Platformisation of Banking in Ireland: App Designs, Changing Imaginaries, and Emergent Barriers

PhD by

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Abstract

This thesis conceptualises the present process of the digitalisation of money, payment, and banking in Ireland as characterised by platformisation. Drawing from classic economic sociology and the sociology of technology, it argues that the design of banking services reflects the social imaginaries held by different social groups regarding money, payment services, and banking institutions. In the platform stage, these imaginaries both influence and are materialised in the design of mobile banking apps, which are conceptualised as sectoral platforms subject to dual regulation across digital and financial domains.

The thesis asks three research questions: (a) What dominant social imaginaries of money, payment, and banking service are represented in the design of mobile banking applications in Ireland? (b) What barriers to access and use exist in mobile banking applications and for whom? Do they vary by user group? And (c) Are there policies, strategies, or solutions in place to make banking services more socially inclusive in Ireland? This thesis employs a mixed-method design of a modified walkthrough method applied to seven banking apps; twenty-one expert interviews across four occupational categories; and eleven user interviews with those experiencing various difficulties due to income sources, residency status, and/or digital literacy.

The walkthrough identifies three coexisting social imaginaries: *Institutional*, *Transactional*, and *Digital*. Across all three phases of fieldwork, the thesis identifies responsibilisation processes in which users are expected to self-navigate and complete operational tasks that support service automation. These expectations are reinforced through complex terms and conditions and consent mechanisms. It also finds that although some users are legally and financially eligible to access banking apps, those that occupy 'novel' statuses (e.g., non-citizen residency and those with irregular incomes) encounter difficulties that remain unacknowledged in both service design and regulatory frameworks. Platformised banking requires a certain level of digital skills, financial literacy and legal documentation, thereby marginalising and excluding non-ideal users with novel statuses, low income, and/or those aged over 65.

Keywords: banking apps, platformisation, social imaginary, exclusion

Chapter 1 Introduction

1.1 Context

Formal banking in Ireland emerged during the period of British rule, when the island was part of the British Empire. The legacy of colonial governance remained after independence in 1921 and remains visible today. Colonial power influenced both the circulation of money and the establishment of financial institutions, embedding exclusionary practices that continue to resonate. The privilege of certain legal identities in account registration, for example, echoes historical patterns of restricted access and produces differentiated pathways into financial systems.This thesis traces the development of contemporary banking services with references to early and modern banking, drawing on examples from Ireland, Europe, and comparison cases from the global south. In Ireland, banking services emerged in local townships and regional centres during the late eighteenth and nineteenth centuries, accessible only to select groups of customers—mostly merchants and traders who required financial services to support high cash flow (Richards, 2012). Later, after the two industrial revolutions in Europe, with increasing public demand for banking services, contemporary banking developed into a formalised and centralised 'state based' system (ibid). This introduction sets the context for the formalised and centralised contemporary banking landscape, where the banking industry is constituted by highly regulated social institutions. It examines the social meanings and barriers that have occurred since the introduction of digital technology in banking with a focus on Ireland.

Over the past twenty years, contemporary banking has undergone significant changes due to the development of digital technology. In 1997, the online service of Bank of Ireland (BOI) was launched as BOI 365 (Bank of Ireland, 2025[1]), and illustrates how formal banking institutions, commonly defined as pillar banks, incorporated digital technology into their services. Meanwhile, despite the increasing demand for banking services, access to banking remains socially exclusive. Accessing the formal banking system requires a proven legal identity, a stable source of income, and a permanent address. These requirements can be inaccessible to many, including refugees, migrant workers, people in poverty, and other marginalised groups (Natile,

[1] Accessed in 2025 on a regularly updated webpage on the BOI official website.

2020). These individuals are often referred to as the ‘unbanked’ or people who cannot afford formal banking (Maurer, 2014).

As an immigrant on a student visa myself, I have moved countries twice in the past ten years, from mainland China to the United Kingdom (UK) and then to Ireland. I experienced significant barriers when accessing the banking system in the UK, particularly because China is classified as a restricted jurisdiction with limited integration into the SWIFT[2] system. I was asked to provide multiple forms of documentation relating to my legal and residency status, and my income from mainland China was not recognised until it had been translated and notarised by a bank-approved service. When later moving from the UK to Ireland, my nationality remained the same, but my UK banking history was recognised by banks in Ireland, which eased the process compared with many international students arriving from non-EU countries. Although I did not have employment in Ireland upon arrival, my PhD funding from an Irish governmental agency provided me with the privilege of having a domestically trusted source of income, which waived the standard deposit requirement covering one year of living expenses that is typically required for international students in Ireland. These experiences informed the research direction of this thesis, particularly the contrast between opening bank accounts in the UK and Ireland as an immigrant seeking services from pillar banks. I also observed clear differences between opening accounts with traditional banks and with neobanks such as Revolut. Together, these experiences contributed to my interest in how individuals become ‘unbanked’ or ‘underbanked’, and what financial institutions and service providers, including regulators, could do to address the barriers that marginalise these users.

Digital technologies—particularly those originating in media and communication—have been deployed to address these exclusions by enabling rapid peer-to-peer communication and alternative financial infrastructures for the unbanked, especially in the Global South. One of the first and most widely recognised examples was M-Pesa, launched in 2007 in Kenya. Emerging from the existing telecommunications infrastructure, it allowed users to convert mobile credit into transferable value through text messaging, creating a simple yet effective ‘text-a-payment’ system. M-Pesa’s success stemmed from its capacity to reach people excluded from formal banking because of restrictive identity requirements in

[2] Society for Worldwide Interbank Financial Telecommunication.

post-colonial Kenya. It required only a basic mobile phone and top-up credit, making it financially and technically accessible. Alongside other early initiatives such as GCash in the Philippines and Alipay in China (Crost, Felter and Johnston, 2016; Ding et al., 2018), M-Pesa laid the groundwork for what later became the financial-technology (FinTech) industry—an early convergence between finance and communication technologies. The continued evolution of digital technologies has since transformed banking, providing alternatives and extensions to long-established, state-regulated institutions. Globally, both M-Pesa and the digitalisation of BOI services illustrate how different design strategies—whether grounded in inclusion or compliance—reflect efforts to adapt to technological change. With the spread of smartphones and wireless internet, mobile platforms have become central to this transformation. The emergence of digital-native banks such as Revolut and N26 signalled a shift from digitalisation—the online replication of existing services—to platformisation, where apps integrate payments, savings, communication, and investment within modular, programmable, and data-driven ecosystems (van Dijck, Nieborg and Poell, 2019; Gillespie, 2018).

This shift marks more than mere technological innovation. It signals the embedding of banking within a wider platform economy, where the logics of connectivity, datafication, and automation increasingly govern financial interactions. As platformised banking becomes the norm, the division between service providers and users begins to blur. Apps such as Revolut and N26 operate as sectoral platforms, borrowing interactional logics from social media to facilitate payments, communication, and referrals. These same logics also redistribute labour and responsibility, requiring users to self-authenticate, manage digital risks, and interpret complex terms and conditions. In this way, responsibilisation becomes an outcome for platformised banking. It involves shifting operational and ethical responsibility from institutions to individuals. In Ireland, this shift is shaped by the legacy of state bailouts of all pillar banks, including Bank of Ireland, AIB and PTSB. These banks still face liquidity and public trust challenges, and they have strong incentives to reduce their cost base through digitalisation. Traditional pillar banks have therefore adopted similar platform features to remain competitive. Neobanks continue to evolve toward ‘super-app’ models that combine financial management with everyday communication (Fasnacht, 2021). The convergence of finance and media thus reconfigures not only the design and affordances

of banking apps, for instance, through instant messaging or personalised dashboards, but also the social roles and expectations placed on users.

