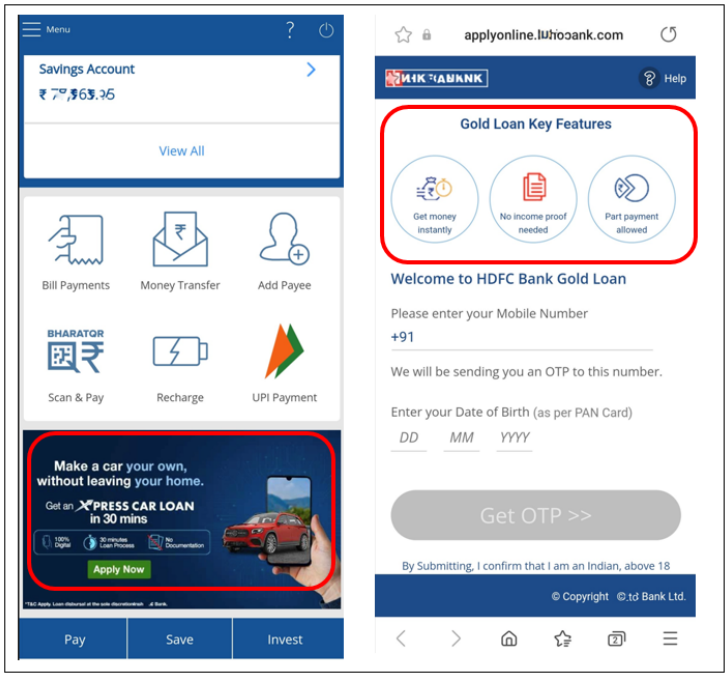
Lokesh also sees DFS as an important source of improving his knowledge about diverse financial schemes offered by banks. Lokesh perceives that the bank's mobile SMSs enable him to expand his understanding of financial opportunities available to him, including those critical to his farming goals: “They [mobile messages] are helpful in the sense that I can get all important details about [farmer] loan, current [interest] rate… [investment] schemes, etc.”

Another active user, Brij, regularly receives informational messages related to banking products and services on his mobile phone. He also perceives these messages as useful in updating his financial knowledge. For instance, he came to know about the significance of nominee registration in bank accounts through the bank’s informational SMSs, as shown in Figure 5-8.

Figure 5-8. Brij Revealing Financial Awareness SMS Received from the Bank

Jai mentions acquiring information about different financial products and services through DFS infographics, as shown in Figure 5-9, that he regularly receives on his mobile banking application: “I learn about loans, tax filing [services], etc.” Jai also perceives that these DFS messages help him to “get the latest [product] information.”

Figure 5-9. Mobile Phone Screenshots Displaying Informative DFS Infographics



Overall, this code emphasises the positive role of DFS-mediated awareness delivered via mobile SMSs or notifications in improving individuals' financial knowledge. These digital awareness methods serve as a valuable source of financial information, helping DFS users stay informed about different financial products and services.

Code: acquiring financial knowledge via face-to-face communication

While individuals in these rural communities perceive digital communication as a vital resource for acquiring financial knowledge, some people, especially those not equipped with DFS skills, utilise face-to-face DFS communication channels, such as BC points, to enhance their financial awareness. For instance, Tika uses DFS remote (digital) services only to monitor his banking transactions through mobile alerts and does not access other financial services due to his low level of DFS skills. However, he prefers to approach BCs to gain information related to financial services*:* "I use [mobile phone] to check my [bank] transactions messages. I prefer speaking to the bank employee or [BC] agent about my [financial product] requirement."

Another participant, Rajan, who has been running a BC Point for the past six years, confirmed people's access to face-to-face DFS sources to enhance their literacy*:* "I conducted the awareness programme with village women and informed them about different banking schemes. I used my laptop to present all the information."

Shakeel, who works as a BC, also comments about his role in educating villagers about banking products and services: "I also explained to them [locals] about different financial products and banking process."

Besides using remote and face-to-face DFS channels, people in these villages approach conventional (non-DFS) mediums to enhance their financial awareness. Participants reported that they prefer to visit bank employees to supplement their understanding of financial products and services. For instance, Vikas, who receives financial awareness through DFS channels, also likes to speak to the bank employee in person whenever he needs more clarification on financial product details: "If I have any doubt, I prefer to go to the bank and ask a manager before taking that [financial product]."

However, Gagan (who is a passive DFS user) reveals his confidence in conventional channels as a source of his financial knowledge:

> Last year, I needed money for my [agricultural] activity. So, I went to my branch and spoke to the [bank] manager and asked him about [agricultural] loan options and details like interest rate, required documents, and the number of days to get the loan.

The provided quotes reflect face-to-face mediums (e.g. ICT-BCs and bank employees) to learn about diverse financial products. These excerpts show that while mobile communication technology is critical in accessing financial information, individuals also prefer personal interactions to obtain expert guidance, especially when they need to make significant financial decisions (e.g. applying for a loan).

5.3.2 Category: Developing safe DFS practices

This category includes three codes: learning cyber safety via digital communication, getting cyber safety awareness in vernacular language, and responding to DFS threats. The evidence gathered in the first code shows that individuals in these villages utilise the information disseminated via DFS-mediated communication methods (i.e. push notifications, digital infographics, and SMSs) to enhance their cyber safety skills. The analysis reveals that individuals using these digital communication channels can effectively respond to the risks and threats of DFS scammers. The evidence in the second code shows that DFS users in these rural communities leverage the multilingual capacities of DFS by learning cyber awareness in their regional language, making it easy for them to understand and follow the DFS safety guidelines. The evidence presented in the third code highlights the effect of DFS cyber safety knowledge on dealing with phishing attacks by DFS fraudsters. The data shows that individuals in these villages use various cyber hygiene skills and strategies acquired through digital communication to protect their confidential banking details and savings by recognising and blocking scam calls.

Code: learning cyber safety via digital communication

Research participants reported that they often receive DFS cyber threats on their registered mobile numbers, such as phone calls or bogus messages from scammers. Figure 5-10 shows the phishing SMS received from the DFS scammer.

Figure 5-10. Phishing SMS Urging Bank Customer to Call Fraudulent Contact Numbers for ATM Card Activation

These individuals reported that they frequently receive cyber safety alerts and guidelines through different DFS communication services, such as SMSs, push notifications and infographics on mobile phones. These individuals utilise this cyber awareness information to avoid potential DFS threats.

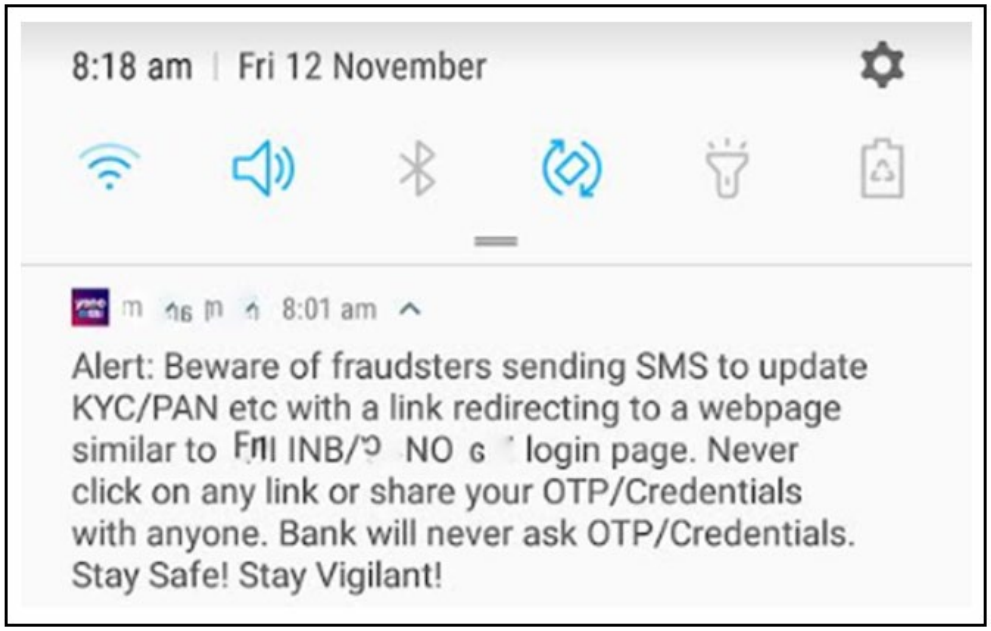
For instance, Jai, an active DFS user, emphasises the value of receiving regular cyber alerts from the bank on his mobile phone, enabling him to safeguard his financial wellbeing: “I frequently receive SMSs from bank… like do not share your [One Time Password or OTP], ATM card pin and number, etc.” Another participant, Deepam, also comments on learning online banking safety tips through web links and awareness guides on his bank’s mobile application. He perceives these awareness links as helpful for safe banking while avoiding cyber threats: “I received [awareness] SMSs. Also, my mobile [banking] app has complete information [guide] about safe banking... I know how to deal with these scammers and secure my money.”

Palki ensures that she reads all the information received from the bank carefully to keep her DFS knowledge updated: “I pay attention to all [alert] messages from the bank.” She further mentions that access to these awareness messages enabled her to safeguard her

personal information from DFS scammers: “I know how to protect my [confidential] information from hackers.”

Another participant, Dhiraj, perceives that the cyber alert notifications on his mobile banking app helped him to learn how to secure confidential information and finances from cyber attackers: “I receive messages from a bank about how to avoid [cyber] risks. They are helpful because they [educate] about hackers’ tricks they use to fool customers and steal their personal details and money.” Figure 5-11 shows the screenshot of the push notification received on the participant’s smartphone.

Figure 5-11. Push Notification on Bank Mobile App Alerting Customers about Cybersecurity Threat



Lokesh also finds DFS-mediated messages he frequently receives on his mobile phone to be an essential source for learning about secure banking: “I receive different [awareness] messages on my mobile phone from my bank regularly. I find these [messages] helpful in updating my [cyber safety] knowledge.”

Collectively, data in this code highlight the importance of receiving and heeding digital alerts and awareness SMSs from the bank regarding safe banking practices. These mobile messages serve as critical reminders to customers to safeguard their sensitive financial information (e.g. OTP and ATM card PIN) against unauthorised access. Participants' comments reveal that these regular cyber alerts make them well-prepared to deal with tricks used by hackers to steal personal details and money.

Code: getting cyber safety awareness in vernacular language

Besides bringing convenience to performing financial transactions and acquiring financial knowledge remotely, DFS also carries cyber threats related to losing confidential details and money of digital banking customers. Cyber awareness among consumers plays a vital role in leveraging the power of DFS. The design and development of remote DFS channels in English further create communication and linguistic fences between DFS channels and banking customers in these rural communities. Access to DFS channels in vernacular form plays a critical role in the lives of non-English speaking customers, especially in rural India, to protect their confidential information and finances from potential cyber threats.

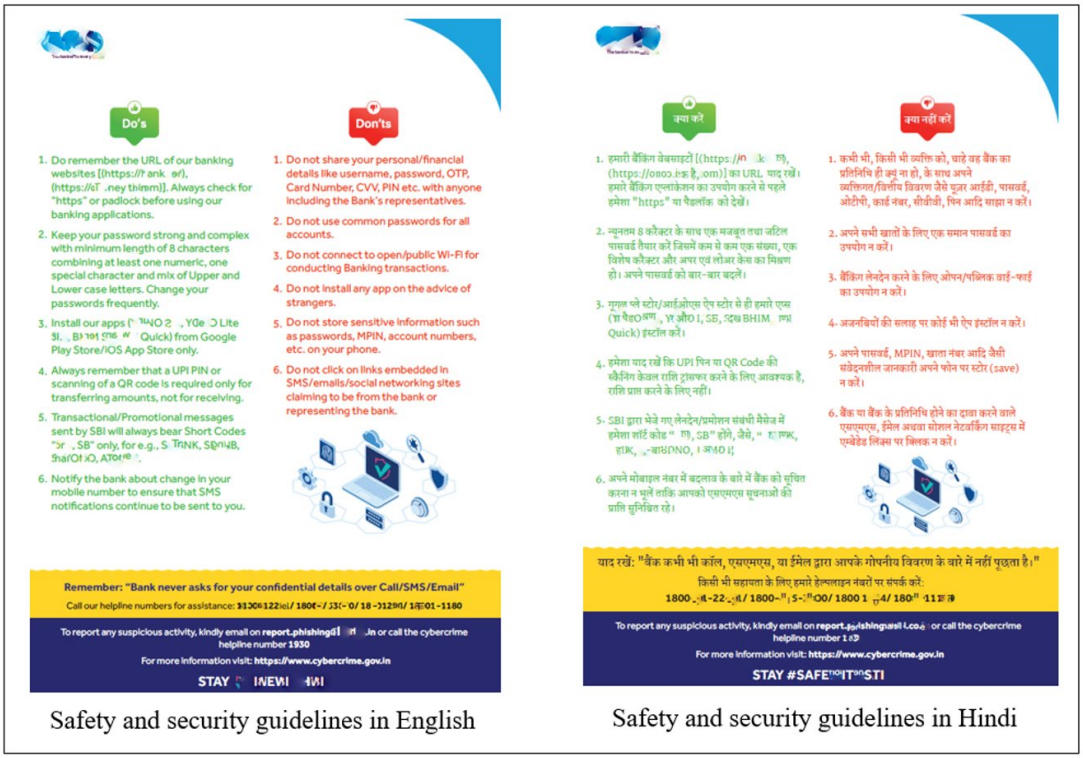
Research participants conveyed that the remote DFS channels provided by their banking institutions not only facilitate access to DFS but also serve as a valuable resource for acquiring cybersecurity knowledge. Notably, this knowledge is presented in a multilingual format, available in English and their regional languages. Accessing DFS channels in regional language further helps these individuals to better understand potential DFS-related threats and risks and how to prevent their credentials from cyber scammers. Bala describes this idea in the following extract:

> My mobile number is linked to my bank account. So, whenever there is a transaction in my [bank] account, I receive an alert from the bank. I also get [safe banking] messages like “beware of hackers” and “do not give your bank account details to any stranger.” Most of the messages I receive in [my regional language], so I have no difficulty understanding their meaning.

Madhav’s testimony further reinforces the benefits of multilingual DFS alerts. By receiving cyber safety messages in the regional language, Madhav expresses that he can easily read and understand them: “There are [cyber safety] messages in [regional language] also. I can easily read and understand them.”

Banking customers also receive a website link via the bank’s SMS, which allows them to access more information, such as Do’s and Don’ts of DFS guidelines, in a multilingual format. DFS-related awareness content published on the bank’s website showed the cyber awareness content in a multilingual form. Figures 5-12 and 5-13 illustrate the multilingual DFS awareness guidelines by the public sector bank – operating in these rural areas.

Figure 5-12. Bank-Provided Multilingual DFS Cyber Awareness Guidelines



Safety and security guidelines in English

Safety and security guidelines in Hindi

Figure 5-13. Bank's DFS Cyber Awareness Advice in Multilingual Format

In conclusion, participants' views presented in this code underscore the significance of accessing cyber safety alerts and practice guidelines in regional languages. Comments reveal that accessing such crucial information in the local language shields these

individuals of varied educational backgrounds from potential cyber threats and contributes to safer financial transactions.

Code: responding to DFS cyber threats

Analysis shows that DFS users in these villages use their DFS-mediated learning and digital apps to smartly respond to cyber threats in many ways, such as by identifying and blocking scam calls. For instance, Palki, who receives cyber awareness messages through DFS channels, shared her experience and described how she managed to avert a phishing attack by a DFS scammer:

> I got a call from the [scammer], who pretended to be a bank employee and asked me to provide my full name and debit card details to transfer the lucky draw amount to my bank account… I immediately blocked that number.

Like Palki, Jai, who receives DFS safety tips through the bank's SMSs on his mobile phone, shared his experience of receiving a phishing attack. Jai also explains the scammer's way of luring him into the cyber trap and reveals how he dealt with that cyber scammer:

> He [the scammer] was acting like my friend. I could not recognise his voice, so I addressed him with some of my friends' names. Suddenly, he picked one name and said, "Finally, you recognise me." Then, he talked about usual things like "How is everyone at home?" etc. Then, he asked me if he could use my bank account because his employer could not credit his salary into his bank account and for this transaction, he would require an OTP from me. Then, I immediately realised that he was a scammer asking for an OTP [to commit fraud]. I disconnected the call. He kept calling me for some time, but I did not pick up.

Another participant, Lokesh, who receives DFS awareness from DFS channels, describes a past event when he recognised a phishing attack through the scammer's conversation style: "I received a fake call. But I recognise him by his [language] tone. He was trying to lure me." Lokesh also recognises the severity of DFS threats and stresses developing a vigilant environment to respond to prevalent phishing attacks on banking customers:

> These hackers are very smart. Today, you learn their one trick [to trap customers]; they invent a new hacking scheme. So, we all should be alerted to safeguard ourselves from these hackers.

Like Lokesh, Palki also reported about detecting a cyber threat through a scammer's communication style:

> He said that my name had been selected in a lucky draw… But I doubted… His way of talking was unprofessional. Also, he was rushing to get my details. I became sure that he was some hacker trying to steal my money.

Lalit stated how the use of a smartphone application helps him to prevent cyber threats by recognising the details of phone calls coming from unknown numbers or contacts:

> Luckily, it has not happened to me. I have downloaded the [caller identification application] on my [smartphone]. It is a handy [application]. It displays caller information [on mobile screen], like the name and location. It also warns if the call comes from scamming [phone] numbers.

While the evidence showed active DFS users in these rural communities used their cyber hygiene knowledge to respond to the cyber threats effectively, discussions with passive participants revealed their lack of ability to deal with DFS scammers. For instance, my conversation with one passive user, Harpal, pointed to his inability to respond to the phishing attack due to a lack of cyber awareness.

Harpal is a retired school principal who receives his monthly pension in his bank account. Despite using a smartphone for basic functions (e.g. making and receiving calls), Harpal lacks the necessary digital skills to access DFS fully. However, he mentions getting bank transaction alerts: "I get a message whenever any transaction occurs in my account."

During an interview, Harpal shared about the DFS fraud incident that occurred recently. While describing the incident, he mentioned that the scammer acted like his close acquaintance and managed to lure him to get personal details to hack his bank account over the phone call:

> The voice of the fraudster was similar to one of my acquaintances. I trusted him, and he [scammer] hacked my account and stole my 100,000 rupees [Indian currency]. I only learned when I received four continuous [withdrawal transaction alerts] from the bank on my phone. I was totally shocked.

Overall, this code highlights participants' encounters with DFS cyber scammers attempting to commit financial fraud and how they responded (e.g. blocking the caller) to such events by recognising the evolving scam tactics. Participants' comments also underscore the individuals' sense of being vigilant and cautious when dealing with uninvited calls from fraudsters. They also highlight the value of technology, such as caller identification applications, in assisting these individuals in identifying and avoiding potential scams.

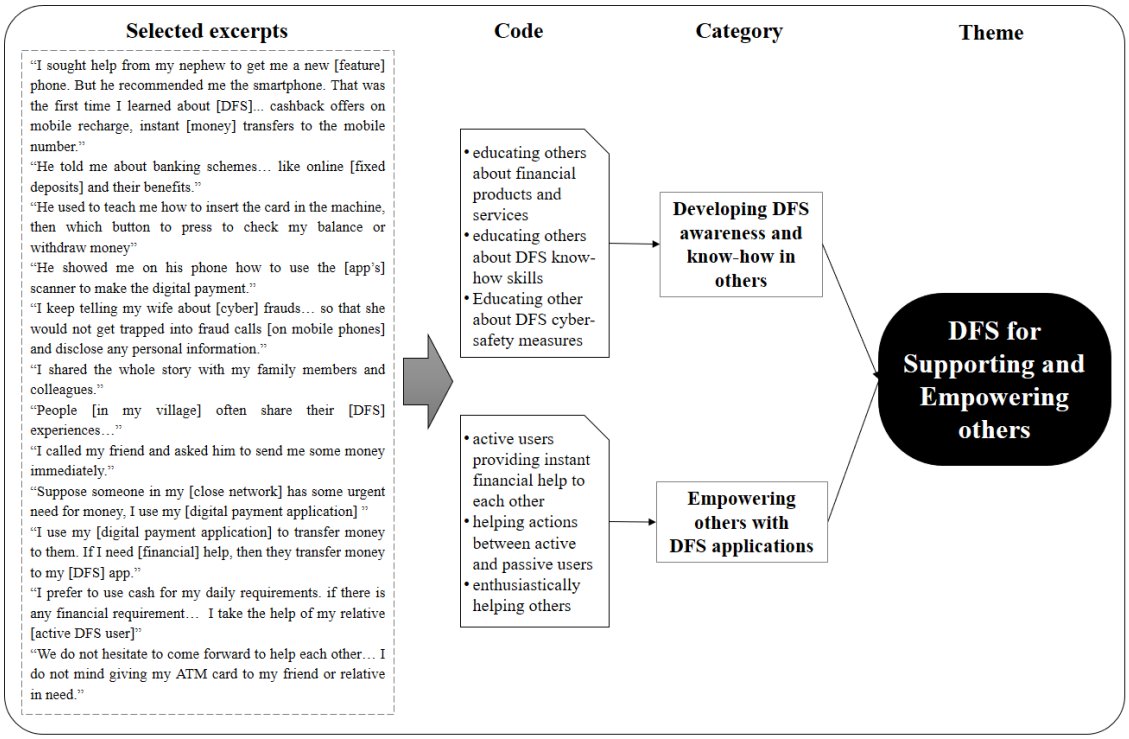
5.4 Theme 3: DFS for supporting and empowering others

This theme presents the most salient findings of this study. Challenging the conventional understanding, the patterns identified within this theme underline the collaborative practices – mediated by DFS knowledge, skills and applications possessed by individuals – to enable others to realise diverse financial and non-financial goals. This theme constitutes two categories: 1) developing DFS awareness and know-how in others and 2) empowering the community with DFS applications.

The first category of this theme focuses on exchanges related to DFS awareness and know-how that occurred among these villagers. Individuals, active DFS users, in these rural communities share information about online financial products and services, cyber-safety tips and DFS operational skills with other members (both active and passive). Individuals exchange these DFS resources through sharing their first-hand experiences of online banking features, providing direct training (e.g. instructing debit card use at ATM outlets or registration process of digital payment services) and sharing DFS-related stories and experiences to alert others within their close-knit social circles (e.g. family members, relatives, friends, or neighbours).

The second category highlights people extending their use of DFS applications to assist others (either active or passive users) belonging to their close networks. This category highlights evidence of active DFS users using the capacities of DFS to exchange immediate financial support with other active users. Data also show that passive users leverage DFS through their active counterparts to realise their life goals. This category also features people’s intentions and motivations that stimulate these helping actions. Figure 5-14 illustrates relevant codes and categories identified during the thematic analysis to develop this theme.

Figure 5-14. Thematic Graph Illustrating the Construction of Theme 3



5.4.1 Category: Developing DFS awareness and know-how in others

This category highlights the role of the active DFS users in these villages in constructing DFS literacy among other community members. Three codes constitute this category: learning financial products and services from others, learning DFS know-how from others and learning DFS cybersecurity measures from others. The evidence in the first code represents people's practices of sharing knowledge about online banking products and services, using non-technical language, with their relatives, friends, and neighbours to enhance and apply that financial knowledge to meet their goals. The second code emphasises the helping practices followed by active users in these rural communities within their close network to make others learn DFS operational skills, such as how to use a debit card in the ATM outlet and DFS mobile applications. The evidence gathered in the third code shows that individuals share DFS safety and risk prevention methods with others within their close social network.

Code: educating others about financial products and services

People in these villages educate others by sharing information about digital banking products and services. For instance, Brij spoke about getting help from his relative to raise awareness about DFS mobile applications and their benefits after he broke his feature phone while working on the farm:

> I was working on my farm and accidentally broke my [feature phone]. I sought help from my nephew to get me a new [feature] phone. But he recommended the smartphone. That was the first time I learned about [DFS]... cashback offers on mobile recharge, instant [money] transfers to the mobile number, etc.

Similarly, other participants – Deepam, Palki, Jatin and Kulveer – shared their experiences revealing DFS knowledge sharing and receiving practices within their social circles. For instance, Deepam disseminates knowledge about loans and financial planning with his neighbours that could benefit them in the future: "I often discuss [loan] plans with [people] in my neighbourhood… they might find this information useful for their requirements in the future." Palki, on the other hand, learned about online banking products through her spouse, who works in the IT firm in the city: "He told me about banking schemes… like online [fixed deposits] and their benefits." Jatin unfolds his knowledge about digital payment apps during India's demonetisation from fellow experienced villagers: "During the demonetisation, I learned about these [DFS mobile] apps through other boys [who go to the city for work] in the village."

Kulveer, a shopkeeper in the village, found his gateway to learn about digital payments through a friendly neighbouring shopkeeper, who introduced him to the use of a digital payment barcode system for business transactions and guided Kulveer through the process of obtaining a QR code for his shop:

> My neighbouring shopkeeper told me about the barcode system for receiving online payments from customers. He explained the QR code request process and helped me get [the QR code for my shop from service providers].

Evidence also shows that individuals in these villages use non-technical language (or terminologies) to explain complicated financial terms to their less financially literate peers. According to Deepam, sharing information in a layperson's manner helps the other villagers in his circle grasp the meaning of financial vocabulary used by banking institutions in their SMSs:

> People [banking customers] receive SMSs on their mobile phones [from banks]. But not everyone [in our village] understands these messages, especially people [with low literacy levels]. It is difficult for them to determine the meaning of technical [financial] words… like

> "update your KYC." But if you explain them [technical words] in simple language, they quickly understand their meaning.

Bhuvan also supports the idea of using simple language to enhance financial concepts among close community members:

> I needed a vehicle to commute to [my new] job [in the city]. It was my first job, and I had no credit history, so it was not easy to get a bank loan. So, we applied for the loan in my father's name. But we found that we would get less [loan] amount [than required] because my father's CIBIL [credit score] was very low. So, my father refused to take that loan. He knew nothing about the CIBIL score and never cared about it. But, when I explained to him [about the significance of credit history], he understood the logic and agreed [to take the loan].

Bala also mentions getting the help of his children to understand the SMSs he receives from the bank: "Some messages use words that I do not understand. So, I take the help of my children to read [those messages] and explain to me its meaning."

Altogether, the evidence presented in this code depicts various aspects related to people's engagement with DFS. Excerpts reflect the role of personal connections in improving DFS awareness, where individuals discuss and disseminate information about MFS apps, products, and services with their family members, relatives, friends, and neighbours. Moreover, these interpersonal connections facilitate individuals with low literacy levels to enhance their understanding of complex banking terminology and processes by simplifying and explaining them in plain language.

Code: educating others about DFS know-how

Data show that individuals in these villages also acquire digital skills – required to operate DFS applications – from their experienced counterparts. For instance, Brij, who initially became aware of online banking products and benefits through his nephew after getting his first smartphone, reveals how his nephew helped him learn and enhance his smartphone and DFS operational skills:

> I had no experience with a smartphone, but my nephew taught me everything… like [touch screen use], saving contacts, and downloading [applications]. I also learned how to link my bank account [with the DFS mobile app] and recharge a mobile plan.

Another participant, Madhav, shares his learning journey about ATM card use with the help of his friend, a DFS-experienced villager:

> I did not use an ATM card until after a few years of opening my bank account. I was scared. I did not know how to operate the ATM system. One of my friends [another villager] had an ATM card. He knew [ATM use]. He was very studious and intelligent among all of us [friends]. So, sometimes we used to go together to the ATM… He used to teach me how to insert the card in the machine and then which button to press to check my balance or withdraw money. Now, I am totally comfortable with it.

Similarly, Dinkar speaks about how he learned to use a digital payment app for the first time from another villager – a shopkeeper from whom he usually purchases grocery items:

> When I saw the barcode sticker on his counter, I enquired him about that. Then, he explained that I first needed to download the [payment] application on my phone. Then, he showed me on his phone how to use the [app's] scanner to make the digital payment.

Kulveer also credited his neighbouring shopkeeper for attaining his initial DFS operating lessons: "He [gave me the demo] on how to receive payment [from customers] through digital QR code and check the transaction [status] on my linked bank account through the mobile app."

Hari, who has been visually disabled since birth, spoke about his curiosity about using the DFS mobile application and credited the role his friend and smartphone talk-back feature play in his DFS learning journey:

> When [digital payment application] was launched in India, I was curious to know how this could help me with my requirements. So, I got the help of my friend to register for the [DFS mobile] app. To gain self-confidence, I performed a few small transactions [using the talk-back option of my smartphone] through my mobile app to my friend's mobile app.

The analysis also reveals that DFS users in these rural communities help other DFS users to improve their existing DFS skills. The evidence shows that these active DFS users guide each other within their social circles, such as relatives, friends, and neighbours, to deal with any issue or a new feature of which they are unaware. For instance, Vikas, while

describing his past DFS incident, highlights how he used his friend's DFS knowledge to overcome his fear and improve his DFS skills:

> There was an incident when I performed the online transfer to my supplier. But somehow, I did not get any [confirmation] message after that transaction. Then, I immediately checked my bank account balance and found that the amount had been deducted. Then, I called the supplier to confirm, but he said, "I did not receive [the payment]." I was scared about my money. Then, I called my friend. He said, "Don't worry. Your money is safe and will be reverted to your account." Now, I know there is no need to panic if there is no message after the transaction.

Jatin speaks about how he improved his DFS skills by sharing his DFS-related issues with his friends:

> Initially, I found it a little complex because [the DFS app] has many features I did not know. [DFS apps] are different from YouTube and WhatsApp applications. So, I was not very confident about their use. So, I used to ask my friends about [app operations] when I had doubts or did not know how to perform [the transaction].

Madhav also reveals his friend's help to deal with his early fear of using the DFS channel alone:

> When I received my ATM card, I was initially uncomfortable because I used to fear pressing the wrong button [on the ATM system]. So, whenever I needed to withdraw money, I used to call my [friend] to go to the ATM outlet with me. I am confident now.