Finally, the Covid-19 pandemic accelerated this digital shift. Social-distancing measures and cashless payment policies from 2020 onwards reduced in-person banking and normalised digital and contactless transactions (Demirgüç-Kunt, Morales and Ruiz Ortega, 2020). Even after restrictions were lifted, many branches did not return to pre-pandemic operations. As both regulatory and social forces drive continued digitalisation, it becomes crucial to investigate how mobile banking apps mediate access, responsibility, and trust. Banking, long recognised as a public service and a core mediator of social interaction (Dodd, 2012, 2016), must therefore be analysed as both a technical and a social institution. From early inclusive designs in the Global South to contemporary platformised services in Ireland, banking reflects evolving imaginaries of participation, risk, and exclusion. This thesis examines those imaginaries by analysing the design, accessibility, and user experiences of mobile banking platforms in Ireland, focusing on how digital transformation reshapes inclusion and exclusion within the financial system. This thesis therefore investigates mobile banking apps across three dimensions: the apps themselves, the perspectives of their makers (regulators, providers, and staff), and the experiences of a sub-set of users—particularly where gaps and frictions reveal barriers to access. It situates these perspectives and experiences within the changing social imaginaries of money, payment, and banking that shape how digital platforms are designed, governed, and lived in contemporary Ireland.

1.2 Research Objectives

This thesis investigates the digital transformation of banking services in the platform society (van Dijck, Poell and de Waal, 2018), with a specific focus on how the evolution of digital payment platforms (re)shape social imaginaries, service designs, banking institutions, and users. Social imaginary refers to the collective thoughts of the public (James, 2019). This does not imply a unified ‘public’ or a single imaginary (ibid). Rather, this thesis recognises the diversity of the public and how different groups may experience and understand banking services, including how they perceive money and prefer to make payments. As a result, multiple imaginaries coexist simultaneously and must be identified and examined to determine the dominant imaginaries, how they differ from one another, and how they may also converge. It narrows the research

subjects to digital payment platforms that are self-identified and publicly represented as banks, and formally recognised through regulation, thereby situating both traditional and emerging services within a single market. This thesis has five objectives.

Objective 1: To theoretically revisit and examine conceptualisations of money, payment and banking.

This objective revisits the classic economic sociology conceptualisations of money building upon the economic sociology of Simmel, Marx, Durkheim (2013). It also draws upon science and technology studies (STS) including Bijker and media and communication studies including Mansell and van Dijck, J.

Objective 2: To examine mobile banking apps available in Ireland from pillar banks, neobanks, and emerging niche bank types yet to be defined.

By focusing on a spectrum of digital banking platforms that include the digitalised services of long-established pillar banks and emerging digital-native services of neobanks, this objective captures the diversity and similarity of contemporary banking services. It seeks to identify common and nuanced barriers of access and use across different bank categories.

Objective 3: To understand industry perspectives, as service providers of banking platforms in Ireland, regarding cost, strategy, and social impacts.

The implementation of platform technology in banking blurs the line between users and service providers. This objective focuses on the service providers' perspective by collecting empirical data from experts in the banking sector. It examines the internal rationale behind digital transformation in banking and how the banking and FinTech industry view the incentives, costs and outcomes of digitalisation and platformisation of banking, including the operational challenges and strategic decisions required to integrate new technologies into legacy systems. Additionally, it investigates how these changes affect social inclusion and trust.

Objective 4: To explore user experiences with banking platforms regarding tasks, responsibilities, and risks.

This objective explores unintended or intended barriers to banking services. It explores the lived experiences of users' engagement with banking apps in Ireland and

analyses how digital platforms redistribute tasks in app designs, potentially contributing to, and reinforcing, social exclusions in a rapidly digitalising financial environment.

Objective 5: To propose a (re)conceptualisation of money and banking on banking platforms that could inform more socially inclusive designs of future services.

Drawing on both conceptual and empirical findings (see *Section 1.4* and *Chapter 4*), this objective aims to inform a new, more inclusive framework that acknowledges the nuances and complexities of users of banking services in Ireland. It considers the ethical and legal challenges of data security and user responsibilisation, recognising their critical role in shaping socio-technical innovation and addressing the concerns raised by digital technology. While this thesis does not produce a new design or product, it provides insights and findings that could guide a more inclusive and user-centred approach for both service providers and future scholars. This informs them to articulate a conceptual framework of banking categories and user classifications, ensuring that inclusivity and ethical considerations remain central to discussions of digital banking and its intersection with existing inequalities and exclusions in the sector.

1.3 Research Questions

Given the context and research objectives addressed above, this thesis asks three research questions:

1. What dominant social imaginaries of money, payment, and banking are represented in the design of mobile banking applications in Ireland?
2. What barriers to access and use exist in mobile banking applications and for whom? Do they vary by user group?
3. Are there policies, strategies, or solutions in place to make banking services more socially inclusive in Ireland?

1.4 Outline of the Thesis

This PhD thesis is divided into eight chapters. Following this introduction chapter, there are two literature review chapters, *Chapter 2 The Imaginaries and Institutionalisation of*

Money and *Chapter 3 Platformised Banking Services: Legacies, Inequalities, and Automation.*

Chapter 2 establishes the conceptual foundation of the thesis within sociology. It reviews key theoretical debates on the origins, nature, and social function of money, tracing how ideas about money have developed within economic sociology and related fields. The chapter begins with classical theories that conceptualise money as a relational and socially embedded institution, drawing on Simmel (2011) and later work by Ingham (2004), Dodd (2014), and Zelizer (2017). It shows how monetary value became abstracted, stabilised, and domesticated through legal, institutional, and everyday practices, linking money to broader structures of authority and exchange. The discussion then revisits three enduring imaginaries of money—Barter, Tribute, and Chartalism—not as linear stages or a single origin story, but as recurring frames that continue to inform financial institutions and public debate (Menger 1892; Mitchell-Innes 1914; Knapp, Lucas and Bonar 1973). Then *Section 2.3* introduces the concept of social imaginaries (Sartre 1940; Castoriadis 1987; Taylor 2007; Mansell 2012) as a bridge between classical theories and contemporary digital contexts. The social imaginaries approach explains how shared visions of money and banking are embedded in technologies, policies, and everyday practices. Overall, Chapter 2 positions money and banking as socially constructed and institutionally maintained infrastructures, providing the theoretical grounding for the empirical analysis that follows.

Chapter 3 locates the thesis within digital sociology and science and technology studies. It examines how digital technologies have transformed banking, reframing money and financial services as socio-technical infrastructures rather than purely financial systems. The chapter conceptualises this transformation as a staged process—from back-office digitisation to customer-facing digitalisation and, finally, to platformisation—each stage embedding distinct technical, institutional, and cultural logics. Drawing on scholarship in STS, media and internet studies, and critical data studies (van Dijck 2017; van Dijck, Poell and de Waal 2018; Gillespie 2018), it argues that mobile banking apps are sectoral platforms defined by programmability, personalisation, and datafication. These design logics redistribute labour, trust, and risk by shifting tasks and responsibilities from banks to users, producing new forms of responsibilisation. The chapter also reviews how regulatory, technological, and social factors converge in platform governance, linking automation, data collection, and

compliance regimes to questions of inclusion and exclusion. In doing so, *Chapter 3* establishes the conceptual framework for analysing mobile banking apps as socially embedded infrastructures shaped by platform logics and power relations, directly informing the methodological and empirical analysis that follows.

Chapter 4 presents the methodology and the methods used in this thesis. *Chapter 4* articulates the qualitative approach guided by social constructivism, using the conceptual framework of the social construction of technology (SCOT) (Bijker, Hughes and Pinch, 2012). This thesis employs a three-phased design using a mix of digital methods and qualitative social research methods. *Phase 1* focuses on the design of the platforms, that is, mobile banking apps, and employs a modified app walkthrough method to analyse the user interface (UI) design, registration processes and security features of mobile banking applications. *Phase 2* focuses on gaining insights from the banking industry via expert interviews with four categories of experts working in banking: regulators, developers, management and branch workers. Interview questions were informed by existing scholarly work and the walkthrough findings from *Phase 1*. Twenty-one semi-structured interviews were conducted and analysed using thematic coding. Later, initial findings are combined with findings from the walkthrough to inform the final phase of fieldwork with users. *Phase 3*, explores initial findings with a small sample of eleven participants in six interviews (a mix of individual and group interviews) of users drawn from diverse backgrounds and all facing some form of marginalisation. These interviews investigate the lived experience of users when they engage with contemporary banking services in Ireland.

As the three-phased methodological design indicates, this thesis has three findings chapters, each focussing on a phase of the fieldwork. *Chapter 5* is the first empirical findings chapter and presents the results of *Phase 1* of the fieldwork, which analysed seven mobile banking apps available in Ireland using a modified walkthrough method. It examines how the design of digital banking platforms reflects and shapes dominant social imaginaries of money, payment, and banking identified in *Chapter 2*. Through detailed analysis of user interfaces, registration procedures, authentication processes, and terms and conditions, the chapter demonstrates how mobile banking apps materialise institutional, transactional, and digital imaginaries in their visual and functional design. It highlights how accessibility, data processing, and consent mechanisms are configured in ways that transfer tasks and responsibilities from service providers to users, producing uneven experiences and reinforcing processes of

responsibilisation. The chapter also identifies how design convergence across pillar banks, neobanks, and novelty banks constructs the 'ideal user'—digitally literate, economically stable, and legally identifiable—while marginalising those who do not fit this profile. In doing so, *Chapter 5* connects interface design to wider socio-technical and regulatory structures, laying the foundation for subsequent chapters that explore how these imaginaries and design logics are interpreted and experienced by experts and users.

Chapter 6 presents the second empirical findings chapter and draws on Phase 2 of the fieldwork, which involved twenty-one semi-structured interviews with experts working across regulation, development, management, and branch operations in Ireland's banking sector. It examines how digitalisation and platformisation have reshaped the institutional landscape of banking, leading to new classifications of pillar banks, neobanks, and novelty banks. The chapter analyses how experts conceptualise change within their organisations, revealing tensions between efficiency, standardisation, and social responsibility. It shows how regulatory frameworks at national and EU levels—particularly licensing regimes, Know Your Customer (KYC) and Anti-Money Laundering (AML) requirements—actively shape the categorisation and operation of banks. These findings demonstrate that digital transformation is not merely technological but institutional and political, producing new forms of centralisation and control while claiming to enhance flexibility and innovation. *Chapter 6* also identifies the economic and human costs of digitalisation, highlighting how automation, data compliance, and outsourcing reconfigure labour and expertise within the sector. Together, these insights set the stage for *Chapter 7*, which connects expert perspectives with user experiences to reconsider how users are defined, categorised, and supported in the evolving banking ecosystem.

Chapter 7 constitutes the final empirical findings chapter, bringing together insights from both expert and user interviews to reconceptualise the notion of the 'user' in contemporary banking. Building on the institutional perspectives established in *Chapter 6*, this chapter focuses on the lived experiences of eleven users drawn from diverse legal, demographic, and digital backgrounds facing different types of difficulties, challenges, and forms of marginalisations when using banking service. It examines how platformised banking redistributes tasks and responsibilities from institutions to the individual, and how these processes unevenly affect users with differing levels of digital literacy, financial knowledge, and citizenship status. The

analysis identifies how banks' oversimplified categorisation of customers into high-net-worth users and 'people who need more attention' obscures the diversity of barriers encountered by users over the age of 65, international students, migrants, and those in precarious situations. Through these empirical accounts, *Chapter 7* highlights how responsibilisation operates both in app interfaces and in face-to-face banking interactions, creating new forms of exclusion and withdrawal. It demonstrates that digital and physical banking are now deeply interconnected, and that the design of mobile apps both reflects and reshapes institutional assumptions about ideal users. In doing so, the chapter advances the argument that social imaginaries of banking are co-produced through design, regulation, and user experience.

Chapter 8 presents the methodological and empirical contributions of this thesis to existing literature. It also proposes how this thesis can inform future research and suggests directions for further studies on the banking industry in Ireland and beyond.

Chapter 2 Social Theories of Money, Payment, and Banking

Introduction

This chapter situates this study within economic sociology and the sociology of media and technology. It examines how money is imagined, institutionalised, and designed, and how these processes shape payment and banking in the present. The chapter proceeds in three sections. First, it introduces the changing nature and institution of money. It briefly revisits classic theories of the origin of money and traces key shifts in material form and governance, including a focused account of Ireland's monetary history, in order to show how these trajectories continue to inform contemporary sociological debates. Second, it addresses the core sociological frameworks on money, with particular attention to Simmel's treatment of money as medium, tool, and institution, and to subsequent developments that extend or contest this approach. Third, it integrates the concept of social imaginaries to connect meanings and institutions. It shows how imaginaries organise the legitimacy of money and are materialised in the design and regulation of financial infrastructures, from central banks to neobanks and platform-based services. Together, these discussions provide a conceptual foundation for the empirical analysis of platformised banking in *Chapter 5, 6* and *7*.

2.1 The Changing Nature and Institution of Money

Money changes constantly. It changes alongside social development, reflecting economic, political, and cultural transformations. It bears the symbolic meaning of value and identity while serving crucial social functions that connect individuals, organise exchange, and sustain moral order. This chapter first examines different perspectives on the origins of money, each emphasising distinct social and institutional dimensions that inform sociological understandings of money, payment, and banking. It then discusses the evolution of the design of money, showing how it has adapted to technological and economic change. The following section considers how political power, particularly state authority, has shaped the institutional design of money through processes of centralisation, governance, and regulation, with examples from both historical and international contexts. Finally, the section situates the changing nature

and institution of money in Ireland, addressing its colonial past and the interlinkages between money, identity, and representation, before contextualising Ireland's distinctive position within the European financial sector.

2.1.1 Theories on the Origins of Money

Debates about the origins of money reveal how different societies have imagined and institutionalised value. This subsection introduces three classical theories on the origins of money, Barter Theory, Tribute Theory, and Chartalism, and how they have been integrated into economic sociology in order to understand the invention and development of money and the services built around it. Each of these three theories has its own focus on money as a form of social mediation, its role in shaping power and morality, and its function in maintaining moral and social order, issues that have long been debated in sociology.