Chirag also shares his experience with using digital payment applications. He mentions encountering issues related to DFS application functions when he first started using them. However, with time, he found the applications easier to use. He attributes part of his learning journey to his prior digital knowledge, as well as assistance from other DFS application users (e.g. friends):

> I faced some issues related to app functions when I initially started using a digital payment application. But gradually, it became easy. My previous digital knowledge also helped me get comfortable with the digital payment application I use. I also sought help from my friends to clarify my doubts about the [DFS mobile] app.

Tilak speaks about how he demonstrated the online loan feature – in his DFS mobile application – to other DFS users, believing that sharing his new DFS knowledge and experience would enable them to fulfil their potential financial goals: “I told them about the online loan that I used for my personal [loan requirement] … perhaps they can also use [that DFS mobile application feature] in the future.”

Collectively, the evidence presented within this code sheds light on the role of peer support within a close social network in acquiring hands-on learning of DFS operations. Participants' comments illustrate how personal connections play crucial roles in these rural communities in empowering other inexperienced individuals to become proficient with DFS by helping them learn about DFS features such as linking bank accounts, using digital payment options, working with debit cards at ATM outlets, and handling QR code scanners. Also, this code emphasises the role of experienced DFS users as a readily available technical support resource for relatively new DFS users. The experienced users, with their assistance, enable new DFS users to manage their transaction-related issues and nervousness.

Code: educating others about DFS cybersecurity measures

Data show that active DFS users in these villages learn about safe DFS practices mutually within their social circles. These individuals share DFS safety guidelines with other active community members, enabling them to stay updated about DFS scams and avoid potential DFS risks and financial losses. For instance, Krishna stated: “I also discuss [cyber awareness] with my friends so that they also become aware of cyber frauds and do not make any mistake.”

Another participant, Tilak, mentioned sharing information about safe digital banking with his wife to educate her so that she can prevent her confidential information from DFS scammers: “I keep telling my wife about [cyber] frauds… so that she would not get trapped into fraud calls [on mobile phones] and disclose any personal information.”

Palki also cited acquiring DFS cybersecurity information from her husband: “My husband is an IT officer. He also discusses [cyber] threats and how to ensure safety while performing [online] banking transactions with me.”

In addition to sharing DFS cybersecurity measures, participants mentioned learning about safe banking through others' first-hand experiences and stories. For instance, during an interview, Palki, while describing an incident related to a DFS threat, also pointed to the practice of sharing personal DFS threat experiences with other community members and alerting them about potential DFS risks:

> I received a fake call [from a cyber-scammer] … I shared the whole story with my family members and colleagues. It is important to carefully listen to these scammers and understand their tricks…I think it is a good practice to alert others and make them aware of these scams.

Prakash supported the idea of disseminating DFS safety awareness while recalling his cyber threat experience: "I also shared my experience [call from a DFS scammer] with other people in my village."

Vikas perceived a story-sharing culture among villagers as an effective way to become aware of DFS threats: "Since people [in my village] often share their [DFS] experiences, I know about these frauds... like how fraudsters converse on the phone."

Tilak also perceived story-sharing culture as a source of acquiring awareness about potential DFS threats: "In our village, people share their good or bad [DFS] experiences. I also learn from their experiences."

Krishna, while mentioning another rural individual's incident, highlights the role of knowledge-sharing practices in these villages in dealing with DFS risks:

> Recently, one retired [school employee - Harpal] in a nearby village got trapped in a fraudster's fake call and lost a significant amount of money from his bank account. These incidents also helped us learn about such [cyber] frauds.

The analysis also shows that besides verbal communication (i.e. face-to-face story sharing), individuals in these villages also leverage social media platforms to exchange awareness among the community members. For instance, Palki stated: "I have seen many [helpful] videos [posted by friends and relatives] about digital banking threats on my WhatsApp."

Krishna also mentions accessing cyber security awareness through the social media platform. He perceives social media messages as more edifying, allowing him to gain more knowledge about DFS cyber safety:

> They [social media messages] are highly informative… people in our village share personal phone call recordings of conversations between customers and scammers… Now I know their [fraudsters] style of dialogue and details they ask from customers.

Discussions with rural bank employees in these villages reveal that rural banks encourage customers to share their experiences and fraud incidents within their circles. Rural banks believe that the practice of sharing DFS experiences and stories helps rural consumers prevent themselves from potential DFS threats and contributes to banking institutions' DFS risk awareness goals.

One bank employee stated: "Exchanging experiences with each other helps rural people become aware and alert about the risks, which banks alone cannot do." Another bank employee says: "We encourage this culture because it supports our awareness programmes."

Similarly, a BM (Shalini) working in a rural bank emphasises the role of consumers in developing DFS awareness among rural customers: "It is difficult for banks to ensure that the whole rural population is aware of DFS. It is a joint effort of service providers, government, and consumers."

In summary, the data patterns in this code reveal the knowledge-sharing practices among individuals regarding prevalent DFS frauds. Excerpts highlight that individuals actively educate others by sharing their knowledge, experiences, and real-life incidents (e.g. stories of scam calls and tactics used by fraudsters) related to digital banking threats within close social circles. The comments also disclose the favourable role of social media apps (e.g. WhatsApp) in disseminating helpful videos on DFS frauds with peers. Moreover, the statements from bank employees underscore the significance of knowledge-sharing in rural areas. They acknowledge that these collective efforts are essential in developing awareness concerning DFS and cyber threats.

5.4.2 Category: Empowering others with DFS applications

This category emphasises rural people's helping practices using DFS applications to support other known individuals, both active and passive. Three codes constitute this category: active users providing instant financial help to each other, active users assisting passive users, and enthusiastically helping others. The evidence in the first code highlights individuals' use of DFS to enable others to fulfil their urgent financial needs. The analysis points towards the exchange of DFS-mediated instant support between active DFS users. The evidence in the second code highlights the flow of DFS-mediated supporting acts between active and passive users, particularly from younger (active users) to elderly (passive users) members and between active and passive small-scale business holders. This code also represents data showing active members' use of DFS to help passive counterparts meet their non-financial requirements. The evidence in the third code focuses on people's intentions of supporting others belonging to tight or loose social networks.

Code: active users providing financial help to each other

The analysis shows that active DFS users in these villages leverage DFS to provide instant financial support to other active users within their social networks. These individuals use digital payment mobile applications to provide immediate financial assistance to one another. For instance, Madhav (an active DFS user), while citing one of his past incidents, highlights the instant DFS-mediated support he received from his friend to meet urgent financial requirements:

> I was at the ATM outlet. I needed to withdraw money because I had to give it to someone. When I checked my account balance, I found that I did not have enough money in my bank account. I called my friend and asked him to send me some money immediately. I received the money in my account from my friend after some time.

Another active DFS user, Vikas, also comments on utilising his digital payment application to provide immediate money-related support to his close ones, enabling them to meet their requirements: "Suppose someone in my [close network] has some urgent need for money, I use my [digital payment application] … it takes [a few] seconds."

The analysis shows that these acts of instant financial support are reciprocal. These active DFS users utilise DFS mobile applications to help each other mutually. For instance, Palki (an active DFS user) explicitly supported this idea:

> Another good aspect of [DFS] is that you can transfer money to anyone instantly…if I get a call from my friend or relative [for financial help] … I use my [digital payment application] to transfer money to them. If I need [financial] help, then they transfer money to my [DFS] app.

Another participant, Bhuvan, who is actively using DFS, reflects on the bidirectional DFS support in his comment: "It is mutual. Whenever my relatives or friends need [any financial] help, I transfer money to their [DFS] mobile apps … They also support me whenever I seek [for any financial help]."

These reciprocal helping actions are not only related to transferring money to each other when needed but also associated with sharing digital payment accounts with active users. For instance, Kulveer, an active DFS user, comments about exchanging digital payment account details (e.g. payment QR Code) with his neighbouring shopkeepers (active DFS users) to support each other in performing business transactions:

> Another valuable aspect of the digital payment facility is that if there is some problem with my QR [digital payment system] … if service is down, and my customer wants to pay through [mobile payment application], I use my neighbouring shopkeepers' QR sticker… if they face a problem, then they use my [QR] sticker.

Vairaj (an active DFS user) also provides support for the idea of mutual DFS support among retail shopkeepers: "Another good thing is that I can use other shopkeepers' [QR code] in case mine is not working … It is a very common practice [among retailers] here."

Overall, the highlighted evidence in this code paints a positive picture of the resourcefulness of active users leveraging DFS speed and convenience to support one another within a close-knit sphere in times of financial urgency. These reciprocal helping actions involve making instant money transfers via MFS apps and lending a QR code to the neighbouring shopkeeper.

Code: helping actions between active and passive users

Analysis shows that the act of DFS-mediated support occurs not only between active DFS users but also between active and passive DFS users. As passive DFS users in these

rural communities primarily rely on traditional financial services (i.e. bank branches) or face-to-face DFS channels (i.e. BC points), they also receive help from their active counterparts to realise their financial requirements. As one passive DFS user, Harish puts it:

> I prefer to use cash for my daily requirements. I go to the bank branch whenever I need to withdraw money or perform any financial transaction. But if there is any financial requirement and I know that I cannot access the bank branch, I take the help of my relative [active DFS user].

Gagan, another passive DFS user, while sharing his perspective on his financial practices for meeting his routine financial transactions, emphasises the DFS support he receives from his friends during urgent situations:

> I am comfortable with cash… Like daily groceries, livestock maintenance, [motorbike] fuel, and children's [school] fees. If there is something urgent, I [take favour] from my friend… he has [digital payment application] on his mobile.

The analysis also indicates DFS-mediated supporting acts between younger members (active DFS users) and elderly members (passive DFS users). Evidence shows that these younger active users help the elderly by enabling them to fulfil their urgent cash requirements using DFS channels. For instance, Prakash (an active DFS user) mentions using his father's debit card to withdraw cash from the ATM outlet for his father (a passive DFS user): "Whenever he [his father] needs cash, he gives me his ATM card to withdraw money from his account."

An elderly participant, Harpal (a passive DFS user), is a retired school principal. He says he prefers to spend most of his time in the village since he retired. He even stopped visiting the bank (the branch outside the village) to perform financial transactions: "I rarely visited the bank after my retirement." Like other passive users, Harpal also often receives support from his son to access financial services: "I have given my ATM to [my son]. He operates my ATM card [for withdrawing money] whenever I need."

The DFS support relationship between active and passive users also exists among small-business owners in these villages. Since not all business holders (e.g. retailers) moved to digital payment options in these villages, passive business holders often seek help from

their active counterparts to perform business transactions. For instance, Bharti, who is a passive DFS user, highlights the helping act of other shopkeepers in the market:

> Usually, we [referring to herself and her husband] prefer to take payment in cash. If the customer does not have enough [cash] or wants to pay digitally, we request the customer to pay the balance using our neighbouring shopkeepers' [digital payment system]. They never refuse to let us use their digital barcode system.

Besides helping passive users to meet financial requirements, analysis shows that active DFS users are also assisting other (passive) members with their needs not necessarily related to money, such as recharging other members' mobile plans through personal digital payment mobile applications, paying online for the medicine or getting access to career advancement resources. For instance, the comment by Rajiv (an active DFS user) best reveals this helping practice: "My neighbour [a passive user] came to me at night... His mobile pack was expired. I used my [DFS mobile app] to recharge his mobile plan… people do such favours here."

Bhuvan (an active DFS user), who works in the city during the weekdays and returns to his home (in the Bhatona village) on weekends, perceives that DFS enable him to support his family members with their essential requirements (e.g. healthcare) remotely. While reflecting on his past incident, Prakash points out the significance of the DFS mobile application in meeting his father's health-related requirements:

> My father needed some [important] medicines. I was far [working in the city]. So, I contacted the chemist (through WhatsApp) near our village, requested to arrange the delivery of medicines at home, and paid the bill through my [mobile banking app].

Conversations with research participants also reveal that not all younger individuals in these villages are active DFS users, particularly females. The analysis shows that active DFS users provide their DFS support to other younger aspirants (passive users), enabling them to participate in career development activities. For instance, Yogesh (an active DFS user), who is also preparing for the job entrance examination, while citing the past event, describes how he helped a female aspirant (from the same village) to gain access to the online training course:

> I purchased online coaching for my friend. She also wanted to prepare for the job entrance of the bank PO [probationary officer]. His father did not want her to go to the city only for coaching. So, she asked me to help her purchase the online course for preparation.

In essence, this code reflects a diversity of DFS-mediated support between active and passive users residing in these villages. Evidence reveals that active DFS users provide financial assistance to their passive counterparts within their close social circles, including family, relatives, and other villagers. These actions involve assisting passive users in meeting various requirements, such as accessing cash, paying for medicines, recharging a mobile plan, and purchasing an online job training course.

Code: enthusiastically helping others

Patterns in this code reveal that people in these villages perform helping actions enthusiastically without any hesitation or reluctance. Research participants reported that they do not hesitate to offer DFS help to enable others (both active and passive DFS users) to meet their financial goals. For instance, Vikas overtly comments on people's commitment to helping each other by saying: "We do not hesitate to come forward to help each other." He further mentions the extent of providing DFS-related help to other individuals within his social circle: "I do not mind giving my ATM card to my friend or relative in need."

Similarly, Krishna describes an incident when his friend showed a commitment to help another villager:

> My friend called me and informed me that someone from our village [outside of our close network] had met with an accident near the [city] … we [referring to some other villagers] all gathered at one place to go together to help him. We also carried some cash to support the family in dealing with medical expenses. [My friend] did not have much cash in his pocket, so he gave his [ATM] card to [a family member] of that person.

Participants further extend the idea of enthusiasm with frankness in their supporting actions; that is, people do not hesitate to seek help from other individuals. For instance, Gagan expresses the idea of getting help from acquaintances without being hesitant: "I do not feel shy to get help from my friends [active DFS users] if it is urgent." However, Gagan also clarified that he does not take undue advantage of the favour he receives

from his close ones: “I pay them the same amount [of online transaction] in cash as early as possible.”

Brij, while reflecting on his past incident, pointed to rural people’s friendly culture of helping each other:

> We [referring to other villagers] are very casual with each other. Let me give you an example. Recently, I met my cousin at a social gathering after a very long time; we talked for hours and had food together. When leaving, he asked me to activate his mobile pack [using my DFS mobile app] because he had to travel back to his village, and there was no [recharge] shop nearby, so I [helped] him.

Extracts within this code reflect a strong sense of willingness among individuals in these rural communities to support each other and leverage DFS. Participants' comments express a readiness to provide DFS-related help, such as giving an ATM card to friends or relatives in need. Moreover, the provided excerpts emphasise that individuals in these villages do not hesitate to seek help from others (i.e. active DFS users) in their close networks when facing urgent needs or casual requirements (e.g. asking a relative to recharge a mobile pack).

5.5 Chapter conclusion

This chapter described the key themes, categories, and codes identified by following an inductive coding approach. The resulting themes, supported by interview excerpts and fieldwork photographs, offer a rich understanding of DFS dynamics within visited rural communities of UP state. These findings lay the solid foundation for interpreting and discussing core themes and their corresponding categories, which will be deliberated in the following chapter.

Chapter 6 Discussion

6.1 Chapter outline

This chapter serves as a stage for an interpretation of the three core themes identified in the previous chapter: DFS for enhancing economic freedoms, DFS for expanding financial literacy, and DFS for supporting and empowering others. The interpretation of each theme is performed while keeping the overarching research question in mind: How do individuals in rural regions of India leverage DFS to achieve life goals? The discussion is organised in two segments. The first segment explains the key findings by comparing and contrasting them with current DFS literature. Integrating these findings into the existing body of DFS knowledge contributes to a broader understanding within the DFS research community of the evolving role of DFS in people's lives, especially in the context of rural regions in developing nations. The subsequent discussion, employing abductive inference logic, involves mapping the core themes with CA and SC theories as outlined in Chapter 2. This part of the discussion aims to extract fresh insights into the individuals' DFS practices aligning with these theories.

6.2 DFS for enhancing economic freedoms

The findings revealed that individuals' DFS use enables them to achieve their life goals by expanding their economic choices in various ways. The results suggest that active engagement with DFS empowers individuals to gain more convenient and informed access to daily resources needed to meet their routine requirements. These findings are consistent with previous research that has examined the use of DFS by rural communities in developing nations, allowing them to access a wide range of online products, leading to improved subjective wellbeing (Hongyun Zheng & Ma, 2021) and empowerment in fulfilling their routine requirements (Suresh & Latha, 2021).

This theme reveals that using DFS has shaped individuals' informal economic activities, such as sidewalk retail businesses, by providing a secure and convenient environment for accessing formal financial services. This indicates the importance of DFS as a widely accepted solution that has the potential to streamline the economic activities of informal workers in urban regions (Nandru, SA, & Chendragiri, 2023), as well as to those

in rural regions by saving their transaction time, maintaining sales records and reducing cash handling risks, as exemplified by findings of this study.

In addition to safety and convenience as driving forces behind DFS use, the findings of this study also indicate the role of price incentives (e.g. cashback offers) in energising DFS use among individuals within these rural communities. However, this finding diverges from past research, suggesting that the 'price benefits' offered by DFS have no role in encouraging DFS use (Pal et al., 2020).

Besides empowering individuals to meet their everyday resource requirements, DFS assists these individuals in managing their financial obligations. The findings of this study draw special attention to DFS-mediated payment alerts offered by MFS applications. The integration of these intelligent features in DFS enables these individuals to meet their financial obligations (e.g. loan repayments and insurance premiums) responsibly and on time.

Findings show that these automated alerts further help alleviate DFS users' mental burden and fear associated with missed or late settlements of their financial dues, which usually result in additional financial pressure of late fee charges. As mental exertion, often characterised by psychological pressures, including anxiety and fear (Chang, Chen, & Hashimoto, 2022), can impact people's happiness and satisfaction (Steptoe, O'Donnell, Marmot, & Wardle, 2008), the use of DFS alert system can be recognised as pressure reliever for DFS users allowing them to achieve mental wellbeing.

While previous research recognises the positive role of DFS in alleviating economic pressures, particularly among those with limited access to financial services channels (Ibtasam et al., 2018; Saxena & Joshi, 2019; Mariscal & Rojas-Losano, 2020), as well as the negative association between people's DFS use for meeting financial obligations and happiness (Trachuk & Linder, 2017), the findings of this study provide fresh perspective on DFS potential to improve contentment by reducing mental exertion.

In addition to mitigating mental exertion, the findings of this research suggest that DFS play a vital role in safeguarding individuals' physical wellbeing by reducing their vulnerability to physical harm associated with financial theft. Being a victim of theft can have devastating consequences for individuals, regardless of their geographical location.

However, it is argued that specific infrastructural challenges, such as isolated pathways and limited police surveillance, may create favourable conditions for offenders to easily target individuals living in rural areas (Cross, 2020).

Considering that approximately half of the world's population lives in rural areas, and this ratio is even higher in developing countries (Grote & Neubacher, 2016), ensuring crime safety is crucial to promoting the sustainable development of rural populations (Ceccato, 2016). Therefore, this observation is significant as it sheds light on the role of DFS in preventing individuals from financial theft prevalent in such isolated regions, which often results in physical injuries or loss of life.

Moreover, while extant research has primarily focused on DFS safety issues concerning uncertainties, fraud and information loss (Gupta, 2022; Slade, Dwivedi, Piercy, & Williams, 2015; Widyanto, Kusumawardani, & Yohanes, 2022), the current study presents a fresh perspective by highlighting the enhanced sense of physical wellbeing experienced by the active DFS users within these villages.

The research findings underscore the empowering role of DFS in enabling individuals, especially those with visual impairments, to manage their financial requirements autonomously. This finding accentuates the substantial role of DFS in enhancing the economic freedom of individuals confronted with physical challenges while preserving their privacy and dignity. This observation supports the results of prior research recognising the DFS's enabling role in providing visually impaired individuals access to essential financial services (Okonji & Ogwezzy, 2018; Hassan, Abd El Aziz, & Hamza, 2021).

It is argued that the availability of job opportunities significantly influences the financial goals of individuals in rural areas (Wang & Fu, 2022). In light of this perspective, the analysis underscores the specific aspects of both remote and onsite DFS channels in expanding economic prospects for residents in rural areas of UP. This study's findings reveal the ICT-BC model's pivotal role in expanding employment opportunities by providing individuals with regular income avenues. While these observations are consistent with previous research emphasising the positive role of DFS in offering employment to individuals living in rural regions (Wang & Fu, 2022), current findings

diverge from the past observations of Dolan and Rajak (2018) and Peša (2018) who argue against DFS's role in generating stable job and income opportunities.

In addition to creating economic opportunities, the analysis highlights the critical role of DFS in empowering individuals, especially those engaged in small-scale business activities (e.g. retail shop owners). Given the prevalence of informal credit practices in these rural communities, small retailers often face challenges managing their income flows. This study's findings suggest that implementing DFS (i.e. digital payment systems) not only helped these retailers discourage such practices but also improved their business income.

While previous studies recognised DFS's benefits for small entrepreneurs in terms of providing seamless business transactions (Amegbe, Hanu, & Nuwasiima, 2017; Mawona & Mpogole, 2013), easy access to credit and loans (Ahad, 2014; Akter, Priyodarshini, & Barua, 2021), investments in fixed assets (Islam et al., 2018), and tracking of business sales (Pazarbasioglu et al., 2020), the findings of this study offer a fascinating dimension to DFS by emphasising their role in reducing the informal credit culture.

In essence, the findings within this theme emphasise the instrumental role of DFS in expanding individuals' freedoms to manage daily resources, meet financial obligations and secure formal employment, ultimately enhancing their economic wellbeing.

6.3 DFS for expanding financial literacy

In the fast-changing digital environment of today, where technology is revolutionising financial transactions, it is crucial for individuals to be knowledgeable and conscious of the opportunities and risks linked to online financial products and services (Rodrigues et al., 2019). Financial literacy enables individuals to make improved choices related to spending and saving (Johnson & Sherraden, 2007). Moreover, financial awareness is viewed as a lifelong capacity-building endeavour, which can lead individuals to enhance their financial decision-making and socio-economic wellbeing (Yoshino, Morgan, & Wignaraja, 2015).

The findings in this theme draw attention to DFS use beyond being mere transactional tools. Evidence indicates that individuals within these rural communities utilise both

face-to-face and online DFS channels to acquire and improve financial knowledge and skills.

DFS-mediated digital media communication, such as mobile app notifications, infographics, and bank SMSs, has enabled active users in these villages to access informative content (Crawford, Di Benedetto, 2006; Ram, 1989). These digital communication methods provide accessible, convenient, and regular access to DFS-related knowledge, including information about banking schemes and offers. In contrast to the findings of this study, previous research has highlighted a significant lack of financial awareness among DFS users (Ibtasam, Mehmood, Razaq, Webster, Yu, & Anderson, 2017) and emphasised the need to expand educational efforts to enhance their understanding of advanced financial technologies through digital methods like video games (Rodrigues et al., 2019) or national-level programmes and strategies targeting various demographic groups (Yoshino et al., 2015).

However, the acquisition and enhancement of financial knowledge through these digital communication channels underscore the innovative and influential role of DFS in promoting financial literacy among users and empowering them to make more informed decisions that align with their financial goals (Johnson & Sherraden, 2007).

In addition to digital communication methods, the analysis sheds light on the importance of non-digital communication modes (i.e. the ICT-BC model) that these villagers, specifically those lacking online DFS skills, utilise to improve their financial knowledge. These findings emphasise the ICT-BC model's vital role in educating villagers about various banking schemes and products, bridging the gap for those not active and proficient in accessing information through digital communication methods. This face-to-face DFS channel ensures equal opportunity for passive users to stay updated about financial products and services. The beneficial role of the ICT-BC model in imparting essential financial knowledge to less-informed individuals finds support in recent research findings (Goel, Bandara, & Gable, 2022; Shylaja & Shivaprasad, 2021), which offer compelling evidence of the model's effectiveness in empowering populations with limited financial awareness.

The opportunities presented by ICTs in the age of widespread Internet access and usage come with the risks of cyber-attacks and cybercrime for individuals, communities,

organisations, and nations. A lack of cybersecurity skills impedes users' capability to leverage digital technologies effectively (Dodel & Mesch, 2019). As argued by Öğütçü, Testik, and Chouseinoglou (2016), a lack of awareness could increase users' chances of falling into the risk of cyber threats, and to leverage the true powers of digital technology, they must be aware of potential threats to keep their information safe. This applies to the DFS users as well. The growing popularity, as well as the adoption of DFS within rural regions, has led to increased cyber-attacks aiming to deceive individuals into disclosing sensitive information and stealing money from their bank accounts (Choo, 2011; Ivan, Ciurea, Doinea, & Avramiea, 2012). Therefore, to safeguard against potential DFS threats, it is imperative for the users to learn cybersecurity skills to ensure that their confidential information (Vishwanath, Neo, Goh, Lee, Khader, Ong, & Chin, 2020) and economic wellbeing is not compromised (Clough, 2015).

The findings of this study reveal that active DFS users in these villages enhance their cybersecurity awareness by utilising DFS-mediated communications channels. This improved awareness further helps them safeguard their confidential information and protect themselves from financial losses resulting from frequent cyber-attacks by DFS fraudsters. These observations demonstrate the influential role of DFS-mediated communication as a valuable resource for improving financial literacy among rural consumers. They also highlight that the consistent dissemination of cybersecurity information by DFS providers, including banks, encourages proactive cybersecurity practices among users, ensuring their financial wellbeing, and fostering trust in the DFS ecosystem.

Language has been a fundamental tool for learning and knowledge-sharing throughout history (Lo Bianco, 2010). In today's digital age, where technology plays a vital role in effective communication, a multilingual approach is crucial, especially in disseminating cybersecurity awareness among DFS users (Drevin, Kruger, Bell, & Steyn, 2017).

This study reveals that DFS users in these rural enclaves leverage the multilingual cybersecurity awareness method. This multilingual approach bridges language barriers and makes it easier for these users to understand potential threats and protection measures, contributing to their responsiveness in identifying and countering cyber threats. These findings uncover the distinctive and effective role of DFS-mediated

multilingual communication in creating a secure, inclusive environment for DFS users from diverse demographics. These observations depart from past research, which primarily focuses on the need for strategies to enhance cybercrime awareness in the banking sector (Florêncio & Herley, 2013), significant investments in technology and training to mitigate cyber threats (Rogozhkina, 2022) and cybersecurity awareness campaigns that provide regular training and technical support to customers (Johri & Kumar, 2023).

Overall, the findings within this theme offer insights that underscore the significant role of DFS-mediated communication methods in enhancing the financial literacy and cybersecurity awareness of DFS users in rural communities. This DFS-mediated awareness empowers these users with the skills necessary for informed and secure financial practices (Johnson & Sherraden, 2007; Yoshino et al., 2015).

6.4 DFS for supporting and empowering others

While the two previously discussed themes emphasise DFS-use practices for improving economic choices and financial literacy among active users, the patterns revealed in the third theme uncover surprising aspects of DFS in the lives of individuals residing in the rural regions of UP state. The findings within this theme highlight that individuals' supporting actions, facilitated by DFS-mediated resources, enable close-knit members to meet their goals.

The findings indicate that active DFS users in these villages educate their fellow villagers, such as family members, relatives, friends, or neighbours, about online banking products and services, functional skills, and cybersecurity guidelines for safe digital banking. This knowledge-sharing activity typically originates from experienced users and benefits those who are either not yet exposed to these digital banking technologies or have recently adopted DFS but have limited knowledge and skills.

Furthermore, these informal training sessions are accomplished by translating complex financial terms (e.g. the importance of credit scores) into everyday, easy-to-understand language, making the learning process easier for peers with lower financial literacy levels. This knowledge-sharing practice enables less experienced peers to become informed about online financial products and services, leading to inclusive utilisation of

DFS by members of these rural communities to achieve their life goals. These findings suggest the significance of social connections in bridging the DFS knowledge gap within these rural communities, especially where financial and digital literacy among people is limited or absent. These insights can be linked to previous observations that emphasise the influence of social interactions on the diffusion of information and the adoption of DFS within rural regions in the context of developing nations (Murendo, Wollni, De Brauw, & Mugabi, 2018).

In addition to helping others to learn about financial products and services, DFS users in these villages also assist newcomers, including friends and relatives, in improving their digital skills required for operating DFS, such as mobile applications. These trainings are typically provided practically, such as demonstrating how to use a debit card at an ATM outlet or make digital payments using a mobile app scanner. Findings show that these training sessions empower new DFS users to gain better control over the operation of DFS applications.

These insights suggest that active DFS users can play a vital role in developing DFS proficiency among new users, enabling them to leverage the DFS ecosystem to achieve their goals effectively. Moreover, these active DFS users can motivate and provide a direction to current passive users to become active users and utilise the DFS application independently. These observations can be aligned with a recent study highlighting technical guidance and peer support in fostering FI and empowerment in rural communities (Aziz & Naima, 2021).

The high occurrence of cyber fraud cases in these rural areas creates fear among individuals and affects their trust and inclination towards the DFS environment. The analysis shows that besides imparting DFS operational skills to others, active DFS users disseminate cybersecurity awareness within their close networks. They also alert their peers by sharing their first-hand experiences related to DFS threats. By recounting their personal encounters with cyber scammers, these activators assist others in recognising common tactics employed by fraudsters, such as during a fake phone call. This practice enables other users to enhance their cybersecurity awareness, prevent themselves from falling victim to evolving fraudulent attempts, and protect their personal and financial information. Given the significance of cybersecurity awareness for effective DFS use

(Dodel & Mesch, 2019; Duane et al., 2014), these insights are critical in addressing awareness gaps and risks for new users to build confidence in DFS (Mallat, 2007).

Consistent with the findings of this study, prior research suggests that increased awareness of cyber risks can help reduce users' fears of DFS applications (Trachuk & Linder, 2017). However, contrasting observations from previous research emphasise the adverse effects of information dissemination through personal stories. A recent study highlights that the word-of-mouth syndrome among rural residents negatively affects their DFS utilisation (Agwu, 2021).

Besides teaching fellow villagers about cybersecurity measures, active DFS users in these villages provide DFS-mediated financial support to others, including active and passive users, within their close-knit relationships. These findings suggest a high degree of interconnectedness among the residents of these villages.

The analysis also shows that these DFS-mediated supporting acts are not limited to the monetary requirements of peers, as the evidence suggests active users enable others to meet their non-monetary goals, such as accessing online learning resources for individuals seeking career development. This observation signifies the crucial function of active DFS users as a valuable resource for passive members of the community. Their role in enabling others to leverage the benefits of DFS in critical situations further reinforces the idea of collective assistance and progress within these villages.

These findings align with a recent study that observes the positive role of DFS users in assisting individuals with lower skill levels and knowledge, leading to significant advancements in digital FI (Aziz & Naima, 2021).

Another intriguing aspect of these collective actions by active users is their willingness to assist others in realising their goals. Evidence shows that active users do not hesitate to offer DFS help (e.g. giving a debit card to a friend or relative in need) to other individuals belonging to their close-knit social network. This supporting behaviour exemplifies their commitment to others needing assistance. Evidence also reveals that people in these rural communities feel open to asking for DFS-related help from other members. This openness to asking for support emphasises the high degree of bonds among these individuals and the existence of 'informal rights' that they have preserved

as part of a tightly knit network to serve their shared interests. Based on the extensive review of existing DFS literature, individuals' readiness and frankness in sharing DFS support represent novel and noteworthy insights. These findings suggest the significance of people's sense of bonding, responsibility, trust, and cultural values, as well as the convenience offered by DFS applications. These factors collectively encourage individuals to support both their family members and those outside their immediate family network.

These DFS-mediated support practices signify the role of active DFS users, whom I term ‘DFS Cultivators,’ serving as bridging agents between traditional and digital access to financial services. Similar to how cultivators nurture crops, DFS cultivators play an essential role in promoting DFS use within these rural enclaves. They engage in continuous sharing of DFS resources, knowledge, and experiences, as well as personal DFS tools (e.g. mobile apps, QR codes and ATM cards) to perform financial activities for other members of the community. This engagement ensures that even passive or new users can benefit from the DFS ecosystem and enhance their quality of life, regardless of their level of engagement with DFS. These DFS cultivators often possess higher levels of formal education and effective communication skills, which help them simplify the DFS learning process for their peers within their close-knit social networks.

My observation and analysis also suggest that these DFS cultivators possess higher formal education levels and effective communication skills that further help them to make the DFS learning process easier for their peers within their close-knit social networks. These actions not only facilitate immediate financial support but also help them develop DFS literacy, skills, and trust, among others. By acting as connectors and educators, DFS cultivators in these communities help bridge the gap between traditional financial practices and modern digital solutions, nurturing an environment where community members can thrive in the digital economy.

Overall, findings from the first two themes reflect DFS's role (as a means) in enhancing individuals’ financial abilities and skills to achieve their self-oriented life goals. Mapping the evidence from the last theme manifests the prosocial use of DFS-mediated resources by active users within their close social spheres. Prosocial behaviour involves voluntary actions aimed at benefiting individuals or a group. These actions are chosen willingly,

not out of obligation. While the goal of prosocial actions is to benefit others, individuals may have distinct reasons for engaging in them. For example, some might help others to gain personal rewards or approval, while others act out of genuine empathy and care about others' well-being (Eisenberg and Mussen, 1989). Typically, such prosocial behaviour thrives within community networks bounded by norms and mutual trust among individuals or groups for mutual benefits and well-being (Brehm and Rahn, 1997; Putnam, 1995).

While these themes enhance our understanding of the evolving DFS-use practices of individuals within these rural communities, mapping the evidence of these three core themes with extant concepts of CA and SC uncovers a conceptual continuum symbolising the diverse ways individuals can utilise DFS-mediated resources to achieve their personal goals, alongside contributing to the life goals of their familial and non-familial relations within their social circles. In the following sections, I will discuss this DFS-use continuum and its theoretical relevance with CA and SC perspectives.

6.5 DFS-use continuum

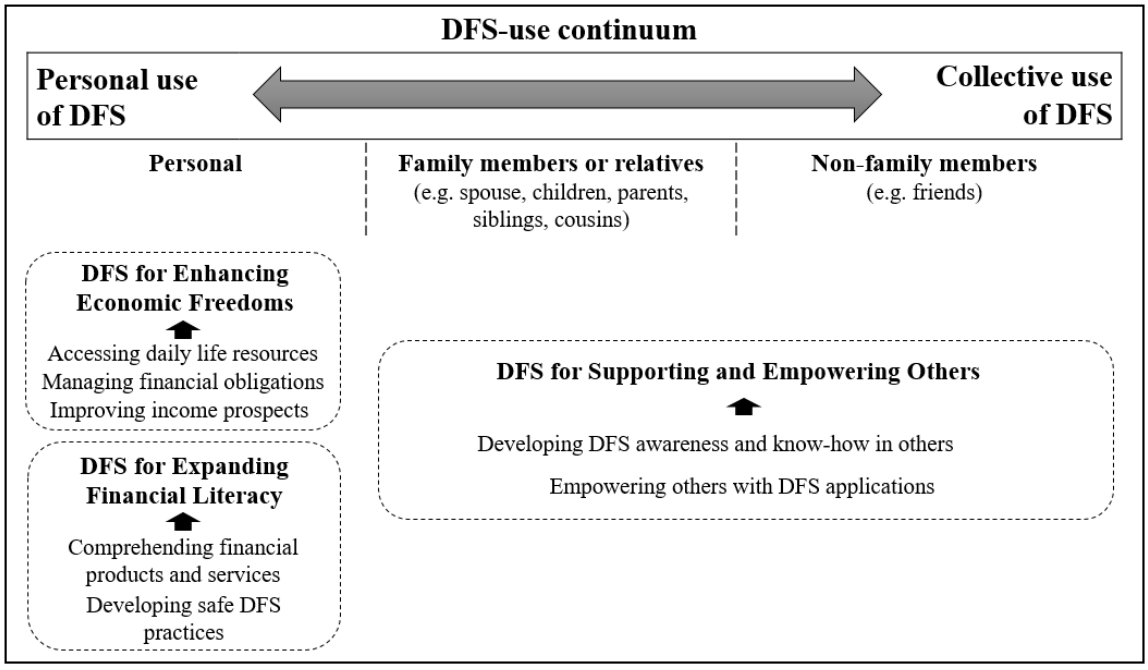
Understanding the dynamics of DFS use among rural communities, the integrated lens of the CA and SC emerged as the most suitable frameworks, as outlined in Chapter 2, to explain the DFS-use continuum. This integrated lens captures both individual and collective use of DFS in achieving life goals. The CA framework emphasises individuals' exercise of their capabilities (e.g. economic activities, formal financial services, and educational opportunities) through available resources (or means) to realise their diverse states of life or functionings. As the first two themes indicated that individuals in these rural communities use DFS to manage their everyday needs, financial obligations, income prospects, access education, and augment their DFS skills, the CA framework is particularly relevant for understanding the diverse ways individuals can utilise DFS (as means) to achieve these personal life goals.

The CA's recognition of affiliations as integral to the realisation of life goals directly applies to the third theme, which highlights the presence of social capital, including familial and non-familial ties, trust, and expectations, as well as prosocial behaviours to promote collective use of DFS in achieving life goals of other members of the community. This social perspective is crucial, as this theme reveals that social

interactions and networks significantly influence individuals' ability to access and effectively use DFS. For example, data patterns in the third theme showed that community members often share DFS knowledge and resources, facilitating wider and more effective use of DFS. Therefore, the combined CA and SC frameworks provide a comprehensive understanding of DFS use, capturing both the individual and collective dimensions of achieving life goals in rural communities.

Drawing from foundational principles of CA and social capital, the arrangement of the DFS-use continuum from left to right symbolises two complementary ends: the personal use of DFS and the collective use of DFS, as shown in Figure 6-1. The range between these two ends is partitioned into three distinct segments, representing DFS use for personal, family members (e.g. spouse, children, parents, siblings, and cousins), and non-family members (e.g. friends) in local neighbourhoods and workplaces.

Figure 6-1. Conceptual DFS-Use Continuum for Realising Diverse Life Goals



The leftmost segment of the spectrum incorporates the first two themes and their corresponding categories, reflecting individuals' DFS use for realising their self-oriented life goals (e.g. managing their everyday existence and augmenting their command of DFS) by exercising DFS-mediated economic and financial literacy opportunities. The subsequent progression of the continuum accentuates the DFS-mediated support these individuals provide to other members of their close social networks. This collective use

of DFS involves sharing DFS resources, such as knowledge, practical proficiencies, and mobile applications, to empower others.

The following sections elaborate on this continuum by analysing it through the integrated lens of CA and SC dimensions.

6.5.1 Personal use of DFS

The first theme within this side of the spectrum emphasises the role of DFS in improving the quality of an individual's personal routine life. As discussed in the previous sections, evidence clearly reveals the way individuals embrace DFS channels, especially mobile payment applications, for fulfilling their routine financial activities (e.g. purchases, utility payments, accessing cash and making financial investments) and improving their employment opportunities (e.g. earning a regular income through ICT-BC model).

The evidence within this theme portrays the multifaceted and evolving role of DFS in enhancing individuals' economic freedoms. The supporting data, as annexed in Appendix J, overtly reflect the enabling dimension of DFS to access essential resources, manage financial responsibilities, and enhance livelihood pathways for individuals living in these rural communities. By alleviating apprehensions associated with traditional financial methods, DFS empower individuals of these villages to take control of their financial lives and make choices and decisions that align with their preferences and values. This resonates with the core idea of the CA framework that emphasises the importance of capabilities essential to fulfil individuals' fundamental needs without facing challenges that might hinder the quality of their lives (Sen, 1999). The findings of this theme are closely aligned with the observation of Adaba et al. (2019), establishing the pivotal role of DFS in empowering rural individuals with the autonomy and agency to achieve their economic well-being.

The second theme underscores the importance of DFS, transcending their conventional role as mere transaction tools. The findings within this theme accentuate DFS's use for empowering individuals to access information about various financial products, services, and cybersecurity measures, which they further utilise to leverage the DFS ecosystem for achieving their life goals. Appendix K lists the supporting evidence showing

individuals' active engagement with DFS-mediated communication channels to access a wide range of information, enabling them to improve their DFS literacy.

This thematic strand aligns with Gigler's (2014) concept of Informational Capabilities (ICs), which resonates with the CA perspective and underscores the importance of people's access to information through ICTs. The notion of ICs can be conceptualised as an individual's ability to effectively use ICTs to locate, process, assess, and use information, allowing effective communication with others and sharing that information within social networks. Drawing upon this notion, this theme emphasises the significance of individuals' DFS-mediated informational abilities (or literacy levels) to access and utilise a wide range of financial services, further enabling them to achieve their life goals (Magesa et al., 2020).

6.5.2 Collective use of DFS

Building upon the third core theme and salient outcome of this study, this portion of the continuum presents the pro-social use of DFS knowledge, skills, and applications among the residents of these villages. As with the previous two themes, this thematic strand resonates with CA's focus on people's ability to access their fundamental capabilities by activating their resources within their social spheres (Bertin & Sirven, 2006; Ibrahim, 2006).

Mapping the third theme with SC theories (Burt, 2000; Coleman, 1990; Lin, 1999) suggests the importance of people's operationalisation of SC dimensions in the development of a collaborative DFS support environment. In the following sections, I will discuss this interplay between SC and the collective use of DFS.

Structural Capital Dimension

The analysis of evidence shows the presence and significance of the structural capital embedded within these rural communities, which allows individuals to develop initial awareness about DFS. The analysis reveals that the familial and non-familial social ties of these villagers serve as foundational channels for disseminating awareness about DFS channels, products, their benefits, and tips for secured online banking. Compelling evidence to support the outcomes of the analysis can be found in Appendix L.

In addition to sharing information about DFS products, benefits and safety tips, evidence within this theme points to the importance of close-knit relationships in providing hands-on training on DFS operations. The analysis reveals that DFS users act as mentors instructing DFS operational skills (e.g. linking a bank account, scanning a QR code, operating an ATM system) to others within their close networks. Moreover, these DFS users provide DFS channel support to passive counterparts (e.g. using personal DFS apps for making online payments on behalf of other members or lending QR codes to accept online payments on behalf of close-knit members). This peer-to-peer learning and DFS application support enhances villagers' self-efficacy in using DFS applications and increases their confidence in managing their financial affairs. Appendix M incorporates supporting evidence echoing the instrumental role of structural ties in developing DFS operational skills and fostering a financial backup support system.

The evidence suggests that by utilising structural ties, individuals have built a collaborative DFS learning and supportive environment within these rural communities. These observations align with the fundamental principles of social capital, wherein network ties contribute to creating an environment conducive and efficient for the residents of these rural communities to access DFS-mediated resources (Burt, 2000; Coleman, 1988; Lin, 1999). Moreover, consistent with Coleman's (1988) assertions, these interpersonal connections significantly reduce the time and effort individuals require to achieve their life goals.

Cognitive Capital Dimension

Scholars agree that innovation often happens when you mix different knowledge and experiences; having different opinions helps us learn more. However, for communication to work well and lead to meaningful exchanges, the people involved must share some common understanding (Boland Jr & Tenkasi, 1995). Past research proposes that effective sharing can happen by having a common language, expressions and even stories that everyone in the network can understand easily. In contrast, different languages create barriers and limit interaction (Nahapiet and Ghoshal, 1998). The findings of this study lend some credence to the influential role of shared language and vocabulary in cultivating financial concepts and safe online banking practices among the inhabitants under study. Evidence supporting the functional role of cognitive capital within the members of these rural communities can be found in Appendix N.

The analysis suggests that individuals with prior DFS experience (i.e. active users) translate intricate financial concepts into accessible language for their peers within their social circles. Although DFS information is disseminated in multiple languages, including the local language (Hindi), the comprehensibility of specific details remains limited due to varying degrees of formal, financial, and digital literacy among people in these villages. The individuals who actively engage with DFS act as intermediaries in simplifying DFS concepts for others within the community, effectively bridging gaps in knowledge and skills. These individuals' use of cognitive capital confirms its central role in developing DFS awareness within their informal and close-knit social networks.

Relational Capital Dimension

Much like the importance of structural and cognitive capital dimensions, this study's findings also emphasise the critical role of relational attributes of social structures, such as trust, reciprocity, and willingness to assist others. The analysis reveals the existence of robust relational capital that actively promotes the DFS-mediated supporting actions of individuals in these rural communities, ultimately enabling others to achieve their life goals. Appendix O lists some relevant and supporting data excerpts confirming the existence of relational capital within these villages.

The analysis suggests that the presence of relational dynamics creates an environment conducive to the seamless provision of DFS resources by active users to other active and passive counterparts residing in close social networks. It is apparent from the evidence that people in these villages trust each other, which allows them to nurture their ties and foster an atmosphere of DFS-mediated cooperation. The analysis also points out that active users help other active users and expect them to reciprocate when needed. This reciprocity reinforces the development of a DFS financial support system within active users. Furthermore, the willingness of the community members to engage in these supporting actions underlines the strength and effectiveness of their relational capital. It signifies their sense of the collective advantage of having DFS resources within their close social circles to realise their socio-economic pursuits.

The existing body of literature has consistently highlighted the strong connection between trust in interpersonal relationships and a heightened inclination to engage in cooperative social exchanges (Fukuyama, 1995; Putnam, 1993). Previous research has

underscored that trust encompasses a belief in the positive intentions and interests of exchange partners, their competence and reliability, and their perceived openness (Mishra, 1996). Furthermore, researchers have argued that obligations and expectations are pivotal in shaping these cooperative interactions. Coleman (1988) explains this relationship by stating that when A performs an action for B and trusts B to reciprocate in the future, it establishes an expectation on the part of A and an obligation for B. This reciprocity and expectation dynamic underscores the inherent interconnectedness and cooperative behaviour among the members of social networks, shaping the exchange and creation of knowledge.

Building upon these notions, the findings of this study shed further light on the intricate interplay and significance of relational elements in the context of individuals' utilisation of DFS resources. These findings underscore that cultivating relational capital can play a pivotal role in fostering a robust DFS-mediated support environment. This, in turn, facilitates swift responses to financial exigencies and strengthens the overall collaborative informal support system, as exemplified by members of these rural villages.

What makes these findings particularly noteworthy is the potential of SC to develop a collective DFS-mediated environment where individuals (active users) can support others in expanding their choices (to access financial services) by mobilising their structural, cognitive, and relational resources to achieve their socio-economic life goals. This convergence offers a promising pathway to recognise the importance of social connections for individuals to expand their resource bucket to lead a quality life, especially in rural communities where people's access to resources is largely challenging.

6.6 Chapter conclusion

This chapter carefully analyses and discusses the core themes and their underlying categories. The discussion presented in this chapter centres on how individuals utilise DFS for realising life goals – the overarching question of this study. The analysis reveals a conceptual continuum, illuminating DFS's intricate role in expanding opportunities for achieving individualistic aspirations and extending DFS resources for collective welfare. The findings presented in this chapter enrich the understanding of SC as vital catalysts for developing a DFS-mediated collaborative support environment within these rural

communities. The findings of this research hold important theoretical and practical implications, as well as signals for future inquiries that are reflected in the next concluding chapter of this thesis.

Chapter 7 Conclusions

7.1 Chapter outline

This chapter furnishes a concise overview of this doctoral study, culminating in its closure. After analysing the data and discussing the research findings in chapters 5 and 6, this concluding chapter highlights the main aspects of the research process and outcomes. This chapter focuses on the research background and key findings of this study, followed by the theoretical and practical implications. Finally, this chapter reflects on research limitations and provides potential paths in future research endeavours, specifically in the context of the DFS domain.

7.2 Overview of research background

The research on DFS is multi-layered and continually evolving, with prevailing dimensions including FI (Diniz et al., 2012; Ghosh, 2013; Joia & dos Santos, 2019), factors influencing DFS adoption (Aker et al., 2016; Dziwornu et al., 2018; Morawczynski, 2009; Ouma et al., 2017; Rahman et al., 2019) and effects on financial management and economic prospects (Adaba et al., 2019; Ghosh, 2013; Islam et al., 2018; Lei et al., 2023; Wang & He, 2020). While existing research enhances our understanding of diverse facets of DFS implementation and their associated outcomes in people's lives, there remains an opportunity to explore the evolving role of DFS in facilitating diverse life pursuits. This doctoral study explored specific ways in which DFS contributes to achieving life goals.

India has witnessed a substantial rise in DFS usage in recent years, especially among rural communities. Given the widespread availability and growing usage of DFS in Indian rural regions, this research focuses on individuals (as a unit of analysis) residing in seven villages across two districts in the UP state of India. To guide this research, a qualitative approach using ethnographic techniques was used to collect data from 36 participants during three-month fieldwork.

7.3 Key research findings

As a result of a thematic analysis, this study uncovers three core themes answering the overarching research question: How do individuals in rural regions of India leverage DFS to achieve life goals?

The first theme, 'DFS for enhancing economic freedoms', highlights the DFS function in supporting daily life in rural areas, improving resource access, aiding financial management, and enhancing income and psychological wellbeing, revealing the vital role of DFS for individuals in the rural communities of UP state. The second theme, 'DFS for expanding financial literacy', augments our understanding by revealing DFS's role in improving individuals' financial awareness and preparedness by providing access to informational content related to financial services and practices. The third theme, 'DFS for supporting and empowering others', unveils the unconventional use of DFS by individuals by highlighting a DFS-mediated support environment within these rural communities where active DFS users empower others through sharing knowledge, skills, and DFS applications, enabling others to realise their socio-economic goals.

Mapping these core themes against relevant literature on CA and SC reveals a conceptual DFS-use continuum. This continuum signifies that DFS not only enables an individual to lead socio-economic progress but also can be leveraged to create a support environment within close-knit social circles. This supportive environment is nurtured by active DFS users within these rural communities.

In the following section, I discuss the theoretical contributions and practical implications of this study that enrich our understanding of the dynamics of DFS use for enhancing individuals' choices to pursue their life goals.

7.4 Contributions

This study offers both theoretical and empirical contributions to the understanding of individuals' engagement with DFS within rural environments. While theoretical contributions provide new insights into the nature of DFS usage within rural communities, practical implications serve as guidelines for exploiting the potential of DFS to address real-world challenges and promote inclusive financial ecosystems.

7.4.1 Theoretical contributions

The theoretical contributions of this study are threefold and closely intertwined, providing a broader understanding of individuals' engagement with DFS to pursue their life goals within their rural environments.

Firstly, this study introduces the concept of DFS cultivators, representing a theoretical advancement in understanding DFS usage dynamics. DFS cultivators are active users who play a pivotal role in nurturing collective support systems within rural communities by sharing DFS knowledge, experiences, and tools. This concept challenges traditional views of DFS as purely individualistic financial tools and highlights the importance of social networks and collective support mechanisms in DFS adoption and utilisation. Following the complementary view of CA and SC frameworks (Bertin & Sirven, 2006; Ibrahim, 2006), the DFS cultivator concept illustrates how individuals, leveraging their personal DFS resources and exhibiting prosocial behaviours, can support others within their close social circles to achieve diverse life goals, such as developing financial management literacy, enhancing cyber-safety skills, providing career development opportunities and creating a social safety net for responding to financial emergencies.

Secondly, this study sheds light on the significance of relational elements of SC as foundational pillars supporting the collective DFS environment within rural communities. This theoretical insight enriches our understanding of the significant role of mutual trust, willingness, reciprocity, and cooperation in promoting effective DFS usage, benefiting the members of these rural communities in achieving their life goals and leading meaningful lives.

Lastly, this study underscores the role of cognitive capital, particularly shared language and vocabulary, in nurturing a DFS-mediated support environment within rural communities. These shared linguistics allow individuals in these villages to communicate and share information easily with each other. This common linguistics also plays a critical role in supporting active DFS users to effectively disseminate DFS-related knowledge, such as online features, schemes, and safe online banking practices, within their close-knit social networks.

As Walsham (1995) argued, generalisations are explanations of specific research phenomena drawn from empirical interpretive research conducted within a particular setting or context. These explanations are crucial because they provide a valuable ground for future studies in different contexts. Walsham (1995, 2006) proposed four complementary types of generalisations for interpretive research, including ethnographies: the development of concept, drawing of specific implications,

contributing to rich insight and generation of theory. In alignment with the specific focus of my study, which is not centred on theory generation but on extracting meaningful explanations around DFS use among rural communities under examination, I present the generalisations of this study's findings using the first three types, with the help of Table 7-1.

Table 7-1. Theoretical Generalisations (adapted from Walsham (1995))

Development of concepts	**Concept: DFS cultivators** These are individuals who share DFS applications and educate others about financial services, terminologies, skills, and the benefits of DFS. Typically, they possess higher levels of formal education (e.g. a college degree) and effective communication skills, which make the DFS resource-sharing process smoother. Importantly, these cultivators engage in continuous sharing of DFS resources, providing ongoing support rather than one-time assistance. These cultivators play a crucial role in creating and nurturing a supportive DFS environment within these rural communities.
Drawing of specific implications	The DFS support environment thrives within close-knit informal social networks of rural communities, composed of familial and non-familial relationships characterised by mutual trust, shared expectations, and a willingness to assist one another. This environment encourages DFS cultivators to support their peers effectively. Moreover, the use of a shared language and vocabulary that all network members understand is essential in fostering a supportive DFS environment. This common linguistic framework ensures clear communication and reinforces the effort of DFS cultivators to enhance DFS utilisation and promote FI within their communities.
Contribution to rich insight	DFS can be utilised beyond their traditional role as tools for financial transactions. This study highlights the broader impact of DFS on enhancing economic opportunities for individuals. Importantly, DFS also plays a crucial role in expanding individuals' ICs. By providing access to vital information and enabling its effective processing and utilisation, DFS helps individuals enhance their financial and digital skills. Furthermore, these enhanced skills allow individuals to educate and support others within their close social networks, aiding in the achievement of both financial and non-financial life goals.

7.4.2 Practical implications

While theoretical insights play a pivotal role as guiding principles for sense-making and understanding the dynamics of the world around us, these insights also possess practical significance in the sense that "they allow knowledge to be accumulated systematically,

and this accumulated knowledge enlightens professional practice" to address real-world problems (Gregor, 2006, p. 613). Considering the theoretical contributions outlined in the previous section, I discuss the practical implications, which can act as guidelines for different stakeholders in harnessing the potential of DFS, specifically within the context of rural communities. The potential practical implications of this research hold significance for individuals, particularly active DFS users, policymakers, and banking institutions.

For individual DFS users, particularly those residing within rural enclaves, the findings of this study prompt the significance of DFS beyond just personal benefits. The outcomes of this study have the potential to motivate these individuals to perceive themselves as active agents capable of contributing to the wellbeing of others within their social circles. This actualisation can further strengthen the sense of shared purpose among active DFS users, as they can utilise their financial knowledge, skills, and applications, as well as shared language and vocabulary, to contribute to the betterment of others, especially passive users with limited or no DFS awareness or skills within their immediate social spheres. Although the findings of this study emphasise the role of DFS cultivators in supporting close-knit relations (i.e. family, relatives, and friends), the scope of their supportive role can be extended to others' social circles. This collective approach can help in promoting an inclusive DFS-mediated support environment beyond close circles. However, to do so effectively, it is crucial for these cultivators to develop trust and cooperative ties with the members belonging to outside close social circles.

Although the ICT-BC model backs these rural regions to provide financial services to rural residents, these onsite DFS channels are mostly located outside the villages, as evident in all six villages (except Chhomas). Since these BC outlets are outside the village premises, people (e.g. those without active DFS users in their social circles) must travel outside the village to access financial services. The active DFS users residing within these villages represent a potential practical solution by mitigating the inconvenience of residents travelling to distant BC outlets and fostering an inclusive DFS environment.

Policymakers, informed by the findings of this study, can recognise the role of 'DFS cultivators' within rural communities. They can bring policies that integrate the role of these local promoters into DFS implementation initiatives. These policies can offer

guidelines for developing the reward model for DFS cultivators actively supporting their communities. Additionally, these authorities can prioritise financial literacy and training programs that target the specific needs of these local enablers to strengthen their role in developing and sustaining an inclusive DFS ecosystem.

Banking institutions, especially those serving rural regions, can benefit from gaining insights into the SC dynamics within their operational areas. These institutions can collaborate with DFS designers and developers to introduce DFS channels and products that encourage community engagement. Furthermore, they can explore partnerships with community leaders, such as village chiefs, to identify and train DFS cultivators for raising awareness and sharing resources within their communities. Through these partnerships, banking institutions can play a vital role in strengthening people's confidence and trust in DFS, particularly in the face of prevalent cyber frauds targeting residents of rural communities.

Although the absence of instances of behaviours such as information privacy breaches or unfair monetary advantage taken by active users from their passive counterparts is undoubtedly encouraging, this should not overshadow the place of ethics in such informal support actions. As custodians of the DFS landscape, banking institutions must ensure people's sense of ethical conduct while engaging in DFS-mediated support within their social networks. Initiatives that proactively educate banking consumers about the ethical implications of their collaborative actions and encourage responsible behaviour can contribute to the sustainability of this support system. These initiatives could embrace guidelines for assistance and awareness of potential consequences.

7.5 Limitations

Every research endeavour encounters limitations, and this study is no exception. Understanding these constraints is crucial when interpreting the presented findings. The adoption of a qualitative research design, harmonious with my philosophical stance, naturally involves subjectivity to some extent for two main reasons: 1) it focuses on one specific geographical region and 2) the researcher’s active engagement in data collection, analysis and interpretations.

Given the fact that this study focuses on the role of DFS in a specific region of rural India, the findings may not be directly transferable to other regions or countries of the world due to cultural, infrastructural, and regulatory differences. However, given DFS's ubiquitous nature and the widespread applicability of social capital theories, the findings of this study have broader relevance even beyond the context of this study. This, in turn, paves the way for additional exploration of DFS in the lives of individuals from varied backgrounds and situations living in various parts (whether global north or global south) of the world.

Despite well-established data collection and sampling techniques being used, certain limitations may warrant readers' attention. Employing the snowball approach for participant selection – pragmatic for diverse and widespread populations – could introduce subjectivity, as depending on existing participants for referrals might inadvertently introduce bias, potentially influencing research findings. This study included fewer passive, which could introduce potential bias in the findings. Moreover, the majority of participants are male and have college degrees, potentially skewing perspectives and underrepresenting female viewpoints. Future research can address these limitations by employing a more balanced representation of active and passive users and by considering other demographic factors to reduce bias in the findings.

7.6 Potential avenues for future research

Informed by the insights from this study, forthcoming research endeavours can chart a course of enquiry into unexplored facets within the DFS research domain. For instance, researchers can explore the dynamics of DFS utilisation and their implications for societal progress in different demographic environments, including rural and urban communities with different cultural and contextual conditions. These future explorations can shed light on the evolving role of DFS that may vary across these demographic regions and help uncover unique DFS challenges and opportunities in diverse settings. Future researchers may also consider the following research questions to guide their exploration. What factors hinder and facilitate individuals' shift from a self-focused DFS use to embracing collective benefits? How can DFS cultivators' participation contribute to FI initiatives? How can DFS platforms be leveraged to boost individuals' engagement and participation in collective actions? By exploring these

research questions, future research can contribute to expanding our understanding of DFS dynamics in the lives of people belonging to diverse contexts across the globe.

7.7 Concluding remarks

My personal experiences during the time of demonetisation in India, combined with the lack of academic emphasis on the role of DFS, especially in the context of achieving life goals that provide individuals with a sense of purpose and guide them toward a more meaningful and desired quality of life, served as the driving force behind this doctoral journey.

Since this research journey commenced in late 2019, it encountered unforeseen challenges posed by COVID-19, such as disruption in the fieldwork planning due to travel restrictions. However, these challenges could not alter this study's aim; I conducted my fieldwork in the villages following sensible and safety-conscious ethical protocols. Throughout the fieldwork, I exercised utmost caution, adhering to stringent safety guidelines and ethical considerations to safeguard participants and myself. This adaptability in the face of adversity enabled me to reside and be immersed within rural communities in my home state, UP and gather the lived experiences of the residents in these enclaves.