Barter Theory focuses on social exchange and conceptualises money as a bridge that emerges naturally from bartering activities. While the theory is rooted in the assumption of voluntary exchange at the beginning of trade (Dodd, 2016; Maurer, 2014), it has had lasting influence on later research by emphasising how exchange convenience has influenced the design of new forms of money and by linking money closely with market and economic activities. It is commonly understood as a market-based explanation of money's emergence, associated with the idea of a primitive bartering society from which money naturally evolved (Menger, 1892). Menger (1892) argues that money arose when certain objects became widely accepted in trade because of their 'salableness', i.e. the capacity to be exchanged easily. This narrative presents money as an outcome of spontaneous order within markets. The critique of Barter Theory is that it explains little about how trust, measurement, and legitimacy were institutionalised (Ingram, 2000; Dodd, 2016) and overvalues voluntary behaviour as the main factor contributing to the creation of money. However, it remains valuable for the sociological understanding of money, as it shows that money can be understood as a social technology of coordination, a medium that enables diverse exchanges to be rendered commensurable. In later economic sociology, Simmel (2011) and Ingham (1996; 2013) acknowledge the barter understanding of money and argue for the mediating function of money in social activities.

Tribute Theory emphasises the morality and obligation mediated by money. In contrast to Barter Theory, money does not arise from convenience or voluntary behaviour but emerges from obligation, restitution, and hierarchy (Mitchell-Innes, 1914). It posits that money first functioned as a token of debt or faith, encoding moral and institutional relationships. Mauss (2004) describes money as an 'object of faith and institution', whose value lies in the confidence society invests in it. In this framing, money is a moral instrument before it becomes an economic one. It expresses reciprocity, reparation, and social control. For sociology, Tribute Theory is significant because it exposes the normative dimensions of economic life. Monetary transactions are not only practical exchanges but moral acts that restore order or express loyalty. This aligns with the early economic sociology understanding of value as socially produced rather than naturally given. Durkheim (2013) understood money as a 'social fact', a moral instrument that sustains collective order. An early example of Tribute Theory can be found in legal codes such as wergild, which literally translated as 'man money' or 'blood money' and where monetary compensation codified hierarchy and restitution, showing how the measurement of value was bound up with law and morality (Ingham, 1996). This moral lineage persists in contemporary practices such as fines, compensation schemes, and digital reputation systems that quantify conduct and responsibility. Accordingly, Tribute Theory prefigures later sociological analyses of money as a medium of governance and discipline.

Chartalism, or the State Theory of Money, redirects attention from markets or morality to political institutions (Knapp, Lucas and Bonar, 1973). It holds that money derives its value from state authority which has the power to declare legal tender, impose taxes, and enforce its acceptance. In this sense, money is a legal artefact whose legitimacy depends on bureaucratic infrastructure and public trust. Modern Monetary Theory (MMT) extends this logic by arguing that sovereign states issuing their own fiat currencies can create money to meet social goals, limited not by balanced budgets but by inflation and real resources (Juniper, Sharpe and Watts, 2014; Wray, 2015; Ehast, 2022; Ehast and Hofgen, 2022). Ingham (1996) and Sawyer (2007) interpret such views through a sociological lens where monetary stability relies on collective belief in institutional competence. Compliance procedures, taxation, and central bank coordination translate state power into everyday practice. In digital contexts, this is

visible in requirements such as 'Know Your Customer checks[3]' and tax-linked digital identities, technical artefacts that materialise the Chartalist imaginary of state-centred authority.

Together, these theories demonstrate that money's origins are plural but consistently social. Whether understood through exchange, obligation, or law, money depends on institutions that stabilise value and meaning. Their continuing relevance lies in how they frame core sociological questions: how societies create trust, legitimise value, and enforce order. These foundational theories provide a bridge to modern economic sociology, which explores how money functions as a medium of social relations, an instrument of coordination and control, and a symbol of institutional power.

2.1.2 The Dematerialisation of Money and Value

This subsection explores money's capacity for continual reinvention. Using historical cases from across the world, it focuses on how money is co-constructed by its users and the sociotechnical conditions of each period. It traces the movement from metal coins to paper notes, showing how money gradually became dematerialised through the process of removing real, intrinsic value from the object of money and leaving only its symbolic value. This process is later repeated in the digital era. Instead of changing the material form, money is now removed from the physical world and transformed into a purely digital data format. This is accompanied by corresponding changes in payment systems and financial institutions that evolve to accommodate new forms of money. Simmel (2011) and Giddens (1990) both highlight that modernity entails the 'disembedding' of social relations, as interactions are increasingly mediated by abstract systems of trust. Money epitomises this process. As its material form becomes less tangible, confidence in institutional guarantees replaces physical verification. Each stage in money's transformation has therefore expanded its reach while intensifying its dependence on social and technological infrastructures.

Early coinage tied value to material substance and sovereignty. Coins made from gold, silver, and bronze connected money's worth to the value of its physical properties

[3] 'Know Your Customer' (KYC) is a mandatory process required for financial institutions to verify the identity of their customers and surveil their activities to prevent fraud, money laundering, and other illegal activities. It involves collecting and verifying customer/user information, assessing their risk level, and monitoring their activities over time.

and to the authority of the ruler who minted them (Williams, 1995; Shilstein and Shalev, 2011). With the development of smelting and standardised weights, money's legitimacy rested on both metallurgy and monarchy (Craddock, 1978). Desan (2014) notes that the transition from intrinsic to symbolic value was gradual rather than abrupt. The gradual emergence of paper money in different regions between the eleventh and sixteenth centuries illustrates this shift. The Jiaozi of Song-dynasty China, first issued in the eleventh century, provides one of the earliest examples of dematerialisation of money from metal to paper (Glahn, 2006). Originating as private deposit receipts along trade routes, Jiaozi certificates circulated widely before being centralised by imperial decree. Their use transformed trust from a physical property of metal into a social property of institutions. Merchants and the state discovered that printed promises of redemption could move value more efficiently than metal coins. Spek and Leeuwen (2018) argue that Jiaozi combined technological innovation, printing and papermaking, with institutional adaptation, illustrating how monetary change mirrors broader social and political development.

The invention and later adaptation of *Jiaozi* illustrates the interplay of state power and the shifting boundaries between centralisation and decentralisation. Originating as regional money within the tea trade, Jiaozi spread across southern commercial centres and catalysed the rise of proto-banking institutions. Its popularity challenged northern federal authority, leading to state intervention: the emperor eventually banned private Jiaozi and reissued state-controlled paper currency, *Huizi*, in the fifteenth century (Wu, 2009). In Europe, similar processes unfolded centuries later. State issued banknotes first appeared in the seventeenth century with the founding of the Bank of England in 1695, initially circulating alongside privately issued notes in England, Scotland, and Ireland (Richards, 2012). By the mid-nineteenth century, emission rights were consolidated in the Bank of England, illustrating how monetary innovation often begins as decentralised experimentation and ends in centralised regulation (Kerridge, 1988). A similar pattern appears in imperial English and Chinese (with the *Jiaozi* example discussed above) banking contexts. In China, early paper money such as *Jiaozi* began as local and privately issued instruments. These were later centralised under imperial authority. England followed a comparable trajectory. Early paper instruments came from private goldsmith-bankers, and the creation of the Bank of England in 1694 brought the issue of state-backed notes under formal state authority. In both cases, monetary centralisation grew out of diverse and decentralised experiments,

although China's system was directly imperial while England relied on a chartered institution backed by the Crown and Parliament.

The next stage of the dematerialisation of money accelerated through the nineteenth and twentieth centuries with the process of digitisation and digitalisation. Telegraphy, along with new accounting practices, created the first forms of electronic transmission in the late nineteenth century and laid the groundwork for fully digital systems that emerged with computing in the mid twentieth century. These developments enabled money to circulate as information rather than as a material token. The abandonment of the gold standard and the creation of the Bretton Woods system[4] after the Second World War established the United States dollar as the primary global reference currency. This shift further detached monetary value from any material anchor (Eichengreen and Flandreau, 1997; Bordo and Eichengreen, 2007). Giddens (1990) argues that modern trust increasingly depends on 'abstract systems' that operate beyond direct human perception. In this sense, the digitisation of money is not a rupture but an intensification of earlier patterns. Bank balances, credit cards, and electronic transfers transform money into a record, a signal, or a database entry, forms that rely entirely on institutional credibility and technological infrastructure. Meanwhile, globalisation, driven by the growth of international trade and population mobility, amplified these dynamics. Currency exchange became a layered transaction, involving not only money for goods but also money for another form of money, each defined by national authority. The worldwide dominance of the dollar embedded a hierarchical order in which financial trust and political power converged (Schulmeister, 2000). According to Desan (2016) and Helleiner (2002), the evolution of money is inseparable from state formation and global governance. Changes that appear to be technical, such as the move from metal to paper or from paper to electronic signals, are in fact socially constructed through the decisions of states, financial institutions and other social actors. These decisions shape the scale at which trust is organised and the institutional forms through which it is maintained.

Each stage in the history of money reflects wider social and technological developments, including printing and bureaucracy for paper currency,

[4] The Bretton Woods agreement of 1944 established a system of fixed exchange rates in which major currencies were pegged to the United States dollar, with the dollar convertible to gold at thirty five dollars per ounce. It also created the International Monetary Fund and the World Bank to support monetary stability and postwar reconstruction. This system consolidated the dollar's position as the dominant global reserve currency.

telecommunications and computing for electronic banking, and mobile devices, interfaces and data analytics for platform finance. In each case, new media express value, trust and responsibility in ways that emerge from social choices rather than from technology alone.In the present 'platform era', the design of digital payment systems and banking apps 'materialises' these historical legacies. Technologies of verification, such as biometric logins, identity verification, and algorithmic scoring, are used to translate longstanding imaginaries of trust and authority into interface design (discussed in the next chapter). These changes also have their roots in the historical milestones outlined above. Accordingly, the transformation of money into data exemplifies the continuity of institutional mediation. Understanding this continuity provides a foundation for analysing contemporary forms of platformised banking and exploring how digital systems inherit, reinterpret, and redistribute the same social functions that have defined money for centuries.

2.1.3 Money and Monetary Identity in Ireland

This subsection investigates the foundations of banking in Ireland and identifies the lasting socio-cultural, economic, and political embeddedness that shapes the country's unique financial landscape. These historical legacies form an institutional and cultural infrastructure that must be acknowledged in any study of contemporary banking in Ireland. The Irish experience of change in money design, regulation, and monetary identity illustrates how monetary transformation is inseparable from political authority and collective identity. Each stage in Ireland's monetary system has mirrored broader shifts in sovereignty, institutional control, and imagined community. From early coinage to European integration, the evolution of Irish money demonstrates how the institution of banking both reflects and constructs national identity.

The first Irish coinage, minted in the late tenth century, consisted mainly of silver coins and represented an assertion of regional autonomy within the medieval economy (Doherty, 1980; Sullivan, 1949). This autonomy was curtailed after the twelfth-century Norman invasion and the gradual extension of English influence. Between 1210 and 1801, under English colonisation, Irish coinage was repeatedly adjusted to align with the English pound in weight, metal composition, and design (Doherty, 1980). Money thus became an emblem of political subordination: every coin and note signified integration into an external political entity. The Act of Union of 1801

formalised this dependence with direct rule from Westminster in England, replaced the Irish pound with sterling and integrated Ireland fully into the British monetary system (Fetter, 2006). This shift was not a voluntary convergence of markets but a political imposition. Sterling circulation institutionalised British fiscal control and embedded Ireland within imperial financial networks centred on London. Banks operating in Ireland, such as the Bank of Ireland and later joint-stock banks[5], functioned under British law and monetary policy, reinforcing asymmetries of power. Money was both a medium of exchange and a marker of colonial governance.

Following independence in 1922, the Irish Free State re-established monetary sovereignty through the Saorstát Pound. This move symbolised political autonomy as much as economic reorganisation (Crotty and Schmitt, 2014). The new currency later developed into the punt Éireannach and used Irish language and iconography to assert national distinctiveness (Valiulis, 1995; O'Reilly, 2001). Yet the Free State[6] maintained a one-to-one parity with sterling and continued to rely on British clearing systems. This arrangement reflected more than economic convenience. It expressed the political and institutional constraints faced by a new state that needed international credibility, domestic stability and access to established financial networks. The decision to preserve parity was not imposed by technology or by markets. It was constructed through negotiations among policymakers, bankers and civil servants who judged that alignment with sterling offered the safest route to monetary legitimacy (Honohan, 2015; Ó Gráda and O'Rourke, 2022). Ireland therefore created a national currency that was symbolically distinct but operationally dependent on British infrastructure. The Saorstát Pound embodied a dual imaginary of post-colonial modernisation. It marked a claim to sovereignty while also revealing the practical financial interdependence that shaped the relationship between the independent Irish state and the United Kingdom.

Monetary reform in the 1970s marked another reconfiguration of authority. Decimalisation fully separated Irish currency from sterling and aligned it with European systems (Valiulis, 1995). Participation in the European Monetary System and the Exchange Rate Mechanism positioned Ireland within a new supranational framework of economic governance. The adoption of the euro in 1999 and its circulation from 2002 completed this transition (Thorhallsson and Kirby, 2012; Donovan and Murphy, 2013).

[5] A joint-stock bank is a term used in late nineteenth century official banking documentation referring to a bank owned by multiple shareholders, each of whom holds a fixed number of shares.
[6] The term 'Irish Free State' in this thesis refers to the period from 1922 to 1948, when Saorstát Éireann operated as a dominion of the British Commonwealth under the Anglo-Irish Treaty.

The euro represented not merely a change of denomination but a redefinition of monetary identity. For Ireland, joining the eurozone signified integration into a collective European project and a symbolic distancing from the British past. According to Crotty and Schmitt (2014), these successive changes, from colonial to national to European, demonstrate a trajectory in which money operates as an instrument of belonging as well as exchange.

Each monetary transition in Ireland involved parallel transformations in banking. From the state-sponsored Bank of Ireland under British rule to the establishment of the Central Bank of Ireland and its later incorporation into the European System of Central Banks, institutional design both reflected and produced new forms of authority. These shifts also altered public imaginaries of trust. The national banking system came to symbolise economic modernity and collective competence, while European integration re-framed financial stability as a shared continental responsibility. As Zelizer (1997) would suggest, money here was 'tamed' through institutional categorisation, earmarked by state boundaries and social expectations. In practice, Irish banking demonstrates how monetary institutions mediate identity, authority, and everyday life.