Consequently, I conducted several semi-structured interviews loaded with voluminous qualitative data. As I embarked on the data analysis process, I faced another hurdle: unpacking and understanding this vast data set to extract insightful findings. However, steered by available methodological texts and my supervisors' advice, I progressed through the analytical stages to reveal the central findings of this research. Dedicating nearly eighteen months, in addition to writing the initial thesis chapters, to analysing and sifting through the data corpus enabled me to identify the three core themes presented in Chapter 5.

These themes exposed the dynamics of individuals' active engagement with DFS in expanding their freedoms while sharing a strong sense of interconnectedness with others in their immediate social circles. This intimacy acts as a catalyst in the swift flow of DFS awareness and support. However, the collective support practices (financial and non-financial) have been ingrained in the fabric of these rural enclaves even before the

arrival of digital technologies. DFS have made these practices more accessible and convenient, strengthening their support system.

As I conclude this thesis, I do not want to claim that I have discovered an absolute reality. These outcomes stand as a springboard for further exploration within the domain of DFS research and their transformative role in the lives of people and communities across the globe. Thus, this research journey is an ongoing exploration, and the quest for exploring the evolving role of DFS continues.

References

Adaba, G. B., Ayoung, D. A., & Abbott, P. (2019). Exploring the contribution of mobile money to well-being from a capability perspective. *The Electronic Journal of Information Systems in Developing Countries, 85*(4), e12079. https://doi.org/10.1002/isd2.12079

Adida, C. L., Ferree, K. E., Posner, D. N., & Robinson, A. L. (2016). Who's asking? Interviewer coethnicity effects in African survey data. *Comparative Political Studies, 49*(12), 1630-1660. https://doi.org/10.1177/0010414016633487

Adler, P. A., & Adler, P. (1987). *Membership roles in field research* (Vol. 6): Sage Publications, Inc. https://doi.org/10.4135/9781412984973

Agarwala, R. (2017). *Demonetisation: A means to an End?* New Delhi, INDIA: SAGE Publications. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=4890024

Agwu, M. (2021). Can technology bridge the gap between rural development and financial inclusions? *Technology Analysis & Strategic Management, 33*(2), 123-133. https://doi.org/10.1080/09537325.2020.1795111

Ahad, M. (2014). *Investigating a framework for providing mobile banking opportunities to rural SMEs in Bangladesh*. (Doctoral dissertation). https://doi.org/10.13140/RG.2.2.12160.40967

Aker, J. C., Boumnijel, R., McClelland, A., & Tierney, N. (2016). Payment mechanisms and antipoverty programs: Evidence from a mobile money cash transfer experiment in Niger. *Economic Development and Cultural Change, 65*(1), 1-37. https://doi.org/10.1086/687578

Akhter, N., & Khalily, M. B. (2020). An Analysis of Mobile Financial Services and Financial Inclusion in Bangladesh. *Indian Journal of Human Development, 14*(2), 213-233. https://doi.org/10.1177/0973703020946706

Akter, R., Priyodarshini, A., & Barua, S. (2021). Empowering Small Businesses with Financial Technology: The Road Less Travelled. https://doi.org/10.54728/2112211640063460

Alkire, S. (2008). Using the capability approach: prospective and evaluative analyses. *The capability approach: Concepts, measures and applications*, 26-50. https://doi.org/10.1017/CBO9780511492587.002

Alkire, S. (2010). Instrumental freedoms and human capabilities. In Esquith, Stephen L.; Gifford (Eds.), *Capabilities, Power, and Institutions. Towards a More Critical Development Ethics, The Pennsylvania State University Press, Pennsylvania Park*, 18-32.

Alliance for Financial Inclusion. (2016). *Digital Financial Services Basic Terminology*. Retrieved from https://www.afi-global.org/sites/default/files/publications/2016-08/Guideline%20Note-19%20DFS-Terminology.pdf

Amegbe, H., Hanu, C., & Nuwasiima, A. (2017). Small-scale individual entrepreneurs (SIEs) and the usage of mobile money (M-money) and mobile commerce (M-commerce) in facilitating business growth in Ghana. *Management Science Letters, 7*(8), 373-384. https://doi.org/10.5267/J.MSL.2017.5.004

Anderson, M. (2019). Mobile Technology and Home Broadband. Pew Research Center: Internet, Science & Tech (blog), June 13, 2019. Retrived from https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/

Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of fintech: new post-crisis paradigm. *Georgetown Journal of International Law, 47*(4), 1271-1320.

Arora, P., & Rangaswamy, N. (2013). Digital leisure for development: Reframing new media practice in the Global South. *Media, Culture & Society, 35*(7), 898-905. https://doi.org/10.1177/0163443713495508

Asmundson, I. (2017). Financial services: Getting the goods. Finance and Development. *IMF.* Retrieved from https://www.imf.org/external/pubs/ft/fandd/basics/finserv.htm

Avgerou, C. (2010). Discourses on ICT and development. *Information Technologies & International Development, 6*(3), pp. 1-18.

Aziz, A., & Naima, U. (2021). Rethinking digital financial inclusion: Evidence from Bangladesh. *Technology in Society, 64*, 101509. https://doi.org/10.1016/j.techsoc.2020.101509

Baker, W. E. (1990). Market networks and corporate behavior. *American journal of sociology, 96*(3), 589-625. https://doi.org/10.1086/229573

Banks, M. (2008). *Using Visual Data in Qualitative Research*: SAGE.

Bansal, N., & Jain, M. (2018). Progress in digital banking after demonetization: some evidence. *IUP Journal of Bank Management, 17*(2), 50-59.

Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research, 15*(2), 219-234. https://doi.org/10.1177/1468794112468475

Bertin, A., & Sirven, N. (2006). Social capital and the capability approach: A social economic theory. *Ethics and the Market: Insights from Social Economics. London: Routledge*.

Bhattacharya, R. (2020). Financial Inclusion in India: An Assessment. In I. R. Management Association (Ed.), *Wealth Creation and Poverty Reduction: Breakthroughs in Research and Practice* (pp. 559-568). Hershey, PA, USA: IGI Global. Retrieved from https://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-7998-1207-4.ch033. https://doi.org/10.4018/978-1-7998-1207-4.ch033

Bijapurkar, R., Rai, P., Shukla, R., & Sachdeva, V. (2020). *Digital Payments Adoption in India - 2020*. Retrieved from https://www.npci.org.in/PDF/npci/knowledge-center/Digital-Payment-Adoption-in-India-2020.pdf

Bishnoi, T., & Devi, S. (2017). *Banking Reforms in India: Consolidation, Restructuring and Performance*: Springer.

Boissevain, J. (1979). Network analysis: a reappraisal. *Current Anthropology, 20*(2), 392-394. https://www.jstor.org/stable/2741937

Boland Jr, R. J., & Tenkasi, R. V. (1995). Perspective making and perspective taking in communities of knowing. *Organization Science, 6*(4), 350-372. https://doi.org/10.1287/orsc.6.4.350

Bose, F. (2019). An economic and public policy view of demonetization in India. *Society*, *56*, 38-46.

Bourdieu, P. (1977). *Outline of a Theory of Practice* (Vol. 16): Cambridge University Press.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education*. Westport, CT: Greenwood Press Westport, CT.

Bradley, L., & Stewart, K. (2003). A Delphi study of Internet banking. *Marketing Intelligence & Planning, 21*(5), 272-281. https://doi.org/10.1108/02634500310490229

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brdar, I., Rijavec, M., & Miljković, D. (2009). Life goals and wellbeing: Are extrinsic aspirations always detrimental to wellbeing? *Psihologijske Teme, 18*(2), 317-334.

BRICS. (2021). *BRICS Digital Financial Inclusion Report India 2021*. Retrieved from https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/BRICSDIGITAL7330275ABF0C4198B581897DF2C131CA.PDF

Brehm, J., and Rahn, W. (1997). Individual-Level Evidence for the Causes and Consequences of Social Capital. *American journal of political science*, pp. 999-1023.

Brune, L., Giné, X., Goldberg, J., & Yang, D. (2016). Facilitating savings for agriculture: Field experimental evidence from Malawi. *Economic Development and Cultural Change, 64*(2), 187-220. https://www.jstor.org/stable/26544743

Bureau, P. I. (2022). *Increase in Digital Payments*. Retrieved from https://pib.gov.in/PressReleasePage.aspx?PRID=1808680

Burt, R. S. (1992). *Structural Holes : The Social Structure of Competition*. Cambridge, UNITED STATES: Harvard University Press. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=3300361

Burt, R. S. (2000). The network structure of social capital. *Research in Organizational Behavior, 22*, 345-423. https://doi.org/10.1016/S0191-3085(00)22009-1

Ceccato, V. A. (2016). *Rural crime and community safety* (First ed.): Routledge.

Chang, W.-L., Chen, L.-M., & Hashimoto, T. (2022). Cashless Japan: Unlocking influential risk on mobile payment service. *Information Systems Frontiers, 24*(5), 1515-1528. https://doi.org/10.1007/s10796-021-10160-6

Chatterjee, A. (2020). Financial inclusion, information and communication technology diffusion, and economic growth: a panel data analysis. *Information Technology for Development, 26*(3), 607-635. https://doi.org/10.1080/02681102.2020.1734770

Chida, E., Mambo, M., & Shizuya, H. (2001). Digital Money–A Survey. *Interdisciplinary Information Sciences, 7*(2), 135-165. https://doi.org/10.4036/iis.2001.135

Choo, K.-K. R. (2011). The cyber threat landscape: Challenges and future research directions. *Computers & security, 30*(8), 719-731. https://doi.org/10.1016/j.cose.2011.08.004

Chou, D. C., & Chou, A. Y. (2000). A guide to the Internet revolution in banking. *Information Systems Management, 17*(2), 51-57. https://doi.org/10.1201/1078/43191.17.2.20000301/31227.6

Claridge, T. (2020). Social capital at different levels and dimensions: a typology of social capital. *Social Capital Research*, 1-8. https://doi.org/10.5281/zenodo.8016096

Cleary, M., Horsfall, J., & Hayter, M. (2014). Data collection and sampling in qualitative research: does size matter? *Journal of Advanced Nursing*, 70(3), 473-475. https://doi.org/10.1111/jan.12163

Clerici, C., Gamba, L., Nota, A., & Tecco, S. (2022). Digital records for diagnosis and treatment plan in a TMD patient. *Journal of Dentistry, 121*, 104004. https://doi.org/10.1016/j.jdent.2022.104004

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95-S120. http://www.jstor.org/stable/2780243

Coleman, J. S. (1990). *Foundations of social theory*: Harvard University Press.

Clough, J. (2015). *Principles of cybercrime*: Cambridge University Press.

Comer, J. C., & Wikle, T. A. (2008). Worldwide diffusion of the cellular telephone, 1995–2005. *The Professional Geographer, 60*(2), 252-269. http://www.jstor.org/10.1080/00330120701836303

Crawford, C. M., Di Benedetto, C. A., Crawford, C. M. Bourdieu, & Di Benedetto, C. A. (2006). *New products management*: McGraw-Hill/Irwin New York, NY.

Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.

Cronin, M. J. (1998). *Banking and Finance on the Internet*: John Wiley & Sons.

Cross, C. (2020). Preventing fraud victimisation in rural areas. In A. Harkness (Eds.), Rural Crime Prevention: Theory, Tactics and Techniques. Routledge. https://doi.org/10.4324/9780429460135-18

Crotty, M. J. (1998). The foundations of social research: Meaning and perspective in the research process. *The Foundations of Social Research*, 1-256.

Crozier, G., Reay, D., & James, D. (2011). Making it work for their children: White middle-class parents and working-class schools. *International Studies in Sociology of Education, 21*(3), 199-216. https://doi.org/10.1080/09620214.2011.616343

Dancey, K. (2013). Why payment systems matter to financial inclusion: Examining the role of social cash transfers. *Journal of Payments Strategy & Systems, 7*(2), 119-124.

David-West, O., Iheanachor, N., & Kelikume, I. (2018). A resource-based view of digital financial services (DFS): An exploratory study of Nigerian providers. *Journal of Business Research, 88*, 513-526. https://doi.org/10.1016/j.jbusres.2018.01.034

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. https://doi.org/10.2307/249008

De Koker, L., & Jentzsch, N. (2013). Financial inclusion and financial integrity: Aligned incentives? *World Development, 44*, 267-280. https://doi.org/10.1016/j.worlddev.2012.11.002

Della Peruta, M. (2018). Adoption of mobile money and financial inclusion: a macroeconomic approach through cluster analysis. *Economics of Innovation and New Technology, 27*(2), 154-173. https://doi.org/10.1080/10438599.2017.1322234

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19* (1464818975). (Washington, DC: World Bank, Issue. https://www.worldbank.org/en/publication/globalfindex/Report

Deneulin, S. (2002). Perfectionism, paternalism and liberalism in Sen and Nussbaum's capability approach. *Review of Political Economy, 14*(4), 497-518. https://doi.org/10.1080/0953825022000009924

Deterding, N. M., & Waters, M. C. (2021). Flexible coding of in-depth interviews: A twenty-first-century approach. *Sociological Methods & Rresearch, 50*(2), 708-739. https://doi.org/10.1177/0049124118799377

Díaz Andrade, A. (2007). *Interaction between existing social networks and information and communication technology (ICT) tools: evidence from rural Andes*. ResearchSpace@ Auckland. http://hdl.handle.net/2292/2357

Díaz Andrade, A. (2023). Dancing between theory and data: Abductive reasoning. In R. M. Davison (Ed.), *Handbook of Qualitative Research Methods for Information Systems* (pp. 274-287): Edward Elgar Publishing Limited.

Díaz Andrade, A., & Urquhart, C. (2010). The affordances of actor network theory in ICT for development research. *Information Technology & People, 23*(4), 352-374. https://doi.org/10.1108/09593841011087806

Díaz Andrade, A., & Urquhart, C. (2012). Unveiling the modernity bias: a critical examination of the politics of ICT4D. *Information Technology for Development, 18*(4), 281-292. https://doi.org/10.1080/02681102.2011.643204

Díaz Andrade, A., Urquhart, C., & Arthanari, T. S. (2015). Seeing for understanding: Unlocking the potential of visual research in information systems. *Journal of the Association for Information systems, 16*(8), 3. https://doi.org/10.17705/1jais.00406

Diniz, E., Birochi, R., & Pozzebon, M. (2012). Triggers and barriers to financial inclusion: The use of ICT-based branchless banking in an Amazon county. *Electronic Commerce Research and Applications, 11*(5), 484-494. https://doi.org/10.1016/j.elerap.2011.07.006

Dodel, M., & Mesch, G. (2019). An integrated model for assessing cyber-safety behaviors: How cognitive, socioeconomic and digital determinants affect diverse safety practices. *Computers & Security, 86*, 75-91. https://doi.org/10.1016/j.cose.2019.05.023

Dolan, C., & Rajak, D. (2018). Remaking Africa's informal economies: Youth, entrepreneurship and the promise of inclusion at the bottom of the pyramid. In *Globalization, economic inclusion and african workers* (pp. 52-67): Routledge. https://doi.org/10.1080/00220388.2015.1126249

Donner, J., & Tellez, C. A. (2008). Mobile banking and economic development: Linking adoption, impact, and use. *Asian Journal of Communication, 18*(4), 318-332.

Dorfleitner, G., Hornuf, L., Schmitt, M., Weber, M., Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). Definition of FinTech and description of the FinTech industry. *FinTech in Germany*, 5-10. https://doi.org/10.1007/978-3-319-54666-7_2

Dorfleitner, G., & Nguyen, Q. A. (2022). Mobile money for women's economic empowerment: the mediating role of financial management practices. *Review of Managerial Science*, 1-30. https://doi.org/10.1007/s11846-022-00564-2

Drevin, L., Kruger, H., Bell, A.-M., & Steyn, T. (2017). A linguistic approach to information security awareness education in a healthcare environment. *Springer Cham*. Symposium conducted at the meeting of the Information Security Education for a Global Digital Society - 10th IFIP WG 11.8 World Conference, WISE 10, Proceedings., Rome, Italy.

Duane, A., O'Reilly, P., & Andreev, P. (2014). Realising M-Payments: modelling consumers' willingness to M-pay using Smart Phones. *Behaviour & Information Technology, 33*(4), 318-334. https://doi.org/10.1080/0144929X.2012.745608

Duncombe, R. A. (2014). Understanding the impact of mobile phones on livelihoods in developing countries. *Development Policy Review, 32*(5), 567-588. https://doi.org/10.1111/dpr.12073

Dupas, P., & Robinson, J. (2013). Savings constraints and microenterprise development: Evidence from a field experiment in Kenya. *American Economic Journal: Applied Economics, 5*(1), 163-192. https://doi.org/10.1257/app.5.1.163

Duranti, A. (2006). Transcripts, like shadows on a wall. *Mind, Culture, and Activity, 13*(4), 301-310. https://doi.org/10.1207/s15327884mca1304_3

Dwyer, S. C., & Buckle, J. L. (2009). The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods, 8*(1), 54-63. https://doi.org/10.1177/160940690900800105

Dwivedi, Y. K., Sahu, G. P., Rana, N. P., Singh, M., & Chandwani, R. K. (2016). Common Services Centres (CSCs) as an approach to bridge the digital divide: Reflecting on challenges and obstacles. *Transforming Government: People, Process and Policy*, *10*(4), 511-525.

Dyer, A. W. (1989). Making semiotic sense of money as a medium of exchange. *Journal of Economic Issues, 23*(2), 503-510.

Dziwornu, R. K., Anagba, K. K., & Aniapam, A. D. (2018). Emergence of mobile financial services in Ghana: Concerns for use among informal sector women entrepreneurs. *Journal of Emerging Market Finance, 17*(3_suppl), S415-S432. https://doi.org/10.1177/0972652718798191

Edmunds, D. C., Fishman, B. D., & Hedstrom, M. W. (1977). *A feasibility study: should a major New York commercial bank offer telephone bill payment*. Massachusetts Institute of Technology. http://hdl.handle.net/1721.1/87795

Edwards, B., & Foley, M. W. (1997). Social capital and the political economy of our discontent. *American Behavioral Scientist, 40*(5), 669-678. https://doi.org/10.1177/000276429704000501

Eisenberg, N., and Mussen, P. H. (1989). The Roots of Prosocial Behavior in Children. *Cambridge University Press*.

Ernst & Young Global Limited. (2017). *Fintech Adoption Index 2017.* Retrieved from https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-fintech-adoption-index-2017.pdf

Escobar, A. (2012). *Encountering development: The making and unmaking of the Third World* (2nd ed.): Princeton, NJ, USA: Princeton University Press.

Esteva, G. (2010). Development. In W. Sachs (Ed.), *The Development Dictionary*: Zed Books. Retrieved from https://networkservices.aut.ac.nz/ezproxy.cgi?url=https://search.credoreference.com/content/entry/zeddev/development/0?institutionId=5349

Espinosa-Vega, M. A., Shirono, M. K., Villanova, M. H. C., Chhabra, M., Das, M. B., & Fan, M. Y. (2020). *Measuring financial access: 10 years of the IMF financial access survey* (20/08): International Monetary Fund. Retrieved from https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2020/05/12/Measuring-Financial-Access-10-Years-of-the-IMF-Financial-Access-Survey-49298

Field, J. (2016). *Social Capital*. London, United Kingdom: Taylor & Francis Group. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=4740836

Financial Inclusion. (2018). Financial inclusion is a key enabler to reducing poverty and boosting prosperity. Retrieved from https://www.worldbank.org/en/topic/financialinclusion/overview

Finau, G., Rika, N., Samuwai, J., & McGoon, J. (2016). Perceptions of digital financial services in rural Fiji. *Information Technologies & International Development, 12*(4), pp. 11-21.

Fitzsimons, G. M., & Shah, J. Y. (2008). How goal instrumentality shapes relationship evaluations. *Journal of Personality and Social Psychology, 95*(2), https://doi.org/319. 10.1037/0022-3514.95.2.319

Florêncio, D., & Herley, C. (2013). Where do all the attacks go?*Springer.* Symposium conducted at the meeting of the Economics of information security and privacy III.

Frost, J. (2020). The Economic Forces Driving Fintech Adoption Across Countries. In M King and R Nesbitt (eds), *The Technological Revolution in Financial Services,* Toronto: University of Toronto Press.

Fukuyama, F. (1995). *Trust : the social virtues and the creation of prosperity*. New York: Free Press New York.

Garcia, L., & Quek, F. (1997). Qualitative research in information systems: time to be subjective? In *Information systems and qualitative research* (pp. 444-465): Springer.

Garnham, N. (1997). Amartya Sen's "capabilities" approach to the evaluation of welfare: Its application to communications. *Javnost-The Public, 4*(4), 25-34. https://doi.org/10.1080/13183222.1997.11008658

Ghahtarani, A., Sheikhmohammady, M., & Rostami, M. (2020). The impact of social capital and social interaction on customers' purchase intention, considering knowledge sharing in social commerce context. *Journal of Innovation & Knowledge, 5*(3), 191-199. https://doi.org/10.1016/j.jik.2019.08.004

Ghosh, I. (2013). The agent in a transformational m-banking ecosystem: interface or intermediary? Symposium conducted at the meeting of the Proceedings of the Sixth International Conference on Information and Communications Technologies and Development: Notes-Volume 2

Giannakoudi, S. (1999). Internet banking: the digital voyage of banking and money in cyberspace. *Information and Communications Technology Law, 8*(3), 205-243. https://doi.org/10.1080/13600834.1999.9965811

Gigler, B.-S. (2014). Informational Capabilities: The missing link for understanding the impact of ICT on development. In B.-S. Gigler & S. Bailur (Eds.), *Closing the feedback loop: Can technology bridge the accountability gap?* (pp. 17-42). Washington, DC: The World Bank

Given, L. M. (2008). *The Sage encyclopedia of qualitative research methods*: Sage publications.

Gochhwal, R. (2017). Unified payment interface—an advancement in payment systems. *American Journal of Industrial and Business Management, 7*(10), 1174-1191. https://doi.org/10.4236/ajibm.2017.710084

Goel, K., Bandara, W., & Gable, G. (2022). Banking the Unbanked: Conceptualizing Success of the Business Correspondent Model. *Information Systems Frontiers*, 1-32. https://doi.org/10.1007/s10796-022-10345-7

Goodridge, D., & Marciniuk, D. (2016). Rural and remote care: Overcoming the challenges of distance. *Chronic Respiratory Disease, 13*(2), 192-203. https://doi.org/10.1177/1479972316633414

Gough, I., & McGregor, J. A. (2007). *Wellbeing in developing countries: from theory to research*: Cambridge University Press.

GOUP. (2022). *Demography - Government of Uttar Pradesh, India*. Retrieved from https://invest.up.gov.in/demography/

Graham, M., & Mann, L. (2013). Imagining a Silicon Savannah? Technological and conceptual connectivity in Kenya's BPO and software development sectors. *Electronic Journal of Communication, 23* (2-3).

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360-1380. https://www.jstor.org/stable/2776392

Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, 611-642. https://doi.org/10.2307/25148742

Grote, U., & Neubacher, F. (2016). Rural crime in developing countries: Theoretical framework, empirical findings, research needs. *ZEF Working Paper Series, No. 148, University of Bonn, Center for Development Research.* https://doi.org/10.2139/ssrn.2756542

Grunfeld, H. (2014). ICT for sustainable development: an example from Cambodia. *The Journal of Community Informatics, 10*(2), 1-12. https://doi.org/10.15353/joci.v10i2.2651

GSMA. (2012). *Mobile Money in the Philippines – The Market, the Models and Regulation*. Retrieved from https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/Philippines-Case-Study-v-X21-21.pdf

GSMA. (2021). *The Mobile Economy 2021*. Retrieved from https://www.gsma.com/mobileeconomy/wp-content/uploads/2021/07/GSMA_MobileEconomy2021_3.pdf

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research, 2*(163-194), 105.

Gupta, R. K. (2022). Adoption of mobile wallet services: An empirical analysis. *International Journal of Intellectual Property Management, 12*(3), 341-353. https://doi.org/10.1504/IJIPM.2021.10035526

Hamel, J.-Y. (2010). ICT4D and the human development and capabilities approach: The potentials of information and communication technology. MPRA Paper 25561, University Library of Munich, Germany.

Hamelink, C. J. (1997). *New information and communication technologies, social development and cultural change* (Vol. 86): United Nations Research Institute for Social Development Geneva.

Hasnain, S., Komu, A., & Blackburn, C. (2016). *Mobile money in the Philippines: Market conditions drive innovation with Smart Money and GCash*. Retrieved 08 January 2023, from https://www.gsma.com/mobilefordevelopment/programme/mobile-money/mobile-money-philippines-market-conditions-drive-innovation-smart-money-gcash-philippines-becoming-mobile-money-innovation-hub/

Hassan, A., Abd El Aziz, R., & Hamza, M. (2021). Internet Banking Accessibility: The Social and Financial Exclusion of People with Visual Disability.*IEEE*. Symposium conducted at the meeting of the 31st International Conference on Computer Theory and Applications, ICCTA 2021 - Proceedings.

Hau, Y. S., Kim, B., Lee, H., & Kim, Y.-G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management, 33*(2), 356-366. https://doi.org/10.1016/j.ijinfomgt.2012.10.009

Heeks, R. (2010). Do information and communication technologies (ICTs) contribute to development? *Journal of International Development, 22*(5), 625-640. https://doi.org/10.1002/jid.1716

Heeks, R. (2014). Future priorities for development informatics research from the post-2015 development agenda. *Development Informatics Working Paper*(57). https://doi.org/10.13140/RG.2.2.19302.98888

Heeks, R. (2017). *Information and communication technology for development (ICT4D)*: Routledge.

Hennecke, M., & Brandstätter, V. (2017). Means, ends, and happiness: The role of goals for subjective wellbeing. In *The happy mind: Cognitive contributions to wellbeing* (pp. 235-251): Springer. https://doi.org/10.1007/978-3-319-58763-9_13

Honohan, P. (2008). Cross-country variation in household access to financial services. *Journal of Banking & Finance, 32*(11), 2493-2500. https://doi.org/10.1016/j.jbankfin.2008.05.004

Hout, W. (2016). Classical approaches to development: Modernisation and dependency. *The Palgrave handbook of international development*, 21-39. https://doi.org/10.1057/978-1-137-42724-3_2

Hu, L., & Randel, A. E. (2014). Knowledge sharing in teams: Social capital, extrinsic incentives, and team innovation. *Group & Organization Management, 39*(2), 213-243. https://doi.org/10.1177/1059601114520969

Hudson, N. W., & Roberts, B. W. (2014). Goals to change personality traits: Concurrent links between personality traits, daily behavior, and goals to change oneself. *Journal of Research in Personality, 53*, 68-83. https://doi.org/10.1016/j.jrp.2014.08.008

Huysman, M., & Wulf, V. (2004). *Social capital and information technology*: MIT Press.

Ianchovichina, E., & Gable, S. (2012). What is inclusive growth. *Commodity Price Volatility and Inclusive Growth in Low-Income Countries. Washington, DC: IMF*, 147-60.

Ibrahim, S. S. (2006). From Individual to Collective Capabilities: The Capability Approach as a Conceptual Framework for Self-help. *Journal of Human Development, 7*(3), 397-416. https://doi.org/10.1080/14649880600815982

Ibtasam, S., Mehmood, H., Razaq, L., Webster, J., Yu, S., & Anderson, R. (2017). An exploration of smartphone based mobile money applications in Pakistan. *In Proceedings of the Ninth International Conference on Information and Communication Technologies and Development* (pp. 1-11). https://doi.org/10.1145/3136560.3136571

Ibtasam, S., Razaq, L., Anwar, H. W., Mehmood, H., Shah, K., Webster, J., Kumar, N., & Anderson, R. (2018). Knowledge, access, and decision-making: Women's financial inclusion in Pakistan. *In Proceedings of the 1st ACM SIGCAS Conference on Computing and Sustainable Societies* (pp. 1-12). https://doi.org/10.1145/3209811.3209819

Islam, A., Muzi, S., & Meza, J. L. R. (2018). Does mobile money use increase firms' investment? Evidence from Enterprise Surveys in Kenya, Uganda, and Tanzania. *Small Business Economics, 51*(3), 687-708. https://doi.org/10.1007/s11187-017-9951-x

Ivan, I., Ciurea, C., Doinea, M., & Avramiea, A. (2012). Collaborative management of risks and complexity in banking systems. *Informatica Economica, 16*(2), 128.

Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review, 104*(1), 183-223. https://doi.org/10.1257/aer.104.1.183

Jāhāna, S. (2016). *Human development report 2016: human development for everyone*: United Nations Publications.

Jain, A. K., & Joy, A. (1997). Money matters: An exploratory study of the socio-cultural context of consumption, saving, and investment patterns. *Journal of economic psychology, 18*(6), 649-675.

Jayawardhena, C., & Foley, P. (2000). Changes in the banking sector–the case of Internet banking in the UK. *Internet research*, *10*(1), 19-31. https://doi.org/10.1108/10662240010312048

Jimenez, A., Abbott, P., & Dasuki, S. (2022). In-betweenness in ICT4D research: critically examining the role of the researcher. *European Journal of Information Systems, 31*(1), 25-39. https://doi.org/10.1080/0960085X.2021.1978340

Johnson, E., & Sherraden, M. S. (2007). From financial literacy to financial capability smong youth. *Journal of Sociology & Social Welfare, 34*(3), 119-145. https://doi.org/10.15453/0191-5096.3276

Johri, A., & Kumar, S. (2023). Exploring Customer Awareness towards Their Cyber Security in the Kingdom of Saudi Arabia: A Study in the Era of Banking Digital Transformation. *Human Behavior and Emerging Technologies, 2023*(1), 1-10. https://doi.org/10.1155/2023/2103442

Joia, L. A., & dos Santos, R. P. (2019). ICT-equipped bank boat and the financial inclusion of the riverine population of Marajó Island in the Brazilian Amazon. *Information Systems Journal, 29*(4), 842-887. https://doi.org/10.1111/isj.12200

Karlan, D., Ratan, A. L., & Zinman, J. (2014). Savings by and for the Poor: A Research Review and Agenda. *Review of Income and Wealth, 60*(1), 36-78. https://doi.org/10.1111/roiw.12101

Kasser, T., Ryan, R. M., Couchman, C. E., & Sheldon, K. M. (2004). Materialistic values: Their causes and consequences. In T. Kasser & A. D. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 11–28). https://doi.org/10.1037/10658-002

Kim, Zoo, H., Lee, H., & Kang, J. (2018). Mobile financial services, financial inclusion, and development: A systematic review of academic literature. *The Electronic Journal of Information Systems in Developing Countries, 84*(5), e12044. https://doi.org/10.1002/isd2.12044

Kivunja, C. (2018). Distinguishing between theory, theoretical framework, and conceptual framework: A systematic review of lessons from the field. *International Journal of Higher Education, 7*(6), 44-53. https://doi.org/10.5430/ijhe.v7n6p44

Kleine, D. (2010). ICT4WHAT?—Using the choice framework to operationalise the capability approach to development. *Journal of International Development, 22*(5), 674-692. https://doi.org/10.1002/jid.1719

Kleine, D. (2013). *Technologies of choice?: ICTs, development, and the capabilities approach*: MIT Press. https://doi.org/10.7551/mitpress/9061.001.0001

Klinger, E. (1977). *Meaning and void: Inner experience and the incentives in peoples lives*: U of Minnesota Press.

Kolloju, N. (2014). Business correspondent model vis-à-vis financial inclusion in India: new practice of banking to the poor. *International Journal of Scientific and Research Publications, 4*(1), 1-7.

Kowalewski, O., & Pisany, P. (2023). The rise of fintech: a cross-country perspective. *Technovation, 122,* 102642.

KPMG. (2019). *Fintech in India - Powering mobile payments*: KPMG Assurance and Consulting Services LLP. Retrieved from https://assets.kpmg/content/dam/kpmg/in/pdf/2019/08/Fintech-in-India%E2%80%93Powering-mobile-payments.pdf

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*: Los Angeles, CA: Sage Publications.

Lee, T. W., Locke, E. A., & Latham, G. P. (1989). Goal setting theory and job performance. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology.* (pp. 291-326). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.

Lee, R., Tuselmann, H., Jayawarna, D., & Rouse, J. (2019). Effects of structural, relational and cognitive social capital on resource acquisition: a study of entrepreneurs residing in

multiply deprived areas. *Entrepreneurship & Regional Development, 31*(5-6), 534-554. https://doi.org/10.1080/08985626.2018.1545873

Lei, X., Shen, Y., & Yang, L. (2023). Digital financial inclusion and subjective wellbeing–Evidence from China health and retirement longitudinal study. *China Economic Review*, 102013. https://doi.org/10.1016/j.chieco.2023.102013

Lenka, S. K., & Barik, R. (2018). Has expansion of mobile phone and internet use spurred financial inclusion in the SAARC countries? *Financial Innovation, 4*(1), 1-19. https://doi.org/10.1186/s40854-018-0089-x

Li, Y., Wang, X., Westlund, H., & Liu, Y. (2015). Physical Capital, Human Capital, and Social Capital: The Changing Roles in China's Economic Growth. *Growth and change*, *46*(1), 133-149. https://doi.org/0.1111/grow.12084

Li, J., Wang, J., Wangh, S., & Zhou, Y. (2019). Mobile payment with alipay: An application of extended technology acceptance model. *IEEE Access, 7*, 50380-50387. https://doi.org/10.1109/ACCESS.2019.2902905

Lin, N. (1999). Building a network theory of social capital. *Connections, 22*, 28-51. https://doi.org/10.4324/9781315129457-1

Lo Bianco, J. (2010). The importance of language policies and multilingualism for cultural diversity. *International Social Science Journal, 61*(199), 37-67. https://doi.org/10.1111/j.1468-2451.2010.01747.x

Lu, Y., Yang, S., Chau, P. Y., & Cao, Y. (2011). Dynamics between the trust transfer process and intention to use mobile payment services: A cross-environment perspective. *Information & Management, 48*(8), 393-403. https://doi.org/10.1016/j.im.2011.09.006

Magesa, M. M., Michael, K., & Ko, J. (2020). Access and use of agricultural market information by smallholder farmers: Measuring informational capabilities. *The Electronic Journal of Information Systems in Developing Countries, 86*(6), e12134. https://doi.org/10.1002/isd2.12134

Malady, L. (2016). Consumer protection issues for digital financial services in emerging markets. *Banking & Finance Law Review, 31*(2), 389-401.

Malladi, C. M., & McDonald, L. (2020). *Executive Viewpoint: Toward Digital Financial Inclusion*. Retrieved from https://sloanreview.mit.edu/sponsors-content/executive-viewpoint-toward-digital-financial-inclusion/

Mallat, N. (2007). Exploring consumer adoption of mobile payments–A qualitative study. The *Journal of Strategic Information Systems, 16*(4), 413-432. https://doi.org/10.1016/j.jsis.2007.08.001

Manyika, J., Lund, S., Singer, M., White, O., & Berry, C. (2016). Digital finance for all: Powering inclusive growth in emerging economies. *McKinsey Global Institute*, 1-15.

Mariscal, J., & Rojas-Lozano, D. (2020). A state-led model of financial inclusion through mobile services. *Information Technologies & International Development, 16*, 12.

Martinez, R. N., Smith, B. M., Etingen, B., Houston, T. K., Shimada, S. L., Amante, D. J., Cutrona, S. L. (2021). Health-related goal setting and achievement among veterans with high technology adoption. *Journal of general internal medicine, 36*(11), 3337-3345. https://doi.org/10.1007/s11606-021-06779-5

Mawona, A., & Mpogole, H. (2013). ICT and financial inclusion: Adoption of mobile phone banking among small business owners in Iringa, Tanzania. *IEEE IST-Africa Conference & Exhibition,* 1-9.

McGregor, J. A., Camfield, L., & Woodcock, A. (2009). Needs, wants and goals: Wellbeing, quality of life and public policy. *Applied Research in Quality of Life, 4*(2), 135-154. https://doi.org/10.1007/s11482-009-9069-7

McMullin, C. (2023). Transcription and qualitative methods: Implications for third sector research. *International Journal of Voluntary and Nonprofit Organizations, 34*(1), 140-153. https://doi.org/10.1007/s11266-021-00400-3

Mehta, R., & Belk, R. W. (1991). Artifacts, identity, and transition: Favorite possessions of Indians and Indian immigrants to the United States. *Journal of consumer Research, 17*(4), 398-411.

Meiring, I. (1998). Electronic funds transfers. *Juta's Bussiness Law, 6*(1), 36-41.

Menon, P. (2019). Financial inclusion, banking the unbanked: Concepts, issues, and policies for India. *Journal of Public Affairs*, *19*(2), e1911. https://doi.org/10.1002/pa.1911

Michael, K., Kobran, S., Abbas, R., & Hamdoun, S. (2019). Privacy, data rights and cybersecurity: Technology for good in the achievement of sustainable development goals. *IEEE International Symposium on Technology and Society.* https://doi.org/10.1109/ISTAS48451.2019.8937956

Miller, R. L. (2003). Abduction and retroduction. In R. L. Miller, & J.D. Brewer (Eds.), *The A-Z of social research.* London, UK: Sage.

Mishra, A.K. (1996). Organizational Responses to Crisis: The Centrality of Trust. In: Kramer, Roderick M. and Thomas Tyler (Eds.), *Trust in Organizations*. Newbury Park, CA: Sage.

MOF. (2022). *Annual Report 2021 - 2022*. Retrieved from https://financialservices.gov.in/annual-report

Mohan, R., & Ray, P. (2018). Indian financial sector: Structure, trends, and turns. In *Routledge Handbook of Banking and Finance in Asia* (pp. 54-75): Routledge.

Montague, E., & Xu, J. (2012). Understanding active and passive users: The effects of an active user using normal, hard and unreliable technologies on user assessment of trust in technology and co-user. *Applied ergonomics, 43*(4), 702-712. https://doi.org/10.1016/j.apergo.2011.11.002

Morawczynski, O. (2009). Exploring the usage and impact of “transformational” mobile financial services: the case of M-PESA in Kenya. *Journal of Eastern African Studies, 3*(3), 509-525. https://doi.org/10.1080/17531050903273768

Morawczynski, O., & Miscione, G. (2008, September). Examining trust in mobile banking transactions: The case of M-PESA in Kenya. In *IFIP International Conference on Human Choice and Computers* (pp. 287-298). Boston, MA: Springer US.

Munyegera, G. K., & Matsumoto, T. (2018). ICT for financial access: Mobile money and the financial behavior of rural households in Uganda. *Review of Development Economics, 22*(1), 45-66. https://doi.org/10.1111/rode.12327

Murendo, C., Wollni, M., De Brauw, A., & Mugabi, N. (2018). Social network effects on mobile money adoption in Uganda. *The Journal of Development Studies, 54*(2), 327-342. https://doi.org/10.1080/00220388.2017.1296569

Murphy, J. T., Carmody, P., & Surborg, B. (2014). Industrial transformation or business as usual? Information and communication technologies and Africa's place in the global information economy. *Review of African Political Economy, 41*(140), 264-283. https://www.jstor.org/stable/24858565

Myers, M. D., & Walsham, G. (1998). Interpretive research in information systems. *Journal of Information Technology, 13*(4). https://doi.org/10.1057/jit.1998.2

Nandru, P., SA, S. K., & Chendragiri, M. (2023). Adoption intention of mobile QR code payment system among marginalized street vendors: an empirical investigation from an emerging economy. *Journal of Science and Technology Policy Management(ahead-of-print).*

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23*(2), 242-266. https://doi.org/10.2307/259373

Nascimento, L. d. S., & Steinbruch, F. K. (2019). "The interviews were transcribed", but how? Reflections on management research. *RAUSP Management Journal, 54*, 413-429. https://doi.org/10.1108/RAUSP-05-2019-0092

Neuman, W. L. (2014). *Social research methods: qualitative and quantitative approaches*: Pearson.

NIC. (2023). *Public Distribution System*. Retrieved from https://nfsa.gov.in/portal/PDS_page

NIPFA. (2022). *Invest India*. Retrieved from https://www.investindia.gov.in/

Noy, C. (2008). Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology, 11*(4), 327-344. https://doi.org/10.1080/13645570701401305

NPCI. (2022). *Unified Payments Interface (UPI) Product Overview*. Retrieved from https://www.npci.org.in/what-we-do/upi/product-overview

NRI Department. (2022). *Physical Infrastructure*. Retrieved from https://nri.up.gov.in/article/en/physical-infrastructure#:~:text=The%20railway%20network%20in%20Uttar,the%20year%202011%2D12*.

Nussbaum, M., & Sen, A. (1993). *The quality of life*: Clarendon Press.

Nussbaum, M. C. (2000). *Women and human development: The capabilities approach* (Vol. 3): Cambridge University Press.

Öğütçü, G., Testik, Ö. M., & Chouseinoglou, O. (2016). Analysis of personal information security behavior and awareness. *Computers & Security, 56,* 83-93. https://doi.org/10.1016/j.cose.2015.10.002

Okonji, P. E., & Ogwezzy, D. C. (2018). Financial inclusion: perceptions of visually impaired older Nigerians. *Journal of Enabling Technologies, 12*(1), 10-21. https://doi.org/10.1108/JET-08-2017-0033

Oliver, D. G., Serovich, J. M., & Mason, T. L. (2005). Constraints and opportunities with interview transcription: Towards reflection in qualitative research. *Social Forces, 84*(2), 1273-1289. https://doi.org/10.1353/sof.2006.0023

Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research, 2*(1), 1-28. https://doi.org/10.1287/isre.2.1.1

Ouma, S. A., Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Review of Development Finance, 7*(1), 29-35. https://doi.org/10.1016/j.rdf.2017.01.001

Paccagnella, M., & Sestito, P. (2014). School cheating and social capital. *Education Economics, 22*(4), 367-388. https://doi.org/10.1080/09645292.2014.904277

Pal, A., Herath, T., De', R., & Rao, H. R. (2020). Contextual facilitators and barriers influencing the continued use of mobile payment services in a developing country: insights from

adopters in India. *Information Technology for Development, 26*(2), 394-420. .https://doi.org/10.1080/02681102.2019.1701969

Parthasarathy, B., & Joshi, A. (2021). *Indian Financial Sector Changes You Need To Look Out For In 2022*. Retrieved from https://www.forbes.com/advisor/in/banking/indian-financial-sector-changes-you-need-to-look-out-for-in-2022/

Patton, M. Q. (1990). *Qualitative evaluation and research methods*: SAGE Publications, Inc.

Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M. (2020). Digital Financial Services. *World Bank*.

Pelzang, R., & Hutchinson, A. M. (2017). Establishing cultural integrity in qualitative research: Reflections from a cross-cultural study. *International Journal of Qualitative Methods, 17*(1), 1609406917749702. https://doi.org/10.1177/1609406917749702

Peprah, J. A., Oteng, C., & Sebu, J. (2020). Mobile Money, Output and Welfare Among Smallholder Farmers in Ghana. *SAGE Open, 10*(2). https://doi.org/10.1177/2158244020931114

Peša, I. (2018). The developmental potential of frugal innovation among mobile money agents in Kitwe, Zambia. *The European Journal of Development Research, 30*(1), 49-65. https://doi.org/0.1057/s41287-017-0114-3

Pieterse, J. N. (2010). *Development theory*: Sage.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*(1), 1-24. https://www.jstor.org/stable/223472

Prina, S. (2015). Banking the poor via savings accounts: Evidence from a field experiment. *Journal of Development Economics, 115*, 16-31. https://doi.org/10.1016/j.jdeveco.2015.01.004

Promphakping, B., Somaboot, P., Mee-Udon, F., Rattanaprathum, N., Weeranakin, P., Promphakping, N., & Suparatanagool, S. (2021). Using life goals to explore subjective wellbeing of people in northeast Thailand. *International Journal of Sociology and Social Policy*, *41*(9/10), 949-962. https://doi.org/10.1108/IJSSP-06-2020-0219

Putnam, R. (1993). The prosperous community: Social capital and public life. *The american, 4*.

Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy, 6*(1), 65-78. https://doi.org/10.1353/jod.1995.0002

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*: Simon & Schuster.

Rahman, S. A., Didarul Alam, M. M., & Taghizadeh, S. K. (2019). Do mobile financial services ensure the subjective wellbeing of micro-entrepreneurs? An investigation applying UTAUT2 model. *Information Technology for Development*, 1-24. https://doi.org/10.1080/02681102.2019.1643278

Ram, S. (1989). Successful innovation using strategies to reduce consumer resistance an empirical test. *Journal of Product Innovation Management: An International Publication of the Product Development & Management Association, 6*(1), 20-34. https://doi.org/10.1111/1540-5885.610020

Rana, N. P., Luthra, S., & Rao, H. R. (2020). Key challenges to digital financial services in emerging economies: the Indian context. *Information Technology & People*, 33(1), 198-229. https://doi.org/10.1108/ITP-05-2018-0243

RBI. (2018). *Annual Report of the Central Board of Directors on the working of the Reserve Bank of India.*: Reserve Bank of India. Retrieved from

https://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/0ANREPORT201718077745EC9A874DB38C991F580ED14242.PDF

RBI. (2019). *Annual Report of the Central Board of Directors on the working of the Reserve Bank of India.*: Reserve Bank of India. Retrieved from https://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/0ANNUALREPORT2018193CB8CB2D3DEE4EFA8D6F0F6BD624CEDE.PDF

RBI. (2020). *Scheduled Commercial Banks*. Retrieved from https://rbidocs.rbi.org.in/rdocs/content/pdfs/BANKL13042020_I.pdf

RBI. (2021a). *Payment and Settlement Systems in India - Journey in the Second Decade of the Millennium*. Retrieved from https://www.rbi.org.in/scripts/FS_PressRelease.aspx?prid=51020&fn=9

RBI. (2021b). *Report on Trend and Progress of Banking in India 2020-21*. Retrieved from https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Trend%20and%20Progress%20of%20Banking%20in%20India

Reichertz, J. (2007). Abduction: The logic of discovery of grounded theory. *The SAGE handbook of grounded theory*, 214-228. https://doi.org/10.4135/9781848607941.n10

Reichertz, J. (2014). *Induction, deduction, abduction*. *In The SAGE Handbook of Qualitative Data Analysis* (pp. 123-135). SAGE Publications Ltd. https://doi.org/10.4135/9781446282243

Robeyns, I. (2005). The capability approach: a theoretical survey. *Journal of human development, 6*(1), 93-117. https://doi.org/10.1080/146498805200034266

Robeyns, I. (2006). The capability approach in practice. *Journal of Political Philosophy, 14*(3), 351-376. https://doi.org/10.1111/j.1467-9760.2006.00263.x

Rodrigues, L. F., Oliveira, A., Rodrigues, H., & Costa, C. J. (2019). Assessing consumer literacy on financial complex products. *Journal of Behavioral and Experimental Finance, 22*(C), 93-104. https://doi.org/10.1016/j.jbef.2019.02.005

Rogers, E. M. (1976). Communication and Development:The Passing of the Dominant Paradigm. *Communication Research, 3*(2), 213-240. https://doi.org/10.1177/009365027600300207

Rogers, E. M. (1983). *Diffusion of Innovations* (3rd ed.): New York: Free Press.

Rogozhkina, N. (2022). Cybersecurity in banking. *Belarusian State University of Informatics and Radioelectronics Minsk, Republic of Belarus.* Retrieved from https://libeldoc.bsuir.by/bitstream/123456789/48436/1/Rogozhkina_Cybersecurity.pdf

Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*: sage.

Rupam, V. (2019). Role of technology in fostering financial inclusion in India. *International Journal of Scientific & Technology Research*, *8*(10), 441-444.

Saldaña, J. (2013). *The coding manual for qualitative researchers* (Second ed.): SAGE.

Sanchez-Moyano, R., & Shrimali, B. P. (2021). The racialized roots of financial exclusion. *Community development innovation review: Fintech, racial equity, and an inclusive financial system*, 9-16.

Sathe, V. (2011). The World's Most Ambitious ID Project. *Innovations, A quarterly journal published by MIT Press*.

Sastry, V. V. L. N. (2020). *India's Demonetization, Pros and Cons.* Idea Publishing.

Saxena, D., & Joshi, N. (2019). Digitally Empowered Village: Case of Akodara in Gujarat, India. *South Asian Journal of Business and Management Cases, 8*(1), 27-31. https://doi.org/10.1177/2277977918803207

Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: Their structure and relationship to wellbeing in German and US college students. *Social Indicators Research, 50*(2), 225-241. https://doi.org/10.1023/A:1007084005278

Schmuck, P., & Sheldon, K. M. (2001). Life goals and wellbeing: To the frontiers of life goal research. *Life goals and wellbeing: Towards a positive psychology of human striving*, 1-17.

Schulman, M. D., & Anderson, C. (1999). The dark side of the force: a case study of restructuring and social Capital 1. *Rural Sociology, 64*(3), 351-372.

Sen, A. (1981) *Poverty and famines: An Essay on Entitlement and Deprivation*, Oxford: Clarendon Press.

Sen, A. (1993). Capability and wellbeing. *The Quality of Life, 30*, 270-293.

Sen, A. (1993). Capability and Wellbeing. In M. Nussbaum, & A. Sen (Eds.), *The Quality of Life* (pp. 30-53). Oxford: Clarendon Press. https://doi.org/10.1093/0198287976.003.0003

Sen, A. (1999). Development as freedom. New York: Knopf.

Sen, A. (2010). The mobile and the world. *Information Technologies & International Development, 6*(SE), pp. 1-3.

Servaes, J. (1995). Development communication–for whom and for what? *Communicatio, 21*(1), 39-49. https://doi.org/10.1080/02500169508537827

Servaes, J. (2020). *Handbook of communication for development and social change* (Vol. 1): Springer.

Sharma, S. 2017. Demonetisation's 7 benefits apart from failure to eradicate black money. *Business Today.*

Sharma, A., & Thomas, R. (2017). Mastering the New Realities of India's Banking Sector', McKinsey Report.

Sharma, H. (2022). Understanding the Interplay Between Digital Financial Services and the Life Goals of Rural Individuals. *Proceedings of the 14th Annual AIS SIG GlobDev Pre-ICIS Workshop, Copenhagen, Denmark, Saturday December 10, 2022.* Retrieved from https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1001&context=globdev2022

Sharma, H., & Díaz Andrade, A. (2023). Digital financial services and human development: current landscape and research prospects. *Information Technology for Development*, 1-25. https://doi.org/10.1080/02681102.2023.2199189

Shylaja, H., & Shivaprasad, H. (2021). Business Correspondents' Perspective on Financial Inclusion Initiatives: An Empirical Analysis. *Financial Inclusion in Emerging Markets: A Road Map for Sustainable Growth*, 73-93. https://doi.org/10.1007/978-981-16-2652-4_4

Singh, B. P., Kumari, A., Sharma, T., & Malhotra, A. (2021). Financial inclusion, Pradhan Mantri Jan Dhan Yojna scheme and economic growth: evidence from Indian states. *Economic Notes, 50*(3), e12186. https://doi.org/10.1111/ecno.12186

Singh, R., & Malik, G. (2019). Impact of digitalization on Indian rural banking customer: with reference to payment systems. *Emerging Economy Studies, 5*(1), 31-41. https://doi.org/10.1177/2394901519825912

Singh Rawat, V. (2013). UP achieves milestone in financial inclusion. *Business Standard*. Retrieved from https://www.business-standard.com/article/finance/up-achieves-milestone-in-financial-inclusion-111062900078_1.html

Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: extending UTAUT with innovativeness, risk, and trust. *Psychology & Marketing, 32*(8), 860-873. https://doi.org/10.1002/mar.20823

Smith SV. (2017a). Episode 770: When India's Cash Disappeared, Part One. Retrieved from: https://www.npr.org/sections/money/2017/05/12/528181998/episode-771-when-indias-cash-disappeared-part-two

Smith SV. (2017b). Episode 771: When India's Cash Disappeared, Part Two. Retrieved from: https://www.npr.org/sections/money/2017/05/12/528181998/episode-771-when-indias-cash-disappearedparttwo.

Sobal, J. (2001). Sample extensiveness in qualitative nutrition education research. *Journal of Nutrition Education, 33*(4), 184-192. https://doi.org/10.1016/S1499-4046(06)60030-4

Soedirgo, J., & Glas, A. (2020). Toward active reflexivity: Positionality and practice in the production of knowledge. *PS: Political Science & Politics, 53*(3), 527-531. https://doi.org/10.1017/S1049096519002233

Steptoe, A., O'Donnell, K., Marmot, M., & Wardle, J. (2008). Positive affect, psychological wellbeing, and good sleep. *Journal of Psychosomatic Research, 64*(4), 409-415. https://doi.org/10.1016/j.jpsychores.2007.11.008

Stevens, E. (2002). Electronic money and the future of central banks. *Economic Commentary*.

Stewart, F. (2005). Groups and capabilities. *Journal of Human Development, 6*(2), 185-204. https://doi.org/10.1080/14649880500120517

Sumner, A., & Tribe, M. A. (2008). *International development studies: Theories and methods in research and practice*: Sage Publications Ltd. https://doi.org/10.4135/9781446279397

Suresh, K. R., & Latha, K. L. (2021). Consumer Empowerment by Adapting E-Commerce–Indian Rural Consumers Online Shopping Behaviour Analysis. *Journal of Management, 8*(3), 13-24. https://doi.org/10.34218/JOM.8.3.2021.002

Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. *Review of Educational Research, 66*(3), 341-359. https://doi.org/10.3102/00346543066003341

Tavory, I., & Timmermans, S. (2014). *Abductive analysis: Theorizing qualitative research*: University of Chicago Press.

Thapa, D., & Sæbø, Ø. (2014). Exploring the link between ICT and development in the context of developing countries: A literature review. *The Electronic Journal of Information Systems in Developing Countries, 64*(1), 1-15. https://doi.org/10.1002/j.1681-4835.2014.tb00454.x

Throsby, D. (1999). Cultural capital. *Journal of Cultural Economics, 23*(1), 3-12. https://doi.org/10.1023/A:1007543313370

Toboso, M. (2010). From disability to functional diversity: ICT and Amartya Sen's Approach. In *Emerging Digital Spaces in Contemporary Society: Properties of Technology* (pp. 102-104): Springer. https://doi.org/10.1057/9780230299047_17

Trachuk, A., & Linder, N. (2017). The adoption of mobile payment services by consumers: an empirical analysis results. *Business and Economic Horizons, 13*(3), 383-408. https://doi.org/10.15208/beh.2017.28

Uduji, J. I., Okolo-Obasi, E. N., & Asongu, S. A. (2019). The impact of e-wallet on informal farm entrepreneurship development in rural Nigeria. *The Electronic Journal of Information Systems in Developing Countries, 85*(3), 1-27. https://doi.org/10.1002/isd2.12066

Ujjawal, A., Champatiray, A., Sadhu, S., & Mendiratta, T. (2015). Business Correspondent Model: An Analysis of the Financial Viability of Customer Service Providers and Client Satisfaction. *IFMR Research: Centre for Microfinance.*

UNDP. (1990). *Human Development Report*. New York.

UPDES. (2020). *Statistical Diary Uttar Pradesh 2020*: Economics and Statistics Division, State Planning Institute, Uttar Pradesh. Retrieved from http://updes.up.nic.in/esd/reports/dbank_march21/Diary%202020(English).pdf

Vaidya, R. (2012). *Major issues in the implementation of agricultural marketing information systems in developing countries*. ResearchSpace@ Auckland.

Vaidya, R., & Sharma, H. (2022). Framework for studying reflective social capital in ICT4D. *AIS Electronic Library*. Symposium conducted at the meeting of the Proceedings of the 14th Annual AIS SIG GlobDev 2022, Copenhagen, Denmark.

Van Brakel, P. A., & Chisenga, J. (2003). Impact of ICT-based distance learning: the African story. *The Electronic Library*, *21*(5), 476-486. https://doi.org/10.1108/02640470310499867

Van Hove, L., & Dubus, A. (2019). M-PESA and financial inclusion in Kenya: of paying comes saving? *Sustainability, 11*(3), 1-26. https://doi.org/10.3390/su11030568

Van Maanen, J. (1979). The fact of fiction in organizational ethnography. *Administrative Science Quarterly, 24*(4), 539-550. https://doi.org/10.2307/2392360

Van Nes, F., Abma, T., Jonsson, H., & Deeg, D. (2010). Language differences in qualitative research: is meaning lost in translation? *European Journal of Ageing, 7*(4), 313-316. https://doi.org/10.1007/s10433-010-0168-y

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425-478. https://doi.org/10.2307/30036540

Vishwanath, A., Neo, L. S., Goh, P., Lee, S., Khader, M., Ong, G., & Chin, J. (2020). Cyber hygiene: The concept, its measure, and its initial tests. *Decision Support Systems, 128*, 113160.

Waisbord, S. (2020). Family tree of theories, methodologies, and strategies in development communication. *Handbook of communication for development and social change*, 93-132.

Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems, 4*(2), 74-81. https://doi.org/10.1057/ejis.1995.9

Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems, 15*(3), 320-330. https://doi.org/10.1057/palgrave.ejis.3000589

Walsham, G. (2010). ICTs for the broader development of India: An analysis of the literature. *The Electronic Journal of Information Systems in Developing Countries, 41*(1), 1-20. https://doi.org/10.1002/j.1681-4835.2010.tb00293.x

Walsham, G. (2017). ICT4D research: reflections on history and future agenda. *Information Technology for Development, 23*(1), 18-41.

Wang, X., & He, G. (2020). Digital financial inclusion and farmers' vulnerability to poverty: Evidence from rural China. *Sustainability, 12*(4), 1-18. https://doi.org/10.3390/su12041668

Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: Evidence from Chinese rural households. *China Agricultural Economic Review, 14*(1), 64-83. https://doi.org/10.1108/CAER-08-2020-0189

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, *29*(1), 35-57. https://doi.org/10.2307/25148667

Widyanto, H. A., Kusumawardani, K. A., & Yohanes, H. (2022). Safety first: Extending UTAUT to better predict mobile payment adoption by incorporating perceived security, perceived risk and trust. *Journal of Science and Technology Policy Management, 13*(4), 952-973. https://doi.org/10.1108/JSTPM-03-2020-0058

Williamson, K., & Johanson, G. (2017). *Research methods: information, systems, and contexts*: Chandos Publishing.

Wolcott, H. F. (1999). *Ethnography: A way of seeing*: Rowman Altamira.