The changes in money and banking institutions in Ireland over time illustrates all the themes explored throughout this section: the continual re-institutionalisation of money, the role of political authority, and the shaping of collective imaginaries. Each redesign of currency and banking infrastructure represents an attempt to stabilise value and identity through institutional innovation. In the digital era, these processes persist in new forms. Platformised banking systems, governed by both national and European regulations, embed compliance and citizenship into interface design. Digital identity verification, anti-money-laundering checks, and centralised databases continue the historical pattern of linking trust to state-backed institutional authority. Ireland's monetary history thus exemplifies the broader sociological argument that money is not merely an economic medium but an evolving social institution that materialises political and cultural imaginaries.

2.2 Sociology of Money, Payment, and Banking

'There is no denying that views on money are as difficult to describe as are shifting clouds' (Schumpeter, 1954, p. 289). Although historians and anthropologists have

attempted to define the origin of money in a unified fashion (Deflem, 2003), money holds different meanings in different social contexts and therefore can be understood as having different origins (Simmel, 2011; Garrison, 1970). This section incorporates a Simmelian framework, viewing money as a changing medium that does not contain a unified form but constantly evolves. Despite its title, 'The Philosophy of Money' (Simmel, 2011) is widely regarded as a foundational text in economic sociology. Simmel was not merely a philosopher of economic life but one of the classic sociologists to theorise money as a social form with far-reaching implications for modernity, exchange, and social interaction. The Simmelian view of money identifies the consistent core characteristics of money that persist through its development over time. It aligns with a constructionist ontological view, understanding money as a social artefact that changes with society. Simmel stands at the origins of monetary studies and economic sociology. His work predates the formal emergence of economic sociology as a sub-discipline and offers a distinctive relational framework that continues to influence scholars such as Ingham, Dodd, and Zelizer.

2.2.1 Simmel's Three Characteristics of Money

Simmel (2011) treats money not only as a medium of exchange or a representation of value but as a social institution embedded in cultural, moral, and symbolic orders. His concern with the mediating function of money, its objectification of social relations and its role in producing alienation, firmly situates his work within the sociological tradition. Accordingly, this section approaches Simmel not as an abstract theorist of value but as a key figure in the development of sociological approaches to money. Moreover, Simmel's methodological approach places him at the core of early sociological thought. His theory of money intersects with enduring sociological concerns, including alienation, modernity, the division of labour, and the transformation of social relations under capitalism. As economic sociology developed over the twentieth century, Simmel's influence remained significant, offering a bridge between classical sociological theory and contemporary studies of money. His work provides early insight into how economic categories, such as money, mediate not only transactions between people but also the structures and lived experiences of social life.

Simmel (2011) theorises money through three interrelated characteristics: money as a medium, as the purest tool, and as a social institution. These characteristics

are not mutually exclusive. Rather, they reveal how money operates both as an artefact of exchange and as a symbolic token that reshapes social relations in contemporary life. This section introduces Simmel's theory of money, alongside later developments and critiques, to position money as a social artefact,whose origins continue to shape the current transformations brought by globalisation, digitalisation, and platformisation. Simmel (2011) argues that money is, first, a medium. This concept is central to many theories of money, including those rooted in exchange and 'salableness' within the Barter Theory of money (Deflem, 2003; Menger, 1892), but Simmel develops it into a more systematic sociological framework. For Simmel, money mediates not only acts of exchange but also social distance. It enables individuals to relate to one another impersonally and across space, breaking the immediacy of barter and embedding interactions within an abstract system of equivalence.

Simmel identifies three levels of this mediating function: it bridges distant economic activities; it creates distance between people and objects; and it becomes distanced from both the objects and persons involved, functioning as a detached value-token (Simmel, 2011; Dodd, 2016). This distancing effect is particularly important for understanding how money facilitates modern forms of alienation. As Backhaus (1999) and Deutschmann (1996) argue, the objectivity of money is not simply a technical property but a socially constructed form of detachment. Once money becomes a numerical abstraction, its prior subjective, sentimental, or material value must be severed. For example, shells and other early currencies may have held aesthetic or symbolic meaning prior to monetisation (Marx, n.d.), but in their monetary form such attachments are suppressed. The monetary token then becomes 'pure' in its function. This distancing links money to broader social ordering. By separating values, emotions, and meaning from the medium of exchange, money facilitates a deeper transformation in how modern societies manage relationships and obligations.

Simmel's second characteristic of money is that it is the purest tool. While Barter Theory interprets the exchange function of money as rooted in personal negotiation and voluntary mutual use, Simmel recognises that money did not emerge from consensual exchange. Instead, it simplifies and quantifies social obligations, often under the influence of external forces such as the state or religious institutions, particularly in the form of debt. According to Simmel (2011, p. 212), 'a tool continues to exist apart from its particular application and is capable of a variety of other uses that cannot be foreseen. Money as the means par excellence fulfils this condition perfectly.

Money is the tool that has the greatest possible number of unpredictable uses.' Simmel is not related to Tribute Theory, and the two traditions develop independently. Any similarities lie only at the level of their shared interest in how obligation and social relations become quantified. Simmel (2011) situates these obligations within broader social contexts, arguing that money reduces all relationships it touches to impersonal functionality. Debt, for example, becomes quantified and institutionalised through money. It ceases to be negotiable or materially tied and becomes an abstract obligation represented numerically (Singh, 2016). Money's purity, in Simmel's view, lies in this abstraction, consistency, and portability. As the purest tool, money is presented as the most neutral and universally applicable means within modern society. Its perceived neutrality stems from its ability to be used without conveying additional social meaning. However, this neutrality also contributes to what Simmel terms the 'tragedy of culture', whereby cultural objects, including money, become increasingly alienated from their creators. Money, in this view, expands individual freedom by allowing personal choice across goods, services, and experiences. Meanwhile, it also flattens qualitative differences into standardised, quantifiable metrics.

This conceptualisation is especially relevant to digital money. While Simmel wrote before the digital era, his focus on the functions of money rather than its material design allows his theory to remain relevant. As digital payment infrastructures proliferate, money increasingly becomes nothing but 'a number floating in the digital ecosystem' (Dodd in Zelizer, 2017, p.2). This insubstantiality does not diminish money's social power. Rather, it intensifies its role as an abstract measure of obligation, access, and control. Simmel's concept of money as the purest tool helps explain how financial technologies extend monetary logic into new areas of social life, including dating, surveillance, and social scoring.

Simmel's third characteristic of money is that it functions as a social institution. Drawing from a sociological understanding of institutions as enduring patterns of interaction (Giddens, 1984; Turner, 1997), Simmel (2011) presents money as a stabilised yet evolving social form. It organises behaviour, encodes social values, and mediates trust. Like law, the family, or language, money persists because it adapts to new material and symbolic environments. Although its forms evolve, its core function, as an institutionalised medium of abstraction, remains intact. This institutional view helps reconcile money's impersonal and deeply social roles. In public, money appears objective and detached. In private life, it becomes entangled in relationships, emotions,

and obligations (Schotter, 2008). Papadopoulos (2008) critiques Simmel for overemphasising money's institutional role and underplaying its classed and individual uses. Nonetheless, Simmel provides a foundation for understanding how money functions not merely as a material artefact but as a moral and symbolic tool. Mechanisms like monetary incentives and penalties, used in policy areas ranging from criminal justice to welfare, rely on money's institutional authority as a mechanism of social control.

Taken together, these three characteristics, medium, tool, and institution, support a relational view of money. Simmel departs from object-based theories such as Barter, Tribute, and Chartalism, which locate money's essence in material origins or legal status. Instead, he offers a framework in which money is relational, situational, and contingent. Value is not inherent in objects but socially constructed and contextually validated. This move towards relationality underpins much of the contemporary sociological literature on money.

2.2.2 Contemporary Sociological Theories of Money

Simmel has influenced later scholars of money across multiple disciplines. This section focuses on contributions within sociology that are particularly relevant to the Simmelian view of money. First, it examines how the idea of money as a social institution has been incorporated into subsequent scholarship. Simmel's influence is evident in the work of Fantacci (2005), who reinterprets money as a human institution. Fantacci argues that money is not simply a tool of exchange or a state-sanctioned token, but a historical narrative of social coordination, where the meaning of money shifts across time and context. He critiques neoclassical and Chartalist accounts of money for overlooking the ethical and symbolic foundations of monetary institutions. Instead, he positions money as a moral promise, a commitment to reciprocate, rather than merely a medium of equivalence. Similarly, Ingham (1996) draws directly from Simmel to argue that money is fundamentally a social relation rather than a 'thing'. Ingham critiques both neoclassical economics and Chartalist theories for neglecting the relational dynamics of value, authority, and trust that underpin monetary systems. He extends Simmel's insight by arguing that while state power is necessary, it is not sufficient to explain the operation of money. Instead, the legitimacy of money depends on its acceptance within

a network of institutions, practices, and expectations that are fundamentally social in nature.

Expanding beyond the singular emphasis on money as a social institution, Dodd (2016) engages with all three of Simmel's characteristics, money as medium, tool, and institution. 'Money is a claim upon society, as Simmel described, providing holders with a generalised claim that can be levied on others for goods' (Dodd, 2016, p. 7). Dodd calls for a reimagined economic sociology (Aspers and Dodd, 2015) and argues that monetary value is not simply imposed by the state or discovered in markets but is constituted through symbolic and social processes. He highlights how the design, regulation, and discourse of money reflect broader imaginaries of economic life. In particular, Dodd draws attention to the role of monetary abstraction as a form of governance, echoing Simmel's argument that money reduces complex social relations to functional equivalence. In the context of this research, Dodd's interpretation of monetary value and institutional design is especially relevant for studying digital banking apps and other platform-based financial systems. According to Dodd (2016, p. 4), 'Money is what it does rather than what it is'. In the platformised context, digital banking apps and other platform-based systems present money as frictionless, neutral and transparent, while obscuring the data infrastructures and power relations that sustain them.

At the same time, Zelizer (1997) offers an important critique of Simmel by focusing on the social meaning of money. While Dodd extends Simmel's work, Zelizer challenges it. 'A dollar is a dollar, or so most of us believe. Indeed, it is part of the ideology of our time that money is a single, impersonal instrument that impoverishes social life by reducing relations to cold, hard cash. After all, it's just money. Or is it?' (Zelizer, 1997, p. 2). Zelizer (1997) argues that Simmel overemphasises the impersonal and objectifying dimensions of money, overlooking the ways in which money is personalised, earmarked, and morally charged in everyday life. Through the concept of 'special monies', such as gifts, allowances, or religious donations, Zelizer demonstrates that monetary transactions often carry emotional and symbolic weight. This directly contrasts with Simmel's notion of money as the purest tool. However, while Zelizer's critique highlights the embeddedness of money in social life, it does not negate Simmel's framework. Rather, her work expands it by showing that money is simultaneously embedded and detached, a duality that is already acknowledged, albeit differently, in Simmel's concept of money as a socially embedded tool of abstraction.

The continuing relevance of Simmel's theory lies in its capacity to address the persistent tension between money's abstract functionality and its embeddedness in social and moral life. As discussed in subsection 2.1.1, classical theories of money offer partial and often contradictory accounts of its origins and legitimacy: Barter Theory focuses on voluntary exchange, Tribute Theory on moral and religious obligations, and Chartalism on state authority. While each theory captures a different aspect of monetary history, none can account for the full range of money's meanings, uses, and forms. Simmel does not attempt to unify these theories, nor does he offer a single origin story. Instead, he acknowledges that money is historically contingent and inherently multifaceted. It is always embedded in specific social relations, institutional arrangements, and cultural imaginaries.

By foregrounding money's mediating, instrumental and institutional characteristics, Simmel offers insights that can be productively connected to contemporary work on design, infrastructure and media. As digital technologies transform the materiality and circulation of money, theories of money must grapple with the implications of novel interface designs, platform governance, and algorithmic decision-making. This thesis returns to Simmel's insights in later chapters, particularly in the empirical analysis of platform-based banking apps and digital payment infrastructures in *Chapters 5* and *7*. In these chapters, Simmel's emphasis on abstraction, alienation, and symbolic mediation provides key analytical tools for examining how money is reimagined and redesigned.

2.3 The Social Imaginaries and Institutions of Money, Payment, and Banking

This section introduces the concept of the social imaginary, using interpretations of Charles Taylor's work within media studies and science and technology studies to examine how collective meanings shape financial systems. It first outlines the social imaginary as a framework for understanding how collective meanings shape the legitimacy and organisation of monetary systems. It then explains how financial institutions materialise these imaginaries, tracing the relationship between state-centred and decentralised models of authority and how these have evolved in the digital and platform era.

2.3.1 The Social Imaginaries of Money

While money, payment, and banking are often closely linked and influence each other, money remains the primary unit that connects and enables contemporary understandings of financial services (Simmel, 2011). Money functions as the core medium of exchange, but its meaning and legitimacy depend on the social and institutional contexts that sustain it. However, even within contemporary sociology, understandings of money remain diverse, ranging from its origins to its everyday use, leading to similarly varied interpretations among scholars and the public. The design of payment and banking systems is therefore shaped not only by technical and economic considerations but also by collective understandings of what money represents. This subsection introduces the concept of the social imaginary and draws attention to the relevant social groups involved in shaping monetary practices. Their differing interpretations produce interpretative flexibility that informs both technological design and institutional choice.

The concept of the social imaginary was initially proposed to describe the collective patterns of a society's way of living and seeing itself, acting as the symbolic glue that binds people together (Sartre, 2010; Castoriadis, 1987). Castoriadis (1987, p. 145) describes it as the 'imaginary of the society', which 'creates for each historical period its singular way of living, seeing, and making its own existence'. He further argues that 'the central imaginary significations are the laces which tie a society together and the forms which define what, for a given society, is "real"'. Taylor (2007) shifts the focus towards more informal and everyday practices. For Taylor (2007), the social imaginary is not a formalised theory but the taken-for-granted 'ways people imagine their social existence, how they fit together with others, how things go on between them and their fellows, the expectations that are normally met, and the deeper normative notions and images that underlie these expectations' (p. 23). It is 'not an abstract set of principles, but rather the lived, often unarticulated understanding that shapes daily interactions, norms, and practices' (Taylor, 2007, p. 14).