World Bank. (2016). *Uttar Pradesh: Poverty, Growth & Inequality.* : World Bank Group. Retrieved from https://documents1.worldbank.org/curated/en/187721467995647501/pdf/105884-BRI-P157572-ADD-SERIES-India-state-briefs-PUBLIC-UttarPradesh-Proverty.pdf

World Bank. (2018). *Financial inclusion is a key enabler to reducing poverty and boosting prosperity.* Retrieved from https://www.worldbank.org/en/topic/financialinclusion/overview

Yoshino, N., Morgan, P., & Wignaraja, G. (2015). Financial education in Asia: Assessment and recommendations. ADBI Working Paper 534. Tokyo: Asian Development Bank Institute. https://doi.org/10.2139/ssrn.2641681

Dasuki, S.I., & Zamani, E.D. (2019). Assessing mobile phone use by pregnant women in Nigeria: a capability perspective. *The Electronic Journal of Information Systems in Developing Countries*, *85*(5), 1-13. https://doi.org/10.1002/isd2.12092

Zhao, L., Lu, Y., Wang, B., Chau, P. Y., & Zhang, L. (2012). Cultivating the sense of belonging and motivating user participation in virtual communities: A social capital perspective. *International Journal of Information Management, 32*(6), 574-588. https://doi.org/10.1016/j.ijinfomgt.2012.02.006

Zheng, H., Li, D., Wu, J., & Xu, Y. (2014). The role of multidimensional social capital in crowdfunding: A comparative study in China and US. *Information & Management, 51*(4), 488-496. https://doi.org/10.1016/j.im.2014.03.003

Zheng, H., & Ma, W. (2021). Click it and buy happiness: does online shopping improve subjective wellbeing of rural residents in China? *Applied Economics, 53*(11), 4192-4206. https://doi.org/10.1080/00036846.2021.1897513

Zheng, Y., Hatakka, M., Sahay, S., & Andersson, A. (2018). Conceptualizing development in information and communication technology for development (ICT4D). *Information Technology for Development*, 24(1), 1-14. https://doi.org/10.1080/02681102.2017.1396020

Glossary

Aadhaar	Aadhaar is a 12-digit unique identification number based on an individual's demographic and biometric information that serves as proof of identity and proof of address for residents of India. The Unique Identification Authority of India (UIDAI) issues it on behalf of the Government of India. Aadhaar will provide a universal identity infrastructure that any Indian government and non-government institutions can use to check an individual's identity to provide services such as ration, passport, banking, mobile phone connection, or subsidy. **Source:** https://www.uidai.gov.in
AePS	Aadhaar Enabled Payment System (AePS) is a digital banking system that supports interoperable financial transactions using point of sale or micro-ATM devices through BCs (also called Bank Mitra) using Aadhaar biometrics verification (i.e. finger or IRIS). Customers can do balance inquiries, cash deposits and withdrawals, fund transfers (i.e. Aadhaar-to-Aadhaar), and payment transactions, such as consumer-to-business and consumer-to-government. There is no service fee for customers availing themselves of financial services via AePS. **Source:** http://cashlessindia.gov.in
Go Digital, Go Secure	Go Digital, Go Secure is a financial literacy programme launched by the RBI to develop awareness about DFS, including digital transaction convenience, cybersecurity, and customer protection. Under this programme, the RBI instructed rural banks to conduct a monthly literacy camp to disseminate DFS awareness among rural customers. **Source:** https://pib.gov.in
KCC	The Kisan Credit Card (KCC) scheme was introduced in 1998 to provide farmers with sufficient and timely credit support from banking institutions at nominal interest rates. The scheme allows farmers to avail themselves of credit through flexible and simplified procedures to achieve their diverse cultivation goals, including short-term credit for crop production, post-harvest expenses, produce marketing loans, consumption requirements of farmer households, working capital for maintenance of farm assets and activities allied to agriculture. **Source:** https://www.rbi.org.in
Micro-ATM	Micro-ATM is a low-cost digital device connected to Indian banks across the country, used by BCs (who could be local grocery shopkeepers) to conduct instant financial transactions. To avail

	themselves of financial services via micro-ATM, customers need to provide their Aadhaar identification. The micro-ATM is designed to support several types of transactions, such as deposits, withdrawals, fund transfers, and balance enquiries. BCs hand over the requested money to customers from their cash drawers and printed receipts generated by the micro-ATM for withdrawal transactions. **Source:** http://cashlessindia.gov.in
NEFT	National Electronic Funds Transfer (NEFT) is an electronic fund transfer system that allows transactions to be processed in batches (i.e. 30-minute intervals) and can be performed by customers round-the-clock throughout all days of the year using the Internet and mobile banking channels. There is no minimum transfer amount for NEFT transactions. However, the maximum transfer limit depends on the type of bank account. Source: https://rbi.org.in
NPCI	National Payments Corporation of India (NPCI) is a not-for-profit organisation, an initiative of the Reserve Bank of India and the Indian Banks' Association for operating retail payments and settlement systems in India. NPCI aims to provide a robust infrastructure to the Indian banking system for handling physical and electronic payment systems by utilising information technology to achieve greater efficiency in banking operations and expand the reach of financial services across the country. **Source:** https://www.npci.org.in
Paytm	Paytm is the RBI-approved and UPI-based mobile payment and commerce platform enabling customers to perform instant financial transactions. Users can send and receive money through a digital wallet feature or linked bank account to merchants or other Paytm users at zero charges. **Source:** https://paytm.com
PhonePe	PhonePe is a UPI-based Indian digital payment mobile application. The app allows users to make digital payments, send and receive money to other users, invest money in banking and mutual funds, and purchase insurance and digital gold. PhonePe is a multilingual app that supports 11 Indian languages. **Source:** https://www.phonepe.com
PMGDISHA	Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA), an initiative by the government of India, aims to make at least one member (14 to 60 years of age) of the rural household digitally literate to operate digital devices (in the official language of India)

	to meet informational and financial services needs at their nearest common service centres. **Source:** https://www.pmgdisha.in
PMJDY	Pradhan Mantri Jan Dhan Yojana (PMJDY) is one of the massive financial inclusion initiatives in the world, launched by the Indian government in August 2014. This initiative aims to ensure that every unbanked person has access to financial services, such as savings accounts, credit, pension, direct transfers, remittance, and insurance facilities, in a cost-effective way. **Source:** https://pmjdy.gov.in
RBI	The Reserve Bank of India is India's central apex banking body. The RBI began its operations on April 1, 1935. The RBI provides a statutory foundation and supervision for the functioning of the country's financial system. Source: https://rbi.org.in
RTGS	Real Time Gross Settlement (RTGS) is a safe and secure digital system for transferring funds from one bank account to another on a 24x7x365 basis. Users can initiate RTGS transactions through the Internet or mobile banking platforms. The RBI offers an RTGS system for large-value transactions with a minimum transfer amount of ₹2,00,000/. However, the maximum transfer limit depends on the type of bank account. Source: https://rbi.org.in
RuPay	RuPay is an Indigenously developed safe payment system designed by NPCI to meet the goals of Indian customers, merchants, and banking institutions. Like Master and Visa, RuPay supports prepaid, debit and credit cards issued by Indian banks. RuPay cards support contactless – offline and online payments at over 42.4 million POS sites and nearly 1.90 million ATM outlets in more than 200 countries. **Source:** https://www.rupay.co.in
UPI	The Unified Payments Interface (UPI) is a highly advanced interoperable digital payment system that allows users to perform various financial services 24/7. These financial services include balance enquiry, sending and receiving money, transaction history, and alerts and notifications. UPI users can incorporate their multiple bank accounts into one mobile application, allowing them to avail themselves of several banking features under one umbrella. **Source:** http://cashlessindia.gov.in
USSD	The Unstructured Supplementary Service Data (USSD) channel is an innovative financial service that enables users to perform

	mobile banking transactions (e.g., balance enquiry, mini statement, and fund transfer) on basic feature mobile phones without needing an internet data facility. Banking customers must dial a number (i.e. *99#) on their mobile phone and perform transactions through an interactive menu provided by the service provider on their mobile screen. **Source:** http://cashlessindia.gov.in

Appendices

Appendix A – Ethics Application Approval Letter

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

18 May 2021

Antonio Diaz Andrade
Faculty of Business Economics and Law

Dear Antonio

Re Ethics Application: **20/386 Digital Banking for Achieving Life Goals: Analysing Experiences of Rural Individuals in India**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 18 May 2024.

Non-Standard Conditions of Approval

1. Please send through a Consent and Release form (and translation) for photographs using the current exemplar which can be found on the Research Ethics website at http://aut.ac.nz/researchethics.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be reviewed by AUTEC before commencing your study.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: himanshu.sharma@aut.ac.nz; Ranjan Vaidya

Appendix B – Participant Information Sheets

Rural Residents (English Version)

Participant Information Sheet

This information sheet is for rural individuals.

Date Information Sheet Produced: 23 October 2020

Project Title

Digital Banking for Achieving Life Goals: Analysing Experiences of Rural Individuals in India

An Invitation

I am Himanshu Sharma. I am studying for the degree of Doctorate of Philosophy (PhD) in Information Systems at Auckland University of Technology (AUT), New Zealand. As the primary researcher, I would like to invite you to participate in a face-to-face interview for the data-collection phase of my scientific research, which is an essential part of the requirement for my PhD degree. Your participation is voluntary, and you may withdraw at any time before the completion of data collection.

What is the purpose of this research?

This study aims to examine the role of digital banking in the lives of rural individuals, and how they use digital banking to achieve various life goals. Examples of digital banking include mobile banking, internet banking, and automated teller machine (ATM) banking. The empirical findings of this study will be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

I have requested the existing participants to share the details of this research with other potential participants. Rural individuals who have a bank account and have experience of using digital banking are invited to participate in this research. If you are interested to participate in this research, please contact the primary researcher.

How do I agree to participate in this research?

You will need to sign the consent form indicating your approval to participate in this research. The consent form will be provided by the primary researcher (Himanshu Sharma). Interested participants can contact the primary researcher by email (himanshu.sharma@aut.ac.nz) or by mobile number (+91 9997864134) to avail the consent form.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

If you are interested in participating in this study, you will need to sign the consent form. Then you will be asked for a convenient time and place for the face-to-face and one-to-one interview. During the interview session, you will be asked questions related to your experience with digital banking use. There are no right or wrong answers to the questions, and you are free to express your feelings, views and experiences. Your responses during the interview will be recorded using the audio-tape recorder as well as the field notebook. Interview recordings will be used for translation into English, and analysis by the primary researcher. Your identity and the information you provide during the interviews will remain confidential.

What are the discomforts and risks?

Participants in this study will be asked for their personal experiences, views and opinions on digital banking use. Your name and identity will also be kept confidential, and only pseudonyms (if required) will be used in a research thesis. Therefore, there will not be any discomfort or risk.

How will these discomforts and risks be alleviated?

Your information and responses will not be shared or disclosed with anyone else outside of the research team. Your confidentiality and privacy are guaranteed. Your participation in an interview is absolutely voluntary. Thus, you will have the freedom to withdraw from the interview at any time.

What are the benefits?

This study will contribute to a better understanding of how the existing digital banking facilities, enable and impede rural individuals to achieve their diverse life goals. Also, this research will offer insights into the role of agencies and institutions that oversee financial inclusion initiatives, technological infrastructure, and social and economic development of rural communities; and how these regulatory bodies address rural people's goals and interests. This study will allow the primary researcher to complete his degree of Doctorate of Philosophy (PhD) in Information Systems successfully. Moreover, the research team can publish the research findings in the reputed academic journals.

How will my privacy be protected?

Your information and responses will not be shared with anyone else outside of this research team (primary researcher and research supervisors). Your confidentiality will be maintained, and only the research team will have access to your information. The collected data will be stored securely within the premises of Auckland University of Technology, New Zealand. All the data will be destroyed after a period of six years.

What are the costs of participating in this research?

The only cost of participating in the interview is your time – not exceeding more than two hours, which is much appreciated. Furthermore, you may be asked for a follow-up interview (not more than 30 minutes) in case the primary researcher requires any further input on questions discussed during initial interview.

What opportunity do I have to consider this invitation?

You will have two weeks to go through and sign the consent form to participate in this study.

Will I receive feedback on the results of this research?

Yes, you are welcome to contact me on email if you wish to receive a summary of the research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Antonio Díaz Andrade, antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz*, (+649) 921 9999 Ext. 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Himanshu Sharma (Primary Researcher) – himanshu.sharma@aut.ac.nz

Antonio Díaz Andrade (Primary Research Supervisor) - antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804

Ranjan Vaidya (Secondary Research Supervisor) - ranjan.vaidya@aut.ac.nz, (+649) 921 9999 Ext. 5169

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Rural Residents (Hindi Version)

प्रतिभागी सूचना पत्र

यह सूचना पत्र ग्रामीण व्यक्तियों के लिए है।

दिनांक सूचना पत्र निर्मित: 23 अक्टूबर 2020

परियोजना का शीर्षक

डिजिटल बैंकिंग के लिए जीवन लक्ष्य प्राप्त करना: भारत में ग्रामीण व्यक्तियों के अनुभवों का विश्लेषण

एक निमंत्रण

मैं हिमांशु शर्मा हूं। मैं न्यूजीलैंड के ऑकलैंड विश्वविद्यालय (AUT) में सूचना प्रणाली में डॉक्टरेट ऑफ फिलॉसफी (पीएचडी) की डिग्री के लिए अध्ययन कर रहा हूं। प्राथमिक शोधकर्ता के रूप में, मैं आपको अपने वैज्ञानिक अनुसंधान के डेटा-संग्रह चरण के लिए आमने-सामने साक्षात्कार में भाग लेने के लिए आमंत्रित करना चाहूंगा, जो कि मेरी पीएचडी डिग्री के लिए आवश्यकता का एक अनिवार्य हिस्सा है। आपकी भागीदारी स्वेच्छिक है, और आप डेटा संग्रह के पूरा होने से पहले किसी भी समय वापस ले सकते हैं।

इस शोध का उद्देश्य क्या है?

इस अध्ययन का उद्देश्य ग्रामीण व्यक्तियों के जीवन में डिजिटल बैंकिंग की भूमिका की जांच करना है, और विभिन्न जीवन लक्ष्यों को प्राप्त करने के लिए वे डिजिटल बैंकिंग का उपयोग कैसे करते हैं। डिजिटल बैंकिंग के उदाहरणों में मोबाइल बैंकिंग, इंटरनेट बैंकिंग और स्वचालित टेलर मशीन (एटीएम) बैंकिंग शामिल हैं। इस अध्ययन के अनुभवजन्य निष्कर्षों का इस्तेमाल शैक्षिक प्रकाशनों और प्रस्तुतियों के लिए किया जाएगा।

मेरी पहचान कैसे की गई और मुझे इस शोध में भाग लेने के लिए क्यों आमंत्रित किया जा रहा है?

मैंने मौजूदा प्रतिभागियों से इस शोध का विवरण अन्य संभावित प्रतिभागियों के साथ साझा करने का अनुरोध किया है। ग्रामीण व्यक्ति जिनके पास बैंक खाता है और डिजिटल बैंकिंग का उपयोग करने का अनुभव है, उन्हें इस शोध में भाग लेने के लिए आमंत्रित किया जाता है। यदि आप इस शोध में भाग लेना चाहते हैं, तो कृपया प्राथमिक शोधकर्ता से संपर्क करें।

मैं इस शोध में भाग लेने के लिए कैसे सहमत हूं?

आपको इस शोध में भाग लेने के लिए अपनी स्वीकृति का संकेत देते हुए सहमति पत्र (consent form) पर हस्ताक्षर करने की आवश्यकता होगी। सहमति प्रपत्र प्राथमिक शोधकर्ता (हिमांशु शर्मा) द्वारा प्रदान किया जाएगा। इच्छुक प्रतिभागी प्राथमिक शोधकर्ता से ईमेल (himanshu.sharma@aut.ac.nz) या मोबाइल नंबर (+91 9997864134) पर सहमति पत्र प्राप्त करने के लिए संपर्क कर सकते हैं।

इस शोध में आपकी भागीदारी स्वेच्छिक है (यह आपकी पसंद है) और चाहे आप भाग लें या न चुनें, इससे न तो आपको कोई फायदा होगा और न ही नुकसान। आप किसी भी समय अध्ययन से हट सकते हैं। यदि आप अध्ययन से हटना चुनते हैं, तो आपको किसी भी डेटा को चुनने के बीच विकल्प की पेशकश की जाएगी, जो कि आपके द्वारा हटाए गए या इसे उपयोग करने के लिए जारी रखने की अनुमति देने से संबंधित है। हालाँकि, एक बार निष्कर्षों का उत्पादन करने के बाद, आपके डेटा को हटाना संभव नहीं हो सकता है।

इस शोध में क्या होगा?

यदि आप इस अध्ययन में भाग लेने के इच्छुक हैं, तो आपको सहमति पत्र पर हस्ताक्षर करने की आवश्यकता होगी। फिर आपसे आमने-सामने साक्षात्कार (face-to-face interview) के लिए सुविधाजनक समय और स्थान के लिए पूछा जाएगा। साक्षात्कार सत्र के दौरान, आपसे डिजिटल बैंकिंग चैनलों और ग्रामीण लोगों को दी जाने वाली सेवाओं से

संबंधित प्रश्न पूछे जाएंगे। प्रश्नों के कोई सही या गलत उत्तर नहीं हैं, और आप अपनी भावनाओं, विचारों और अनुभवों को व्यक्त करने के लिए स्वतंत्र हैं। साक्षात्कार के दौरान आपकी प्रतिक्रियाओं को ऑडियो-टेप रिकॉर्डर के साथ-साथ फ़ील्ड नोटबुक (field notebook) का उपयोग करके रिकॉर्ड किया जाएगा। साक्षात्कार रिकॉर्डिंग का उपयोग अंग्रेजी में अनुवाद के लिए किया जाएगा, और प्राथमिक शोधकर्ता द्वारा विश्लेषण आपकी पहचान और साक्षात्कार के दौरान आपके द्वारा प्रदान की जाने वाली जानकारी गोपनीय रहेगी।

असुविधाएँ और जोखिम क्या हैं?

इस अध्ययन में प्रतिभागियों से उनके व्यक्तिगत अनुभवों, विचारों और डिजिटल बैंकिंग के उपयोग पर राय मांगी जाएगी। आपका नाम और पहचान भी गोपनीय रखी जाएगी, और केवल शोधग्रंथ में छद्म शब्द (यदि आवश्यक हो) का उपयोग किया जाएगा। इसलिए, कोई असुविधा या जोखिम नहीं होगा।

इन असुविधाओं और जोखिमों को कैसे कम किया जाएगा?

आपकी जानकारी और प्रतिक्रियाओं को अनुसंधान टीम के बाहर किसी और के साथ साझा या प्रकट नहीं किया जाएगा। आपकी गोपनीयता और गोपनीयता की गारंटी है। एक साक्षात्कार में आपकी भागीदारी बिल्कुल स्वैच्छिक है। इस प्रकार, आपको किसी भी समय साक्षात्कार से हटने की स्वतंत्रता होगी।

क्या लाभ हैं?

यह अध्ययन इस बात की बेहतर समझ में योगदान देगा कि कैसे मौजूदा डिजिटल बैंकिंग सुविधाएं, ग्रामीण व्यक्तियों को उनके विविध जीवन लक्ष्यों को प्राप्त करने में सक्षम और बाधित करती हैं। इसके अलावा, यह शोध उन एजेंसियों और संस्थानों की भूमिका की पेशकश करेगा जो वित्तीय समावेशन की पहल, तकनीकी बुनियादी ढांचे और ग्रामीण समुदायों के सामाजिक और आर्थिक विकास की देखरेख करते हैं। यह अध्ययन प्राथमिक शोधकर्ता को सूचना प्रणाली में डॉक्टरेट ऑफ फिलॉसफी (पीएचडी) की अपनी डिग्री को सफलतापूर्वक पूरा करने की अनुमति देगा। इसके अलावा, अनुसंधान टीम प्रतिष्ठित शैक्षणिक पत्रिकाओं में शोध के निष्कर्षों को प्रकाशित कर सकती है।

मेरी गोपनीयता कैसे सुरक्षित रहेगी?

आपकी जानकारी और प्रतिक्रियाएं इस शोध टीम (प्राथमिक शोधकर्ता और अनुसंधान पर्यवेक्षकों) के बाहर किसी और के साथ साझा नहीं की जाएंगी। आपकी गोपनीयता को बनाए रखा जाएगा, और केवल अनुसंधान टीम को आपकी जानकारी तक पहुंच होगी। एकत्र जानकारी को न्यूजीलैंड के ऑकलैंड यूनिवर्सिटी ऑफ़ टेक्नोलॉजी के परिसर में सुरक्षित रूप से संग्रहीत किया जाएगा। सभी आधार-सामग्री छह साल की अवधि के बाद नष्ट हो जाएंगे।

इस शोध में भाग लेने की लागत क्या है?

साक्षात्कार में भाग लेने का एकमात्र खर्च आपका समय (लगभग तीस मिनट से दो घंटे) है - जिसकी बहुत सराहना की जाती है। इसके अलावा, प्रारंभिक साक्षात्कार के दौरान चर्चा किए गए प्रश्नों पर प्राथमिक शोधकर्ता को किसी अन्य इनपुट की आवश्यकता होती है, तो आपको एक अनुवर्ती साक्षात्कार (30 मिनट से अधिक नहीं) के लिए कहा जा सकता है।

मुझे इस आमंत्रण पर विचार करने का क्या अवसर मिला?

इस अध्ययन में भाग लेने के लिए आपके पास सहमति पत्र पर हस्ताक्षर करने के लिए दो सप्ताह का समय होगा।

क्या मुझे इस शोध के परिणामों पर प्रतिक्रिया मिलेगी?

हां, यदि आप शोध निष्कर्षों का सारांश प्राप्त करना चाहते हैं, तो ईमेल पर मुझसे संपर्क करने का स्वागत है।

अगर मुझे इस शोध के बारे में चिंता है तो मैं क्या करूं?

इस परियोजना की प्रकृति के बारे में किसी भी तरह की चिंताओं को परियोजना पर्यवेक्षक, प्रोफेसर एंटोनियो डिआज एंड्रेड (Professor Antonio Díaz Andrade), को सूचित किया जाना चाहिए। antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804.

शोध के संचालन से संबंधित चिंताओं को AUTEC के कार्यकारी सचिव को सूचित किया जाना चाहिए, *ethics@aut.ac.nz*, (+649) 921 9999 Ext. 6038।

इस शोध के बारे में और जानकारी के लिए मैं किससे संपर्क करूं?

कृपया इस सूचना पत्र और अपने भविष्य के संदर्भ के लिए सहमति फॉर्म की एक प्रति रखें। आप निम्नानुसार अनुसंधान टीम से संपर्क करने में सक्षम हैं:

शोधकर्ता संपर्क विवरण:

हिमांशु शर्मा (प्राथमिक शोधकर्ता) - himanshu.sharma@aut.ac.nz

एंटोनियो डिआज़ एंड्रेड (प्राथमिक अनुसंधान पर्यवेक्षक) - antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804

रंजन वैद्य (माध्यमिक अनुसंधान पर्यवेक्षक) - ranjan.vaidya@aut.ac.nz, (+649) 921 9999 Ext. 5169

ऑकलैंड यूनिवर्सिटी ऑफ टेक्नोलॉजी एथिक्स कमेटी (आचार समिति) द्वारा अनुमोदित 18 May 2021 अंतिम नैतिकता की मंजूरी दी गई थी, संदर्भ संख्या 20/386

Bank Employees (English Version)

Participant Information Sheet

This information sheet is for banking officials.

Date Information Sheet Produced: 23 October 2020

Project Title

Digital Banking for Achieving Life Goals: Analysing Experiences of Rural Individuals in India

An Invitation

I am Himanshu Sharma. I am studying for the degree of Doctorate of Philosophy (PhD) in Information Systems at Auckland University of Technology (AUT), New Zealand. As the primary researcher, I would like to invite you to participate in a face-to-face interview for the data-collection phase of my scientific research, which is an essential part of the requirement for my PhD degree. Your participation is voluntary, and you may withdraw at any time before the completion of data collection.

What is the purpose of this research?

This study aims to examine the role of digital banking in the lives of rural individuals, and how they use digital banking to achieve various life goals. Examples of digital banking include mobile banking, internet banking, and automated teller machine (ATM) banking. The empirical findings of this study will be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

I have informed about this research to the branch head and requested to share this information sheet with bank employees for their consideration and participation. Banking institutions, as digital banking providers, play a critical role in financial inclusion. Bank employees (i.e. branch manager, assistant branch manager and junior executives), currently working in the rural banks located in Uttar Pradesh state, are invited to share their insights related to the existing digital banking facilities for rural people.

How do I agree to participate in this research?

You will need to sign the consent form indicating your approval to participate in this research. The consent form will be provided by the primary researcher (Himanshu Sharma). Interested participants can contact the primary researcher by email (himanshu.sharma@aut.ac.nz) or by mobile number (+91 9997864134) to avail the consent form.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

If you are interested in participating in this study, you will need to sign the consent form. Then you will be asked for a convenient time and place for the face-to-face and one-to-one interview. During the interview session, you will be asked questions related to digital banking channels and services offered to rural people. There are no right or wrong answers to the questions, and you are free to express your feelings, views and experiences. Your responses during the interview will be recorded using the audio-tape recorder as well as the field notebook. Interview recordings will be used for translation into English, and analysis by the primary researcher. Your identity and the information you provide during the interviews will remain confidential.

What are the discomforts and risks?

Participants in this study will be asked for their personal experiences, views and opinions on digital banking use. Your name and identity will also be kept confidential, and only pseudonyms (if required) will be used in a research thesis. Therefore, there will not be any discomfort or risk.

How will these discomforts and risks be alleviated?

Your information and responses will not be shared or disclosed with anyone else outside of the research team. Your confidentiality and privacy are guaranteed. Your participation in an interview is absolutely voluntary. Thus, you will have the freedom to withdraw from the interview at any time.

What are the benefits?

This study will contribute to a better understanding of how the existing digital banking facilities, enable and impede rural individuals to achieve their diverse life goals. Also, this research will offer insights into the role of agencies and institutions that oversee financial inclusion initiatives, technological infrastructure, and social and economic development of rural communities; and how these regulatory bodies address rural people's goals and interests. This study will allow the primary researcher to complete his degree of Doctorate of Philosophy (PhD) in Information Systems successfully. Moreover, the research team can publish the research findings in the reputed academic journals.

How will my privacy be protected?

Your information and responses will not be shared with anyone else outside of this research team (primary researcher and research supervisors). Your confidentiality will be maintained, and only the research team will have access to your information. The collected data will be stored securely within the premises of Auckland University of Technology, New Zealand. All the data will be destroyed after a period of six years.

What are the costs of participating in this research?

The only cost of participating in the interview is your time – not exceeding more than two hours, which is much appreciated. Furthermore, you may be asked for a follow-up interview (not more than 30 minutes) in case the primary researcher requires any further input on questions discussed during initial interview.

What opportunity do I have to consider this invitation?

You will have two weeks to go through and sign the consent form to participate in this study.

Will I receive feedback on the results of this research?

Yes, you are welcome to contact me on email if you wish to receive a summary of the research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Antonio Díaz Andrade, antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz*, (+649) 921 9999 Ext. 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Himanshu Sharma (Primary Researcher) – himanshu.sharma@aut.ac.nz

Antonio Díaz Andrade (Primary Research Supervisor) - antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804

Ranjan Vaidya (Secondary Research Supervisor) - ranjan.vaidya@aut.ac.nz, (+649) 921 9999 Ext. 5169

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Bank Employees (Hindi Version)

प्रतिभागी सूचना पत्र

यह सूचना पत्र बैंकिंग अधिकारियों (Bank Officials) के लिए है।

दिनांक सूचना पत्र निर्मित: 23 **अक्टूबर** 2020

- **परियोजना का शीर्षक**

  डिजिटल बैंकिंग के लिए जीवन लक्ष्य प्राप्त करना: भारत में ग्रामीण व्यक्तियों के अनुभवों का विश्लेषण

- **निमंत्रण**

  मैं हिमांशु शर्मा हूं। मैं न्यूज़ीलैंड के ऑकलैंड विश्वविद्यालय (AUT) में सूचना प्रणाली में डॉक्टरेट ऑफ फिलॉसफी (पीएचडी) की डिग्री के लिए अध्ययन कर रहा हूं। प्राथमिक शोधकर्ता के रूप में, मैं आपको अपने वैज्ञानिक अनुसंधान के डेटा-संग्रह चरण के लिए आमने-सामने साक्षात्कार में भाग लेने के लिए आमंत्रित करना चाहूंगा, जो कि मेरी पीएचडी डिग्री के लिए आवश्यकता का एक अनिवार्य हिस्सा है। आपकी भागीदारी स्वेच्छिक है, और आप डेटा संग्रह के पूरा होने से पहले किसी भी समय वापस ले सकते हैं।

- **इस शोध का उद्देश्य क्या है?**

  इस अध्ययन का उद्देश्य ग्रामीण व्यक्तियों के जीवन में डिजिटल बैंकिंग की भूमिका की जांच करना है, और विभिन्न जीवन लक्ष्यों को प्राप्त करने के लिए वे डिजिटल बैंकिंग का उपयोग कैसे करते हैं। डिजिटल बैंकिंग के उदाहरणों में मोबाइल बैंकिंग, इंटरनेट बैंकिंग और स्वचालित टेलर मशीन (एटीएम) बैंकिंग शामिल हैं। इस अध्ययन के अनुभवजन्य निष्कर्षों का इस्तेमाल शैक्षिक प्रकाशनों और प्रस्तुतियों के लिए किया जाएगा।

- **मेरी पहचान कैसे की गई और मुझे इस शोध में भाग लेने के लिए क्यों आमंत्रित किया जा रहा है?**

  मैंने इस शोध के बारे में शाखा प्रमुख को सूचित किया है और इस सूचना पत्र को बैंक कर्मचारियों के साथ उनके विचार और भागीदारी के लिए साझा करने का अनुरोध किया है। डिजिटल बैंकिंग प्रदाताओं के रूप में बैंकिंग संस्थान, वित्तीय समावेशन (financial inclusion) में महत्वपूर्ण भूमिका निभाते हैं। वर्तमान में उत्तर प्रदेश राज्य में स्थित ग्रामीण बैंकों में कार्यरत बैंक कर्मचारियों (यानी शाखा प्रबंधक, सहायक शाखा प्रबंधक और कनिष्ठ अधिकारी) को ग्रामीण लोगों के लिए मौजूदा डिजिटल बैंकिंग सुविधाओं से संबंधित अपनी अंतर्दृष्टि साझा करने के लिए आमंत्रित किया जाता है।

- **मैं इस शोध में भाग लेने के लिए कैसे सहमत हूं?**

  आपको इस शोध में भाग लेने के लिए अपनी स्वीकृति का संकेत देते हुए सहमति पत्र (consent form) पर हस्ताक्षर करने की आवश्यकता होगी। सहमति प्रपत्र प्राथमिक शोधकर्ता (हिमांशु शर्मा) द्वारा प्रदान किया जाएगा। इच्छुक प्रतिभागी प्राथमिक शोधकर्ता से ईमेल (himanshu.sharma@aut.ac.nz) या मोबाइल नंबर (+91 9997864134) पर सहमति पत्र प्राप्त करने के लिए संपर्क कर सकते हैं।

  इस शोध में आपकी भागीदारी स्वेच्छिक है (यह आपकी पसंद है) और चाहे आप भाग लें या न चुनें, इससे न तो आपको कोई फायदा होगा और न ही नुकसान। आप किसी भी समय अध्ययन से हट सकते हैं। यदि आप अध्ययन से हटना चुनते हैं, तो आपको किसी भी डेटा को चुनने के बीच विकल्प की पेशकश की जाएगी, जो कि आपके द्वारा हटाए गए या इसे उपयोग करने के लिए जारी रखने की अनुमति देने से संबंधित है। हालाँकि, एक बार निष्कर्षों का उत्पादन करने के बाद, आपके डेटा को हटाना संभव नहीं हो सकता है।

- **इस शोध में क्या होगा?**

  यदि आप इस अध्ययन में भाग लेने के इच्छुक हैं, तो आपको सहमति पत्र पर हस्ताक्षर करने की आवश्यकता होगी। फिर आपसे आमने-सामने साक्षात्कार (face-to-face interview) के लिए सुविधाजनक समय और स्थान के लिए पूछा जाएगा। साक्षात्कार सत्र के दौरान, आपसे डिजिटल बैंकिंग चैनलों और ग्रामीण लोगों को दी जाने वाली सेवाओं से संबंधित प्रश्न पूछे जाएंगे। प्रश्नों के कोई सही या गलत उत्तर नहीं हैं, और आप अपनी भावनाओं, विचारों और अनुभवों को व्यक्त करने के लिए स्वतंत्र हैं। साक्षात्कार के दौरान आपकी प्रतिक्रियाओं को ऑडियो-टेप रिकॉर्डर के साथ-साथ

फ़ील्ड नोटबुक (field notebook) का उपयोग करके रिकॉर्ड किया जाएगा। साक्षात्कार रिकॉर्डिंग का उपयोग अंग्रेजी में अनुवाद के लिए किया जाएगा, और प्राथमिक शोधकर्ता द्वारा विश्लेषण आपकी पहचान और साक्षात्कार के दौरान आपके द्वारा प्रदान की जाने वाली जानकारी गोपनीय रहेगी।

- **असुविधाएँ और जोखिम क्या हैं?**

  इस अध्ययन में प्रतिभागियों से उनके व्यक्तिगत अनुभवों, विचारों और डिजिटल बैंकिंग के उपयोग पर राय मांगी जाएगी। आपका नाम और पहचान भी गोपनीय रखी जाएगी, और केवल शोधबंध में छद्म शब्द (यदि आवश्यक हो) का उपयोग किया जाएगा। इसलिए, कोई असुविधा या जोखिम नहीं होगा।

- **इन असुविधाओं और जोखिमों को कैसे कम किया जाएगा?**

  आपकी जानकारी और प्रतिक्रियाओं को अनुसंधान टीम के बाहर किसी और के साथ साझा या प्रकट नहीं किया जाएगा। आपकी गोपनीयता और गोपनीयता की गारंटी है। एक साक्षात्कार में आपकी भागीदारी बिल्कुल स्वैच्छिक है। इस प्रकार, आपको किसी भी समय साक्षात्कार से हटने की स्वतंत्रता होगी।

- **क्या लाभ हैं?**

  यह अध्ययन इस बात की बेहतर समझ में योगदान देगा कि कैसे मौजूदा डिजिटल बैंकिंग सुविधाएं, ग्रामीण व्यक्तियों को उनके विविध जीवन लक्ष्यों को प्राप्त करने में सक्षम और बाधित करती हैं। इसके अलावा, यह शोध उन एजेंसियों और संस्थानों की भूमिका की पेशकश करेगा जो वित्तीय समावेशन की पहल, तकनीकी बुनियादी ढांचे और ग्रामीण समुदायों के सामाजिक और आर्थिक विकास की देखरेख करते हैं। यह अध्ययन प्राथमिक शोधकर्ता को सूचना प्रणाली में डॉक्टरेट ऑफ फिलॉसफी (पीएचडी) की अपनी डिग्री को सफलतापूर्वक पूरा करने की अनुमति देगा। इसके अलावा, अनुसंधान टीम प्रतिष्ठित शैक्षणिक पत्रिकाओं में शोध के निष्कर्षों को प्रकाशित कर सकती है।

- **मेरी गोपनीयता कैसे सुरक्षित रहेगी?**

  आपकी जानकारी और प्रतिक्रियाएं इस शोध टीम (प्राथमिक शोधकर्ता और अनुसंधान पर्यवेक्षकों) के बाहर किसी और के साथ साझा नहीं की जाएंगी। आपकी गोपनीयता को बनाए रखा जाएगा, और केवल अनुसंधान टीम को आपकी जानकारी तक पहुंच होगी। एकत्र जानकारी को न्यूजीलैंड के ऑकलैंड यूनिवर्सिटी ऑफ़ टेक्नोलॉजी के परिसर में सुरक्षित रूप से संग्रहीत किया जाएगा। सभी आधार-सामग्री छह साल की अवधि के बाद नष्ट हो जाएंगे।

- **इस शोध में भाग लेने की लागत क्या है?**

  साक्षात्कार में भाग लेने का एकमात्र खर्च आपका समय (लगभग तीस मिनट से दो घंटे) है - जिसकी बहुत सराहना की जाती है। इसके अलावा, प्रारंभिक साक्षात्कार के दौरान चर्चा किए गए प्रश्नों पर प्राथमिक शोधकर्ता को किसी अन्य इनपुट की आवश्यकता होती है, तो आपको एक अनुवर्ती साक्षात्कार (30 मिनट से अधिक नहीं) के लिए कहा जा सकता है।

- **मुझे इस आमंत्रण पर विचार करने का क्या अवसर मिला?**

  इस अध्ययन में भाग लेने के लिए आपके पास सहमति पत्र पर हस्ताक्षर करने के लिए दो सप्ताह का समय होगा।

- **क्या मुझे इस शोध के परिणामों पर प्रतिक्रिया मिलेगी?**

  हां, यदि आप शोध निष्कर्षों का सारांश प्राप्त करना चाहते हैं, तो ईमेल पर मुझसे संपर्क करने का स्वागत है।

- **अगर मुझे इस शोध के बारे में चिंता है तो मैं क्या करूं?**

  इस परियोजना की प्रकृति के बारे में किसी भी तरह की चिंताओं को परियोजना पर्यवेक्षक, प्रोफेसर एंटोनियो डिआज एंड्रेड (Professor Antonio Díaz Andrade), को सूचित किया जाना चाहिए। antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804. शोध के संचालन से संबंधित चिंताओं को AUTEC के कार्यकारी सचिव को सूचित किया जाना चाहिए, ethics@aut.ac.nz, (+649) 921 9999 Ext. 6038।

- **इस शोध के बारे में और जानकारी के लिए मैं किससे संपर्क करूं?**

  कृपया इस सूचना पत्र और अपने भविष्य के संदर्भ के लिए सहमति फॉर्म की एक प्रति रखें। आप निम्नानुसार अनुसंधान टीम से संपर्क करने में सक्षम हैं:

  शोधकर्ता संपर्क विवरण: हिमांशु शर्मा (प्राथमिक शोधकर्ता) - himanshu.sharma@aut.ac.nz

  एंटोनियो डिआज़ एंड्रेड (प्राथमिक अनुसंधान पर्यवेक्षक) - antonio.diaz@aut.ac.nz, (+649) 921 9999 Ext. 5804

  रंजन वैद्य (माध्यमिक अनुसंधान पर्यवेक्षक) - ranjan.vaidya@aut.ac.nz, (+649) 921 9999 Ext. 5169

ऑकलैंड यूनिवर्सिटी ऑफ टेक्नोलॉजी एथिक्स कमेटी (आचार समिति) द्वारा अनुमोदित 18 May 2021 अंतिम नैतिकता की मंजूरी दी गई थी, संदर्भ संख्या 20/386

Appendix C – Interview Consent Forms (English and Hindi versions)

English Version

Consent Form

Project title: ***Digital Banking for Achieving Life Goals: Analysing Experiences of Rural Individuals in India***

Project Supervisor: ***Professor Antonio Díaz Andrade***

Researcher: ***Himanshu Sharma***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated _____.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I understand the COVID-19 virus has a long incubation time during which the virus carriers may not exhibit symptoms and still be highly contagious. I am aware that I may get a COVID-19 infection during or after my participation in this research. It is my responsibility to take all necessary precautions (e.g. 2-metre social distancing, wear a face-mask, use of hand sanitisers) during the interview session.
- ○ In case I get the COVID-19 symptoms or found a positive test result within 14 days of the interview session, I will inform the primary researcher at the earliest. Given the current nature of the COVID-19 virus, it is impossible to determine who has it. I will not at all hold the primary researcher accountable for my COVID-19 infection.
- ○ I confirm that I am not presenting any of the following symptoms of COVID-19 listed below:
    - Fever
    - Shortness of Breath
    - Loss of Sense of Taste or Smell
    - Dry Cough
    - Runny Nose
    - Sore Throat
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes ○ No ○

Participant's signature: .....

Participant's name: .....

Participant's Contact Details (if appropriate): .....

.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Note: The Participant should retain a copy of this form.

Hindi Version

सहमति पत्र

परियोजना का शीर्षक: *डिजिटल बैंकिंग के लिए जीवन लक्ष्य प्राप्त करना: भारत में ग्रामीण व्यक्तियों के अनुभवों का विश्लेषण*

परियोजना पर्यवेक्षक: *प्रोफेसर एंटोनियो डिआज एंड्रेड*

शोधकर्ता: *हिमांशु शर्मा*

- ○ सूचना पत्रक में इस शोध परियोजना के बारे में दी गई जानकारी को मैंने पढ़ा और समझा है दिनांक ___/___/_____.
- ○ मुझे सवाल पूछने और उनका जवाब देने का अवसर मिला है।
- ○ मैं समझता हूँ कि इंटरव्यू के दौरान नोट्स लिए जाएंगे और यह भी कि वे ऑडियो-टेप किए गए और ट्रांसक्रोड किए जाएंगे।
- ○ मैं समझता हूं कि इस अध्ययन में भाग लेना स्वेच्छिक (मेरी पसंद) है और मैं किसी भी तरह से वंचित किए बिना किसी भी समय अध्ययन से हट सकता हूं।
- ○ मैं समझता हूं कि यदि मैं अध्ययन से हटता हूं तो मुझे किसी भी डेटा के बीच विकल्प की पेशकश की जाएगी जो कि मेरे द्वारा निकाले गए या अनुमति के रूप में पहचाने जाने योग्य हैइसे इस्तेमाल करने के लिए जारी रखने के लिए आईएनजी। हालांकि, एक बार निष्कर्षों का उत्पादन करने के बाद, मेरे डेटा को हटाना संभव नहीं हो सकता है।
- ○ मैं समझता हूं कि COVID-19 वायरस का एक लंबा ऊष्मायन समय है, जिसके दौरान वायरस वाहक लक्षण प्रदर्शित नहीं कर सकते हैं और फिर भी अत्यधिक संक्रामक हो सकते हैं। मुझे पता है कि इस शोध में मेरी भागीदारी के दौरान या बाद में मुझे COVID -19 संक्रमण हो सकता है। इंटरव्यू सेशन के दौरान सभी आवश्यक सावधानियां (जैसे 2-मीटर सोशल डिस्टेंसिंग, फेस-मास्क पहनना, हैंड सैनिटाइजर का इस्तेमाल) करना मेरी जिम्मेदारी है।
- ○ यदि मुझे COVID-19 लक्षण मिलते हैं या साक्षात्कार सत्र के 14 दिनों के भीतर एक सकारात्मक परीक्षा परिणाम मिलता है, तो मैं प्राथमिक शोधकर्ता को जल्द से जल्द सूचित करूंगा। COVID-19 वायरस की वर्तमान प्रकृति को देखते हुए, यह निर्धारित करना असंभव है कि यह किसके पास है। मैं अपने COVID-19 संक्रमण के लिए प्राथमिक शोधकर्ता को जिम्मेदार नहीं ठहराऊंगा।
- ○ मैं पुष्टि करता हूं कि मैं नीचे सूचीबद्ध COVID-19 के किसी भी लक्षण को प्रस्तुत नहीं कर रहा हूं:
    - बुखार
    - साँसों की कमी
    - गंध और स्वाद का पता नहीं चलना
    - सूखी खाँसी
    - बहती नाक
    - गले में खराश
- ○ मैं इस शोध में भाग लेने के लिए सहमत हूं।
- ○ मैं एक प्राप्त करना चाहते हैं शोध निष्कर्षों का सारांश (कृपया एक टिक करें): हाँ ○ नहीं ○

भागी का नाम: ..... प्रतिभागी के हस्ताक्षर: .....

प्रतिभागी का संपर्क विवरण (यदि उपयुक्त हो):

.....

तारीख ____/____/_____

ऑकलैंड यूनिवर्सिटी ऑफ टेक्नोलॉजी एथिक्स कमेटी (आचार समिति) द्वारा अनुमोदित 18 May 2021 अंतिम नैतिकता की मंजूरी दी गई थी, संदर्भ संख्या 20/386

नोट: प्रतिभागी को इस फॉर्म की एक प्रति रखनी चाहिए।

Appendix D – Researcher Safety Protocol

AUCKLAND UNIVERSITY OF TECHNOLOGY ETHICS COMMITTEE (AUTEC)

Researcher Safety Protocol

Project title and brief description:

Title: Digital Banking for Achieving Life Goals: Analysing Experiences of Rural Individuals in India

Brief description: This study aims to examine the use of digital banking in the context of rural people's economic opportunities and their life functionings in India. The target informants for this study belong to the villages of two different districts in Uttar Pradesh state in India. These informants include digital banking users (i.e. rural individuals) and digital banking providers (i.e. bank officials and business correspondents) serving for the rural banks located in two districts. While rural individuals will allow collecting information about their digital banking experiences and practices, digital banking providers will help in obtaining insights related to the existing digital banking environment in rural areas.

Applicant

Professor Antonio Diaz Andrade
Department of Business Information Systems, Faculty of Business, Economics and Law
Email: antonio.diaz@aut.ac.nz
Contact number: +64 9 921-9999 – ext: 5804

Primary Researcher

Himanshu Sharma
PhD candidate
Department of Business Information Systems, Faculty of Business, Economics and Law
Email: himanshu.sharma@aut.ac.nz
Contact number (NZ): +64 2040177818
Contact number (IND): +91 9997864134

Where is the research being undertaken?

- ***What current travel warnings are in effect in the area in which the research will take place?***
  At present, there are no travel constraints in Uttar Pradesh state in India. However, the primary researcher will take all necessary precautions (e.g. 2-metre social distancing, wear a face-mask, use of hand sanitisers) during the field activities.

- ***At whose property will the research be undertaken?***
  The choice of interview site (e.g. farm, home, workplace) will be first discussed with the potential informants and decided accordingly as per the convenience of the participant.

- ***Who is likely to be present at the research location?***
  Researcher and participant.

- ***What access permissions are needed to undertake the research at the chosen location?***
  Since the researcher is familiar with the social and cultural settings of the potential research sites, formal access permissions will not be needed.

- ***Where is it safe to use private cars and leave them in the area?***
  The primary researcher will use his private car to travel to these sites. The potential sites are safe in terms of parking and leaving private vehicles.

- ***What local rendezvous or contact points are available for researchers?***
  The primary researcher has family relatives residing in these villages.

Who will be collecting the data and interacting with participants?

The primary researcher will be collecting the data and interacting with potential participants.

How familiar is the researcher with the social or cultural context of the research ?

The primary researcher is originally from the Uttar Pradesh state in India, and belong to a similar cultural and ethnic background as the participants. He knows well the local language and social and cultural context of the potential informants.

How safe are the activities in which the researcher is taking part?

This research involves face-to-face interaction with potential participants. Also, the primary researcher is familiar with the research settings. Therefore, the data collection activities are safe for the researcher.

What level of access to support is available?

The primary researcher will use the assistance/support (if required) from his rural relatives or local acquaintances who are the residents of the potential research sites.

What emergency plans are in place? Who can help?

- ***What training or support is needed and how will it be accessed?***
  Given the familiarity of the primary research with the potential participants and their ethnic background, no prior training is required.

- ***How have significant local actors, such as statutory and community organisations been contacted?***
  Given the nature of this research, contact with significant local actors is not required.

- ***Who has been in touch with potential participants and what advice have they given?***
  Given the nature of this research, the primary researcher will establish contact with the potential participants through his rural acquaintances. See section B.12 and C.3.5.1 in ethics application.

- ***Who else is aware of the researcher's itinerary and research schedule?***
  At a personal level, family members (i.e. parents, wife, and rural relatives) of the primary researcher.
  At a professional level, supervisors of the primary researcher.

- ***How will the researcher keep key support people informed of what is happening?***
  The primary researcher will regularly update key support people (i.e. parents, wife, rural relatives, and research supervisors) about his location, stay, and progress through emails, personal contacts and telephone.

- ***How will key support people react if the agreed contact protocols are not followed?***
  Key support people will establish contact with the primary researcher regularly to ensure that the primary researcher is following safety protocol.

- ***How will the researcher liaise with the key support people before and after each interview?***
  The primary researcher will inform key support people through emails or telephone communication before and after each interview.

- ***What will the key support people do if they cannot contact the researcher after an interview?***
  In case there is no contact with the primary researcher after an interview, key support people (i.e. research supervisors) will establish contact with the primary researcher's parents or wife through email or telephone (whichever is suitable). Also, key support people (i.e. parents and wife of the primary researcher) will contact the rural relatives if the primary researcher will not communicate after an interview.

- ***What will be the escalation plan (i.e. those actions that will be taken if the researcher cannot be contacted via their parents/rural relatives)?***
  If the parents or rural relatives are unable to establish contact with the primary researcher during his fieldwork, local police will be contacted (if needed).

Don't forget to update your safety protocol regularly:

The next review will take place at the beginning of fieldwork and periodic intervals after the commencement of the fieldwork.

Appendix E – Observation Protocol

Observation Protocol

As this study adopts a holistic and unstructured observation technique along with other data collection methods, potential participants will not be informed or recruited before conducting the observation. To respect participants' privacy and confidentiality, the primary researcher will perform his observation outside the bank premises such as observing the traffic of customers visiting the bank branch or automated teller machine.

To observe, the primary researcher will accommodate himself at an appropriate place outside the bank's or ATM's premises. The primary researcher will ensure that his presence and observation will not hinder customers' banking activities.

Field notes will be used to record observational data.

The primary researcher will ensure that pseudonyms will be used to protect participants' identity.

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Appendix F – Indicative Questions for Rural Residents and Bank Employees

Rural Residents

Indicative questions for semi-structured interviews of rural individuals

- Briefly tell me about yourself (e.g. age, job nature/experience, family, education).
  मुझे अपने बारे में संक्षेप में बताएं (जैसे उम्र, नौकरी/कार्य की प्रकृति/अनुभव, परिवार, शिक्षा)।
- What do you know about digital banking channels and services (e.g. services offered by banks)?
  आप डिजिटल (कम्प्यूटर/मोबाइल) बैंकिंग प्रणाली और सेवाओं (जैसे बैंकों द्वारा दी जाने वाली सेवाएं) के बारे में क्या जानते हैं?
- When did you start (or stop) using digital banking?
  आपने डिजिटल बैंकिंग का उपयोग कब शुरू (या बंद) किया?
- What made you start (or stop) using digital banking?
  किस कारण से आपने डिजिटल बैंकिंग का उपयोग शुरू (या बंद) किया?
- Do you receive any information awareness about banking services or products from the providers (Banks or BCs)?
  क्या आप बैंकों या बीसी से बैंकिंग सेवाओं या उत्पादों के बारे में कोई जानकारी प्राप्त करते हैं?
- Can you tell me about your digital banking use (e.g. channels, services, transaction frequency, bank visits)?
  क्या आप मुझे अपने डिजिटल बैंकिंग उपयोग (जैसे चैनल, सेवाएं, लेन-देन आवृत्ति, बैंक विज़िट) के बारे में बता सकते हैं?|
- What is it about the digital banking that you like/do not like (e.g. ease of use, affordability, safety, transparency)?
  डिजिटल बैंकिंग के बारे में ऐसा क्या है जो आपको पसंद/पसंद नहीं है (उदा. उपयोग में आसानी, सामर्थ्य, सुरक्षा, पारदर्शिता)?
- How do you see as the benefit (or disadvantage) of having digital banking in your life (e.g. enable you to access finances for the business, education, healthcare, social/cultural events)?
  आप अपने जीवन में डिजिटल बैंकिंग होने के लाभ (या हानि) के रूप में कैसे देखते हैं (उदाहरण के लिए आपको व्यवसाय, शिक्षा, स्वास्थ्य देखभाल, सामाजिक/सांस्कृतिक आयोजनों के लिए वित्त का उपयोग करने में सक्षम बनाता है)?
- Can you imagine your life without digital banking?
  क्या आप डिजिटल बैंकिंग के बिना अपने जीवन की कल्पना कर सकते हैं?
- Have you ever faced any challenge with digital banking use? How did you respond to them?
  क्या आपने कभी डिजिटल बैंकिंग के उपयोग में किसी चुनौती का सामना किया है? और आपने उन् चुनौतियों का उत्तर कैसे दिया?
- In your opinion, which banking institution (public or private) should be prioritised for accessing digital banking services? Any particular reason (e.g. quality of services, variety of information, financial education)?
  आपकी राय में, डिजिटल बैंकिंग सेवाओं तक पहुँचने के लिए किस बैंकिंग संस्थान (सार्वजनिक या निजी) को प्राथमिकता दी जानी चाहिए? कोई विशेष कारण (जैसे सेवाओं की गुणवत्ता, सूचना की विविधता, वित्तीय शिक्षा)?
- Do you want to share anything else about your digital banking experience?
  क्या आप अपने डिजिटल बैंकिंग अनुभव के बारे में कुछ और साझा करना चाहते हैं?

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Bank Employees

Indicative questions for semi-structured interviews of digital banking providers (Banking Officials)

- Briefly tell me about yourself (e.g. nature of the job, work experience)
  मुझे अपने बारे में संक्षेप में बताएं (जैसे उम्र, नौकरी/कार्य की प्रकृति/अनुभव
- What digital banking channels and services are offered by your bank?
  आपका बैंक कौन से डिजिटल बैंकिंग चैनल और सेवाएं प्रदान करता है?
- Do you face any challenges (e.g. infrastructure, policies) with existing digital banking channels and services? If yes, how do you respond to these challenges?
  क्या आप मौजूदा डिजिटल बैंकिंग चैनलों और सेवाओं के साथ किसी चुनौती (जैसे बुनियादी ढांचा, नीतियां) का सामना करते हैं? यदि हाँ, तो आप इन चुनौतियों का सामना कैसे करते हैं?
- What do you see as the benefit (or disadvantage) of digital banking for your institution?
  आप अपने संस्थान के लिए डिजिटल बैंकिंग के लाभ (या हानि) के रूप में क्या देखते हैं?
- What do you see as the benefit (or disadvantage) of digital banking for rural consumers?
  आप ग्रामीण उपभोक्ताओं के लिए डिजिटल बैंकिंग के लाभ (या हानि) के रूप में क्या देखते हैं?
- How often rural people visit your branch?
  ग्रामीण लोग आपकी शाखा में कितनी बार आते हैं?
- What banking services do rural people perform at your branch?
  आपकी शाखा में ग्रामीण लोग कौन-सी बैंकिंग सेवाएं करते हैं?
- Are there any financial service(s) not offered by your channel but demanded by rural consumers?
  क्या आपके चैनल द्वारा कोई वित्तीय सेवा प्रदान नहीं की गई है बल्कि ग्रामीण उपभोक्ताओं द्वारा मांग की गई है?
- Do you offer/conduct any awareness program to rural people? If yes, what mode of delivery?
  क्या आप ग्रामीण लोगों के लिए कोई जागरूकता कार्यक्रम पेश करते हैं/आयोजित करते हैं? यदि हां, तो डिलीवरी का कौन सा तरीका?
- Do rural people participate in these awareness programs?
  क्या ग्रामीण लोग इन जागरुकता कार्यक्रमों में भाग लेते हैं?
- Do you want to share anything else about your experience with digital banking services to rural people?
  क्या आप ग्रामीण लोगों को डिजिटल बैंकिंग सेवाओं के साथ अपने अनुभव के बारे में कुछ और साझा करना चाहते हैं?

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Appendix G – Photography Protocol

Photography Protocol

- This study adopts data collection through still photographs to capture the research environment and activities of the potential participants in their natural settings. The primary researcher will use this protocol while using this data collection technique during fieldwork.

- The primary researcher will take the photos of public places (e.g. bank branch from outside, automated teller machine located near rural areas).

- The primary researcher will also take the photos of activities occurring in the public domain, for example, individuals visiting automated teller machines located near villages)

- The primary researcher will obtain the formal consent from the participants before taking a photograph visualising any private information (e.g. devices being used by the participants to perform their banking services).

- The primary researcher will protect participants' privacy and confidentiality by ensuring that the photograph does not reveal any confidential information (e.g. names, numbers, brands, and screen displays) about the participant or the object.

- To ensure participant's privacy and confidentiality during photography, the primary researcher will ensure not to capture the image:
  - If a place is showing any sign of forbidding photography.
  - If the subject or owner of the property is not comfortable being photographed.

- The primary researcher will ensure that any photographs (of bank customers) taken by the primary researcher during his fieldwork will not identify them nor any content of the ATM, debit card and credit card they are using.

Date:

Approved by the Auckland University of Technology Ethics Committee on 18 May 2021 on which the final approval was granted AUTEC Reference number 20/386

Appendix H – List of Initial Codes Assigned to Data Corpus at First-Cycle Coding

1. Agricultural payments coming directly into the bank account
2. Alert messages from bank enable to pay loan premiums online
3. Alertness enable to protect from cyber threats
4. ATM is perceived more convenient than cash
5. ATM use for cash withdrawal
6. Awareness about DFS
7. Bank branch visits for big transactions
8. Bank employee motivate rural consumers by spreading DFS awareness
9. Bank employees asking consumer to approach broker for loan application
10. Bank is not helping rural consumers (i.e. victims of DFS frauds)
11. Banks are for powerful people
12. Benefits perceived from information received from financial services providers
13. Businesses prefer cash transaction to avoid entries in account books
14. Busy routine of female consumers at home keeping them away from DFS use
15. Cash transaction for giving money credit
16. Challenges in traditional banking
17. Comparing working style of banks in urban and rural areas
18. Comparison between third-party DFS app and Bank's DFS app
19. DFS saves time
20. Literacy levels
21. Types of DFS channels
22. DFS challenges
23. Financial services offered by private and public sector banks
24. DFS usage experience
25. DFS decreased bank visits
26. Fears for DFS
27. Types of transactions being done through third-party DFS applications
28. Types of financial transactions
29. Awareness through digital medium
30. Information received from financial services providers
31. DFS is easy to use financial technology
32. Culture of helping others
33. Life is perceived difficult without DFS
34. Use of third-party DFS applications
35. People provide instant financial help to their friends and relatives
36. Female members of household have no interest in financial transactions
37. Lack of awareness program by rural banks
38. Multiple sources of income
39. DFS allow individuals to avoid traveling to the bank branch for daily financial needs
40. DFS provide safety
41. DFS to acquire information about financial services and products
42. DFS use by male members of the household
43. Limited financial knowledge
44. Types of transactions performed by bank-provided DFS application
45. Comparison between third-party DFS app and Bank's DFS app
46. DFS safety awareness
47. Exchanging financial information
48. Female members do not make financial transaction despite having access to DFS
49. Learning about DFS applications through friends or relatives
50. Learning to protect money through others' negative experiences
51. Online cashbacks and discount coupons are motivating DFS use
52. Individuals prefers other people (relatives or friends) in social network to meet financial needs
53. Individuals find DFS useful and secure tool in his life
54. Taking financial help from friends or relatives to meet urgent needs
55. Types of DFS transactions
56. ATM use for cash withdrawal
57. Bank employee motivate individuals by spreading DFS awareness
58. Challenges in traditional banking
59. Demonetisation affect on individuals
60. DFS is allowing rural users to keep track of their financial transactions
61. DFS makes rural user's lives easy
62. DFS use for small or daily financial requirements
63. Digital literacy is allowing rural users to deal with fraudsters
64. Government's initiative energised DFS use
65. Lack of DFS skills
66. Mobile SMSs to spread cyber security awareness
67. Negative stories affecting DFS use
68. Older people lack trust in DFS
69. Older people trust traditional banking
70. Public sector bank is taking initiative to spread DFS awareness
71. Individuals is getting DFS awareness through friends or relatives
72. Individuals perceives cash transactions risky
73. Individuals do not approach formal banking institution to avoid transaction complexities
74. Rural individuals living in close social network and help each other financially and non-financially
75. Third-party DFS applications for daily requirements
76. Uninterrupted mobile network connectivity
77. Use of multiple DFS channels
78. Younger people are more inclined towards DFS
79. Agricultural payments coming directly into the bank account
80. Bank branch visits for big transactions
81. DFS enable individuals to access financial services during emergencies

82. DFS enabling working individuals to meet financial needs
83. Educated individuals is aware about financial schemes to manage funds
84. Education among rural children
85. Farmer is ready to sell his land to arrange money for her daughter's marriage
86. Formal education is perceived important for DFS
87. Lack of digital literacy among old rural members constraining DFS use
88. Language constraint to understand financial information
89. Motivating each other to use DFS
90. Older individuals prefer face-to-face banking rather than digital banking
91. Individuals is learning DFS application use through relatives
92. Individuals has to meet bank personnel to get inquire about financial products
93. Individuals invest in financial schemes offered by regularised financial institution
94. Individuals invest income in buying life insurance policy
95. Individuals is getting DFS awareness through social media and television medium
96. Individuals perceived DFS affordable
97. Individuals perceives DFS as part of day-to-day life
98. Individuals perceives digital payments more convenient and less-risky than cash
99. Individuals perceives digital transactions useful in COVID-19 pandemic situation
100. Individuals perceives third-party application simple and easy
101. Individuals prefers third-party DFS application for personal transactions
102. Individuals prefers to borrow money from local money lenders rather than banks
103. Individuals are obliged to return their credits to friends or money lenders
104. Share incidents (usually negative) with other villagers
105. Small business owner is using DFS for business activities
106. Small business owner prefers bank account in public sector bank
107. Types of financial commitment or functionality of rural people
108. Types of rural financial requirements
109. Using digital payment apps affecting rural individual's savings
110. Younger individuals is using DFS on behalf of his older family member (e.g. father)
111. Absence of health insurance creating trouble for villagers
112. Awareness about DFS enabling individuals to use them
113. Comparing working style of banks in urban and rural areas
114. Corruption in bank loan application process
115. DFS application enables individuals to save transaction charges
116. DFS enabled individuals to meet financial needs during demonetisation
117. DFS enabling small business owners' ma king payments to suppliers without physical movement
118. DFS enabling small-business owner to save time and spend that time to do personal and business activities
119. DFS is enabling old-aged pensioner to monitor his bank account transactions
120. DFS save time and hassle of a farmer for making agricultural payments
121. DFS supporting individuals meeting their day-to-day financial requirements
122. DFS use frequency among rural users
123. DFS-enabled agri-payments enabling farmer to utilise his time in personal and business activities
124. Digital skill is perceived as important factor
125. Educated rural people are more inclined towards DFS
126. Face-to-Face banking is time consuming
127. Female dependence on spouse for financial transactions
128. Female helps her husband in his business
129. Financial awareness through formal banking institution
130. Income level affecting DFS use
131. Informal financial practices
132. Lack of accountability by third-party DFS providers
133. Lack of awareness initiative from banking institutions
134. Lack of confidence among older rural members for DFS use
135. Lack of DFS skills increases chances of being robbed by fraudsters
136. Lack of digital skills constrains DFS use
137. Lack of financial awareness among individuals
138. Lack of financial knowledge investment in formal financial products
139. Less educated smartphone users are learning DFS through younger members
140. Low participation in formal banking
141. Monetary benefit of using DFS
142. Older people prefers to visit bank branch for financial transactions
143. Older people trusting young members of their family to perform financial transactions
144. Risk of losing money constraining DFS use
145. Individuals approach the bank for loan to meet agricultural requirements
146. Individuals not dependent on DFS to meet his financial requirement
147. Individuals is taking help of their relative to learn digital payment application use
148. Individuals prefers to invest money into a local committee system
149. Individuals relies on other DFS users to perform online transactions
150. Individuals wants his children to get educated and not become a farmer

151. Individuals is using DFS to support academic and job skills
152. Individuals (younger people) using DFS to enrol in online courses
153. Individuals comparing between Bank's investment (e.g. FD) scheme and local committee system
154. Individuals getting financial awareness through friends
155. Individuals invest in a committee because it is flexible and requires no paper work
156. Individuals investing in banking products to enhance income
157. Individuals is getting finance-related information on mobile phones
158. Individuals is impatient
159. Individuals is investing savings in bank's financial product (e.g. FDs)
160. Individuals is receiving cashback while using third-party DFS
161. Individuals is taking help of a friend to deal with DFS challenges
162. Individuals like third-party digital payment apps over bank's digital services (e.g. ATM)
163. Individuals perceives ATM simple and useful thing
164. Individuals perceives DFS as a symbol of modernity
165. Individuals perceives DFS more flexible than brick and mortar banking
166. Individuals perceives DFS playing good role in life
167. Individuals perceives DFS unsafe
168. Individuals perceives DFS useful in emergency situations
169. Individuals perceives social media (e.g. Whataspp) as better source of financial awareness
170. Individuals perceives traditional banking time consuming
171. Individuals prefers DFS (e.g. ATM) for small transactions
172. Individuals prefers face-to-face dealing for complex financial services
173. Individuals prefers to keep his income in bank's saving account
174. Individuals trust traditional banking because it involves physical presence
175. Rural people judge people by their behaviour not by their financial status
176. Rural users lacking confidence in performing digital financial transactions
177. Rural user's response to DFS related challenges
178. Salaried individuals gets bank loan easily as compared to non-salaries (e.g. farmer)
179. Self-employed to generate income
180. Shops in villages offering digital payment options
181. Small business owner prefers traditional banking and keeps hard copy of the business transaction
182. Tension or conflict between individuals and rural bank employee
183. Third-party MFS app is allowing individuals (visually disabled) to perform various types of transactions
184. Trust among rural residents enabling them to help each other in financial needs
185. Types of transactions being done by individuals at branch
186. Young rural people using more DFS than older rural people
187. Alert messages from Bank enabling individuals to pay online loan premiums on time
188. Alertness can help individuals to protect digital robberies
189. ATM is perceived more convenient than cash
190. DFS use among rural users
191. Consumers are being robbed by digital financial hackers
192. Businesses prefer cash transaction to avoid entries in account books
193. Busy routine of female consumers at home keeping them away from DFS use
194. Cash transaction for giving money credit
195. Casual farm labour prefers to get their wages in cash mode
196. Comparison between traditional money and digital money management by rural people
197. Competition among telecommunication companies in rural areas
198. Corruption in agricultural market
199. Cultural and social environments forcing rural individual to delete digital payment app
200. Demonetisation made people to use DFS
201. Despite low interest rate on KCC, farmers avail KCC hoping to get waiver on payment
202. DFS allowing individuals to become independent
203. DFS allowing individuals to make timely payments of loan
204. DFS allows users to monitor illegal transaction activity and take action
205. DFS challenges affecting business activities
206. DFS charges constraining DFS use
207. DFS do not allow individuals to meet types of financial requirements
208. DFS enable individuals to perform financial transactions without leaving the business premise
209. DFS enable individuals to access financial services on holidays or festive seasons
210. DFS enabling household members to learn about financial transactions of head of family
211. DFS enabling private sector employers to credit salaries directly into employee's bank account
212. DFS enabling individuals (e.g. small business owner) to pay loan instalments without leaving shop
213. DFS enabling individuals and his family members to receive information about financial transactions
214. DFS enabling individuals to utilise his time (that he used to spend in traditional banking) in other activities
215. DFS enabling individuals to receive immediate or quick transaction acknowledgement

216. DFS enabling rural resident (living outside village) to meet daily needs (e.g. buying grocery or medicine) of family members in village
217. DFS enabling visually disabled individuals to perform cashless financial transactions
218. DFS enabling young rural members to support older family members with financial transactions
219. DFS is allowing individuals (e.g. younger people) to earn money through third-party DFS use
220. DFS is allowing individuals to make agricultural transactions easy and safe
221. DFS is allowing rural users to know about financial products, services and risks
222. DFS is allowing rural users to manage multiple bank accounts
223. DFS is enabling consumers to perform financial transaction after banking hours
224. DFS is enabling individuals to get their agri-payments on time
225. DFS is enabling small business owners to expand business
226. DFS is helping individuals (small business owner) to increase sales and customer base
227. DFS is helping rural users to get instant transaction updates
228. DFS is helping small business owners to reduce credit shoppers
229. DFS is omnipresent
230. DFS is perceived useful for salaried or self-employed rural people
231. DFS is safe if know how to use it properly
232. DFS making business activities easier
233. DFS making individuals less dependent on cash transactions
234. DFS provide ease (comfort) of doing financial transactions
235. DFS reduces people's tension
236. DFS related challenges faced by small business owners
237. DFS use by small business owner affects credit shopping culture among rural customers
238. DFS use enabling individuals (visually disabled) to become less dependent on others (normal people)
239. DFS use enabling individuals to hold account in public bank despite low quality branch services
240. DFS use for daily household needs
241. Different methods of digital financial hackers scare consumer about DFS use
242. Digital financial frauds constraining DFS use among individuals
243. Digital India initiative is helping individuals (e.g. farmer) to get crop payment faster
244. Digital payment companies approaching rural business owners to opt for digital payment options
245. Digital payment provides convenience to both customer and business owner
246. Digital skills are important pre-requisite to avoid DFS risks
247. Digital skills enable illiterates to use third-party DFS
248. Digitally-spread financial awareness is difficult to understand
249. Educated individuals became victim of DFS hacking
250. Family circumstances and rural culture constraining rural female to take full-time job
251. Farmers are receiving agricultural income and social support payments through DFS
252. Female consumers ask male members about financial transactions done in their accounts
253. Female member (educated) of household is confident and knows how to access financial services
254. Female members in village are not inclined toward DFS use
255. Female members in village rarely go to the bank
256. Female individuals are not aware about the benefits of DFS
257. Female individuals share her income with her spouse
258. Financial expense cycle of a rural individual
259. Frequency of online transactions by individuals
260. Gender gap in DFS use among rural people
261. Government should educate people before implementing DFS
262. Government's digital initiative is motivating individuals (mainly younger generation) to learn digital skills
263. Government's marketing of digital initiative is enough to educate and spread awareness among rural people
264. Impact of demonetisation on small business owners in rural areas
265. Informal money lending system in the village affecting people's DFS and formal banking use
266. Information spreading through DFS is helpful to know about financial schemes
267. Lack of basic education constraining individuals to perform simple banking transactions independently
268. Lack of confidence among educated rural individuals constrain their DFS use
269. Lack of DFS training and guidance constraining DFS use
270. Lack of DFS training for older rural members
271. Lack of financial and DFS awareness among rural people provokes consumers to spend hours in the bank branch
272. Lack of financial pressure on female members affects their DFS use
273. Lack of or limited financial knowledge constrain individuals to file taxes and avail its benefits
274. Lack of safety majors in ATM counter
275. Lack of trust in private financial institutions constrain individuals to invest their money
276. Lack problem-solving attitude of bank employees constraining individuals to disinclined towards bank-provided DFS
277. Less educated individuals is not aware about financial schemes to manage funds
278. Life becomes busy without DFS
279. Limitations of DFS in rural areas
280. Limitations with third-party DFS
281. Loan application takes two weeks to get approved

282. Local money lender gives loan to honest consumers
283. Low-income employees prefer to take salary in cash mode
284. Male member of the household constrains the female member to involve in financial matters and access financial services
285. Male member of the household operates female member's bank account
286. Married rural female members find it challenging to pursue their education of their choice
287. Mishandling of finances by young members of family is creating lack of trust in DFS among older
288. Mobile application to aid visually disabled consumer to recognise currency
289. Monetary benefit motivating individuals to use digital payment apps
290. Money lender in village does not receive special attention
291. Money lender prefers to give loan in cash to avoid formal bank entries
292. Negative stories during demonetisation constrain individuals to open account in private sector bank
293. No paper work is required for loan deal between individuals and local money lender
294. Non-use of DFS allowing individuals to protect their confidential data and money from hackers
295. Old individuals (retired) are using their pension in household and farming expenses
296. Old-aged individuals do not take interest in learning digital skills
297. Older individuals do not require DFS
298. Older individuals is not inclined for bank investment after retirement
299. Older individuals visits BC points for financial transactions
300. Older individuals taking help of their young family members while using DFS
301. Older rural members prefer to take training on DFS use by formal trainers
302. Other's experiences are helping individuals to protect their money from digital hackers
303. Peers working in the same organisation motivating rural users towards DFS use
304. Physically challenged (complete blind) individuals working in banking sector
305. Previous digital knowledge is helping individuals with DFS use
306. Private banks visiting people at workplace to market products
307. Private sector bank is fast but expensive
308. Private sector employee do not care about mode of salary (cash or direct transfer)
309. Private sector employees are getting salary in private banks
310. Private sector employer in rural areas prefer to pay salary in cash
311. Proper knowledge of digital is perceived as significant aspect to DFS use and to avoid threat from fraudsters
312. Public sector banks are overloaded in rural areas
313. Reason for buying a smartphone
314. Rural banks are overcrowded with customers
315. Rural banks require to hire an employee to solve simple queries of individuals
316. Rural community lives in a strong social network and treat each other equally irrespective of financial status
317. Individuals (e.g. small business owner) feel unsafe while carrying cash in pocket
318. Individuals (e.g. small business owner) prefer DFS for transaction involving a huge amount
319. Individuals (e.g. small business owner) use his income in buying family insurance
320. Individuals depends on acknowledgement by bank employee to know the status of loan application
321. Individuals do not consider DFS as significant part of his life
322. Individuals feels happy without DFS
323. Individuals has more expenses than income
324. Individuals is approaching bank branch to receive loan money
325. Individuals is aware of risks related to informal money saving system
326. Individuals is facing challenges in farming activities
327. Individuals is having idea about DFS but not using these services
328. Individuals is not afraid to carry huge cash amount when accompanied by friends
329. Individuals is perceiving DFS not useful
330. Individuals is relying on either bank credit to meet financial needs
331. Individuals is taking assistance from relative to learn smartphone operations
332. Individuals perceives informal investment system more convenient than formal investments
333. Individuals prefers to spend savings on buying livestock rather investing in financial scheme
334. Individuals prefers to take loan amount in cash form
335. Individuals prefers to use cash for daily household needs
336. Individuals using government funds to support farming activities
337. Individuals (mainly younger people) prefer digital shopping
338. Individuals (non-farmer) learned DFS application operations through friends
339. Individuals (pensioner) does not use smartphone, uses feature phone
340. Individuals (pensioner) is not interested in digital banking
341. Individuals (pensioner) prefers to go to the bank for financial transactions
342. Individuals (pensioner)does not use DFS, prefers financial transactions in cash mode
343. Individuals (sale executive) is using mobile banking apps provided by banking institution
344. Individuals (small business owner) perceives DFS convenient to do business with suppliers

345. Individuals (small business owner) perceives money in digital application more protected
346. Individuals (visually disabled) explaining the process of making financial transaction
347. Individuals (visually disabled) has to translate debit card details into braille and memorise it
348. Individuals (visually disabled) is dependent on family member to make cash transactions
349. Individuals (visually disabled) is not using MFS app (provided by banking institutions
350. Individuals (visually disabled) is using DFS to provide financial support to relatives and friends
351. Individuals (visually disabled) perceive DFS application easy to use
352. Individuals (visually disabled) prefers to use DFS for huge amount transactions
353. Individuals (visually disabled) trusts others to perform online financial transactions using his credentials
354. Individuals (visually disabled) use DFS application for various needs
355. Individuals aware and invest in formal systematic investment schemes
356. Individuals believes that bank should set up awareness camp in village on regular basis
357. Individuals do not prefer to approach bank for loan
358. Individuals do not use DFS as all his financial requirements are being met by cash
359. Individuals do not use DFS despite knowing about them
360. Individuals does not remember whether he ever get financial awareness from the bank
361. Individuals facing corruption at branch level
362. Individuals feel life will be stopped without DFS
363. Individuals feels constrained to use DFS
364. Individuals finds digital loan application feature quicker and useful
365. Individuals fulfil financial document requirements only when it becomes necessary
366. Individuals gradually learns DFS use
367. Individuals has limited knowledge about DFS
368. Individuals has started using DFS since college days
369. Individuals has stopped using credit card
370. Individuals has to go to bank to clear doubts
371. Individuals hesitate to use ATM in spite of knowing its use
372. Individuals ignores financial information shared by banking institution
373. Individuals ignoring bank employee's suggestion for DFS use
374. Individuals is afraid of making complaint against corruption at bank branch
375. Individuals is compelled to approach broker for loan application
376. Individuals is engaged in farming activities as alternative source of income
377. Individuals is investing in banking products (FD) to meet social norms
378. Individuals is not dependent on one type of DFS
379. Individuals is paying children school fee online
380. Individuals is paying commission to broker to get loan approval on bank loan
381. Individuals is paying of higher interest rate on money borrowed informally
382. Individuals is spending income to meet different expenses
383. Individuals is taking help of family members to understand financial transaction SMS
384. Individuals is using bank's MFS app only for balance inquiry
385. Individuals is using DFS to meet daily financial needs
386. Individuals is using third-party DFS app to support agricultural needs
387. Individuals is using third-party DFS app to transfer money to friends and relatives
388. Individuals keeping some portion of household income in spouse's bank account
389. Individuals keeps some funds in savings account for emergencies
390. Individuals knows the significance of formal bank account
391. Individuals likes cashback schemes over vouchers offered by third-party apps
392. Individuals pays attention to messages received from financial services provider
393. Individuals perceives access to financial services as God
394. Individuals perceives brick-and-mortar banking challenging
395. Individuals perceives confidential information used by DFS is unsafe
396. Individuals perceives DFS as faster and easier way of performing financial transactions
397. Individuals perceives DFS as necessity
398. Individuals perceives DFS is convenient
399. Individuals perceives DFS is not completely safe and prone to get hacked
400. Individuals perceives DFS more affordable than traditional banking services
401. Individuals perceives DFS more cost effective than traditional or brick and mortar banking
402. Individuals perceives DFS use brings tension in life
403. Individuals perceives farming income insufficient to survive
404. Individuals perceives health insurance premium unaffordable
405. Individuals perceives his fear for DFS as protection shield to avoid financial threats
406. Individuals perceives lack of financial awareness program as a big problem in rural area
407. Individuals perceives local money lenders as last option to get financial help
408. Individuals perceives MONEY as important aspect to meet social needs (e.g. daughter's marriage)
409. Individuals perceives other person's nature (rather than socio-economic status) as important factor to offer help
410. Individuals perceives private bank's employees more respectful then public bank's employees

411. Individuals perceives rural bank employee non-serious about their roles
412. Individuals perceives school education expensive
413. Individuals perceives smartphone as a significant part of life
414. Individuals perceives traditional banking as a tension
415. Individuals perceives use of ATM useful in emergency situations
416. Individuals prefers ATM card for cash withdrawals
417. Individuals prefers Bank-provided DFS for financial transactions
418. Individuals prefers cash from money lender
419. Individuals prefers third-party app over bank's app for financial transactions
420. Individuals prefers to deposit kid's school fee by cash
421. Individuals prefers to take loan from money lender because it is a guaranteed loan
422. Individuals prefers to visit banks physically for transactions involving huge amount
423. Individuals prefers to visit either bank branch or BC point for deposits
424. Individuals received financial information on mobile phone
425. Individuals receiving Bank's messages on mobile phone about safe transactions
426. Individuals thinks that bank's FD system has constraints
427. Individuals thinks that he is not fully dependent on DFS
428. Individuals thinks that proper DFS training would enable them to save their time and money
429. Individuals thinks that public sector employees are lazy and receive more salary than private sector employees
430. Individuals uses DFS because others using them
431. Individuals uses mix of payment methods for agricultural needs
432. Individuals using other rural members DFS account or apps to meet their financial needs
433. Individuals wears simple outfits to avoid robbers' attention
434. Individuals (mainly older members) prefers to visit bank personally and ready spend hours inside the branch
435. Individuals (small business owners) prefers third-party DFS application for their business transactions
436. Individuals (small business owners) prefers third-party DFS more than bank's DFS for business-related transactions
437. Individuals are meeting their social requirements through different money sources
438. Individuals are receiving information about financial products and safety
439. Individuals are willing to get financial awareness
440. Individuals considers face-to-face banking more trustworthy when transaction type is complex
441. Individuals do not like to ask creditors directly to return money
442. Individuals faced challenges to receive crop payments
443. Individuals find DFS transparent
444. Individuals have multiple mobile phone connection as backup
445. Individuals' living conditions are motivating to use DFS to meet daily expenses
446. Individuals need banks to reach them personally and educate them
447. Individuals perceive bank's mobile financial application difficult to use
448. Individuals perceive cashless or digital transactions problematic
449. Individuals perceive DFS to enable them to reduce unnecessary expanses and accumulate money
450. Individuals perceives limited availability of ATM in rural areas challenging
451. Individuals prefers cash-based shopping
452. Individuals prefers third-party DFS apps because other members of community use the same apps
453. Individuals understand withdrawal and deposit messages
454. Individuals want to get DFS awareness
455. Rural culture constraining female member to become independent
456. Rural culture is constraining female member's participation in financial matters and access to financial services
457. Rural daily-wage workers prefer to receive wages in cash mode
458. Rural female doing a part-time job to contribute in household income
459. Rural female is doing part-time work to earn money for personal requirements
460. Rural female using her bank account to perform family business transactions
461. Rural females opened bank accounts to avail government schemes and loans
462. Rural individual is learning DFS use through others
463. Rural individual is not aware about DFS safety
464. Rural individual is taking help of other DFS users (friends) to enrol in online education course
465. Rural individual is using DFS channel (ATM) to pay medical treatment expenses
466. Rural is copying urban life styles
467. Rural members have lack of trust in private banks
468. Rural parents motivating their children to get education
469. Rural people do not invest due to lack of funds
470. Rural people get support (financial or non-financial) from each other
471. Rural people getting financial support from other rural member in emergencies
472. Rural people like to shop by cash despite the availability of digital payment option
473. Rural people motivate female members (e.g. daughter-n-law) to continue their education
474. Rural people sharing digital payment source with others to support them
475. Rural people show their social and economic status through marriages

476. Rural people use banking services because they find it risky or inconvenient to keep money in houses
477. Rural people's caste and income level are affecting children (mainly girls) education
478. Rural people's interest in digital payment apps is increasing rapidly
479. Rural users are inclined towards particular financial information
480. Small business owner do not prefer to take digital payment to avoid GST filing charges
481. Small business owner is facing loss due to credit-shopping practices
482. Small business owner is using cash and digital payment for business activity
483. Small businesses perceive DFS convenient, easy and profit raising tool
484. Small business owners perceive digital wage payment time consuming
485. Small business owner takes digital payment from customers to avoid credit shopping
486. Small business owners prefer customers to make cash payments
487. Small business owners receiving payments from clients in different modes as per convenience
488. Small business owners require physical evidence of transactions for smooth business with suppliers
489. Small businesses are helping each other with digital payments
490. Small kids in rural areas know how to operate smartphones
491. The role of smartphone technology in enabling visually disabled individuals to perform financial transaction
492. Third-party DFS are independent of consumer's choice of bank
493. Transaction SMS on mobile phone alerting consumer about illegal activity in bank account
494. Unusual rural financial requirements
495. Use of banking services are related to person's financial condition
496. Visually disabled is perceiving DFS application secured
497. Visually disabled is using cash to avoid online transaction failure
498. Visually disabled prefers to use DFS in presence of a family member
499. Wholesalers prefer to receive cash payments to avoid tax liabilities
500. Working rural women use DFS
501. Young members of the rural area takes interest in financial services-related information

Appendix I – Details of Provisional Themes and Categories Identified at Stage 3 of Analysis

Significant (tentative) Categories	Provisional Themes
• Accessing daily life resources • Fulfilling cash requirements • Managing financial obligations	DFS for managing routine life
• Controlling business income loss • Expanding income prospects • Feeling safe and confident	DFS for managing livelihoods
• Receiving awareness of financial products and services • Learning safe DFS practices • Responding to DFS cyber threats	Acquiring DFS knowledge
• Supporting each other within a close social network • Supporting people outside of the close social network	Supporting economic and social goals of the community
• Sharing online financial products and services awareness • Developing DFS know-how • Exchanging DFS cyber-safety awareness	Constructing DFS literacy within the community

Appendix J – Supporting Evidence Signifying DFS Use for Expanding Economic Opportunities

Deepam: "I often use [digital mobile app] to buy groceries."
Jai: "I always prefer to recharge my mobile [plan] via [digital payment app]. I do not need to go to the [recharge shop in town] just for this task."
Vikas: "I go to the ATM rather than visiting a [bank] branch and waiting in long queues …. It is an annoying task [withdrawing cash from bank branch]."
Bala (passive DFS user): "Whenever I need to withdraw money from my account, I go to the nearby BC [point]."
Dhiraj: "When my bill is due, I receive the reminder [from the app] showing the due date and amount to be paid."
Tilak: "I receive automated payment reminders every month… otherwise, I have to pay the late payment fee, which is too high."
Vairaj: "I receive alert messages on my [digital payment] app about a month before the [policy payment] due date with an online payment link.
Saurabh: "I do not think I could get a better job with my bachelor's degree. I am paying my brother's school fees, rent for this [BC] shop, bills, etc., all with my BC income."
Krishna: "Once some [significant amount] is accumulated in my savings, I transfer that money to [fixed deposit account] to gain interest on that money."
Tilak: "I use the e-FD option on my [mobile banking] app. It shows all the necessary [product details]. I do not have to think of postponing my investment…"
Prakash: "It is hard to find the latest [preparation] books in the town. So, I ordered them through one [e-commerce] website."
Hari (visually disabled): "I do not feel like asking for assistance now. I can do [my transactions] on my own."

Appendix K – Supporting Evidence Signifying DFS Use for Expanding Information Capabilities

Deepam: "These [DFS awareness] messages help him update [my financial] knowledge… I received [awareness] SMS. Also, my mobile [banking] app has complete information [guide] about safe banking… I know how to deal with these scammers and save money."
Jai: "I learn about loans, tax filing [services] … get the latest [product] information… I frequently receive SMSs from banks… like do not share your [One Time Password], ATM card pin and number, etc."
Lokesh: "They [mobile messages] are helpful in the sense that I can get all important details about [farmer] loan, current [interest] rate… [investment] schemes, etc."
Tika: "I prefer speaking to the bank employee or [BC] agent about my [financial product] requirement."
Vikas: "If I have any doubt, I prefer to go to the bank and ask a manager before taking that [financial product]."
Dhiraj: "I receive messages from a bank about how to avoid [cyber] risks. They are helpful because they [educate] about hackers' tricks they use to fool customers and steal their personal details and money."
Madhav: "There are [cyber safety] messages in [regional language] also. I can easily read and understand them."

Appendix L – Supporting Evidence Reflecting Existence of Structural Capital for Developing DFS Awareness

Brij: "I sought help from my nephew *[familial ties]* to get me a new [feature] mobile phone… That was the first time I learned about [DFS applications] ... cashback offers on mobile recharge, instant [money] transfers to the mobile number."
Jatin: "During the demonetisation, I learned about these [DFS mobile] apps through other boys *[non-familial ties]* in the village."
Deepam: "I often discuss [loan] plans with [people] in my neighbourhood *[non-familial ties]*."
Palki: "My spouse *[familial ties]* told me about banking schemes… like online [fixed deposits] and their benefits."
Kulveer: "My neighbouring shopkeeper *[non-familial ties]* told me about the barcode system for receiving online payments from customers."
Bhuvan: "My father *[familial ties]* refused to take that loan. He knew nothing about the CIBIL score and never cared about it. But when I explained to him, he understood."
Krishna: "People in our village *[non-familial ties]* share actual phone call recordings of a conversation between customers and scammers."

Appendix M – Supporting Evidence Reflecting the Role of Structural Capital for Developing DFS Know-How and Providing Monetary Backup Support to Others

Brij: "…my nephew *[familial ties]* taught me… how to link my bank account [with DFS mobile app] and recharge a mobile plan."
Kulveer: "He *[non-familial ties]* explained the QR code request process and helped me get [the QR code for my shop from service providers]."
Madhav: "I did not know how to operate the ATM system. One of my friends *[non-familial ties]* had an ATM card. He knew [ATM use] … He used to teach me how to insert the card in the machine, then which button to press…"
Dinker: "[neighbouring shopkeeper] explained that I first needed to download the [payment] application on my phone. Then, he *[non-familial ties]* showed me on his phone how to use the [app's] scanner to make digital payments."
Harish (passive DFS user): "I prefer to use cash for my daily requirements. I go to the bank branch whenever I need to withdraw money or perform any financial transaction. But if there is any financial requirement and I know that I cannot access the bank branch, I take the help of my relative *[familial ties]*."
Gagan (passive DFS user): "I am comfortable with cash… Like daily groceries, livestock maintenance, [motorbike] fuel, and children's [school] fees. If there is something urgent, I [take favour] from my friend *[non-familial ties]* … he has [digital payment application] on his mobile."
Bharti (passive DFS user): "If the customer does not have enough [cash] or wants to pay digitally, we request the customer to pay the balance using our neighbouring shopkeepers' [digital payment system]. They *[non-familial ties]* never refuse us to use their digital barcode system."

Appendix N – Supporting Evidence Reflecting the Role of Cognitive Capital Enabling others to Comprehend Financial Concepts and Improve Safe DFS Practices

Deepam: "Not everyone [in our village] can fully understand [Bank's] messages… It is difficult for them to determine the meaning of technical [financial] words… like 'update your KYC.' But if you explain them [technical words] in simple language, they quickly understand its meaning."
Bhuvan: "He [referring to his father] knew nothing about the CIBIL score and never cared about it. But, when I explained to him [about the significance of credit history], he understood the logic and agreed [to avail of the loan]."
Palki: "I received a fake call [from a cyber-scammer] … I shared the whole story with my family members and colleagues.
Vikas: "Since people [in my village] often share their [DFS] experiences, I am also aware of these frauds... like how fraudsters converse on the phone."

Appendix O – Supporting Evidence Reflecting the Role of Relational Capital for Nurturing DFS-Mediated Support System

Hari: "To gain self-confidence, I performed a few small transactions through my mobile app to my friend's mobile app."
Madhav: "I called my friend and asked him to send me some money immediately. After some time, I checked my account, and the money came."
Gagan: "I do not feel shy to get help from my friends [active DFS users] if it is urgent."
Rajiv: "My neighbour [a passive user] came to me at night... His mobile pack was expired. I used my [DFS mobile app] to recharge his mobile plan… people do such favours here."
Vikas: "We do not hesitate to come forward to help each other."
Palki: "I think it is a good practice to alert others and make them aware of these scams."
Kulveer: "If there is some problem with my QR [digital payment system] ... I use my neighbouring shopkeepers' QR sticker… if they face a problem, then they use my [QR] sticker."
Bhuvan: "It is mutual. Whenever my relatives or friends need [any financial] help, I transfer money to their [DFS] mobile apps... They also support me whenever I seek [for any financial help]."