In C*hapters 2, 3, 5* and *7*, the concept of the social imaginary is used to interpret how collective expectations and understandings of money, payment and banking are materially and symbolically reinforced through institutional design. This subsection introduces the social imaginary through work in the sociology of media and science and technology studies, drawing in particular on Mansell's (2012) interpretation of Taylor and on Jasanoff's work on sociotechnical imaginaries. Mansell (2012) identifies the

coexistence of multiple, often conflicting, imaginaries articulated 'in the form of narratives or stories that people can tell about any feature of human endeavour' (p. 4). She critiques dominant technological imaginaries of the internet, which privilege 'technological innovation and the diffusion of digital technologies on a world scale. The imaginary is of exogenous impacts of technological innovation, guided by key individuals who value progressively more intense connectivity via networks' (Mansell, 2012, p. 5). Mansell also points to the presence of alternative imaginaries that coexist with dominant ones and express different values and expectations about digital transformation. These contributions highlight how imaginaries shape collective expectations, institutional strategies and design logics, even when not consciously theorised. Within this context, the concept of the social imaginary provides a framework for analysing how financial infrastructures, such as banking systems, payment interfaces and regulatory frameworks, reflect, stabilise or contest shared visions of value, trust and responsibility. In this sense, imaginaries are not merely ideas about money but wider held ideas and expectations in society that make monetary institutions intelligible and legitimate.

With reference to these insights, this thesis approaches money as something imagined and made meaningful through historically and institutionally embedded social imaginaries. In this framing, money is not only a technical or economic artefact but also a moral and political construct, reflecting how societies define authority, obligation, and belonging. Payment and banking systems materialise these imaginaries through their infrastructures and everyday practices. The coexistence of different imaginaries, state-centred, market-based, and technological, continues to shape how financial institutions are organised and how trust is produced in the digital era. The following section develops this argument by examining the imaginaries of financial institutions and the shifting relationship between centralised and decentralised forms of authority in contemporary finance.

2.3.2 The Imaginaries of Financial Institutions

Financial institutions materialise the imaginaries of money by transforming abstract trust and symbolic value into organisational and material forms such as currencies and sovereign bonds. While the common authority for the issuance of money today usually refers to state institutions, for example national central banks, the imaginaries

surrounding financial authority, including who issues, regulates, and governs money and its services, have changed over time, similar to earlier examples such as *Jiaozi*. In contemporary contexts, new technologies such as blockchain encryption often originate in the private sector. These innovations may subsequently be adopted by the financial industry in both public service contexts and private sector applications, as seen in the invention of Bitcoin (Dodd, 2010), which posed a decentralised challenge to state authority in legitimising, issuing, storing and managing value. Such technologies may later be adapted by centralised authorities, leading to state-backed versions of digital money that mirror private innovations. Central Bank Digital Currencies and the future European digital currency represent state-issued cryptocurrencies that undertake a higher degree of surveillance and governance than non-state digital currencies.

This subsection draws on the State Theory of Money and its later development into Modern Monetary Theory to demonstrate how authorship, trust, and governance of money have evolved, together with the changing imaginaries of financial institutions. Chartalism, or the State Theory of Money, locates monetary legitimacy in sovereign power. Money functions because the state declares it to exist and enforces its circulation through taxation, legal tender laws, and regulatory infrastructures (Knapp, Lucas and Bonar, 1973; Ingham, 2013). Within this imaginary, value is not discovered by markets but proclaimed and stabilised by law. The Chartalist perspective understands money as a legal artefact and a juridical expression of state power. It emphasises how taxation and governance embed collective dependence on state-issued currency, making participation in the monetary system inseparable from participation in political order (Sawyer, 2007; Wray, 2015).

In this state-centred imaginary, the authority of financial institutions derives from their proximity to sovereignty. Central banks and regulatory bodies formalise this hierarchy by managing credit and currency as extensions of public administration. Long-established national banking services, often referred to as pillar banks, operate under the supervision and governance of national central banks. However, scepticism developed in post-war and post-colonial contexts, prompting a reconsideration of how state power interacts with financial institutions. Similarly, following the financial crisis and bank collapse in Ireland in 2008, public confidence in state financial authority declined (Spek and Leeuwen, 2018; Dodd, 2012). Similar scepticism also developed in post-war and post-colonial contexts, prompting a reconsideration of how state power interacts with financial institutions. Neo-Chartalism, also known as Modern Monetary

Theory, emerged as an attempt to reframe this relationship. MMT rearticulates the Chartalist position by arguing that sovereign states issuing their own fiat currencies can create money to meet social goals, constrained not by fiscal balance but by inflation or real resource limits (Juniper, Sharpe and Watts, 2014). It reframes the relationship between the state and financial institutions as a coordinated apparatus of social provisioning rather than a neutral economic mechanism (Tymoigne, 2014). Through this framework, state power remains the dominant imaginary that defines monetary legitimacy, rendering banking an extension of governance.

At the same time, the institutional history of money also reveals competing imaginaries of authority. Alongside the state-centred model, market and corporate institutions have long claimed their own legitimacy grounded in efficiency, innovation and expertise. One alternative imaginary positions the financial institution not as an arm of the state but as a rational market intermediary that manages value across borders. From early joint-stock banks to global investment houses, financial institutions have cultivated the image of being neutral coordinators of trust, operating within regulatory frameworks while claiming autonomy from political control. Dodd (2016) observes that the authority of such institutions often rests not on sovereignty but on the symbolic performance of stability and transparency. A further imaginary emerges from community-based and cooperative forms of money and banking. These systems draw legitimacy from shared membership, local investment and mutual oversight. Their authority rests on the idea that trust is strengthened through social proximity and collective ownership rather than through state power or market expertise. Historical examples include cooperative credit unions, mutual savings banks and local currencies, each of which frames monetary value as something sustained through community participation and reciprocal obligations.

In the digital era, these state and corporate imaginaries intersect and evolve. Platform-based and digitally native financial institutions such as Revolut in its early stages, N26, and Wise have emerged as neobanks (Anon., 2024). These institutions no longer position themselves merely as alternatives for those excluded from, or dissatisfied with pillar banks but seek recognition as formal banking providers that are not tied to a single national identity. A neobank may obtain a banking licence from one jurisdiction while operating across several others, relying on regulatory recognition rather than exclusive national mandates. Their legitimacy is maintained through compliance certification, technological security, and the everyday reliability of their

interfaces. Their authority is therefore infrastructural rather than territorial and symbolic, expressing a decentralised imaginary of financial institutions in which a single nation state is no longer required to legitimise financial services. This development aligns with Ingham's (1996) argument that money represents a 'claim upon society'. By extension, these platform-based institutions manage such societal claims through data infrastructures rather than through physical sovereignty. Trust is encoded in design features such as biometric verification, instant notifications, and algorithmic fraud detection, which substitute formal state-backing with procedural assurance. These forms of infrastructural authority will be examined further in *Chapter 3*.

The coexistence of centralised and decentralised state imaginaries in the current financial market illustrates a broader shift from political to infrastructural forms of authority. Financial institutions, whether state or non-state, sustain legitimacy by demonstrating their capacity to manage risk, ensure reliability, and enact governance through technical systems. Their power is expressed through protocols, standards, and databases rather than through law alone. Giddens (1990) characterises modern trust as grounded in 'abstract systems', detached from face-to-face relations and anchored in expert knowledge. Neobanks and platform intermediaries extend this abstraction by embedding institutional authority into code and interface design. Users encounter institutional power not as policy or regulation but as verification steps, terms of service, and algorithmic risk scoring. Accordingly, the distinction between centralised and decentralised institutions becomes increasingly blurred.

Although neobanks present themselves as decentralised alternatives to traditional banking, they remain deeply tied to centralised infrastructures such as licensing regimes, payment networks, and data governance frameworks that connect them back to state and supranational authorities. The European Central Bank, for instance, underwrites the stability of the euro even as fintech actors innovate new access points. This interplay of decentralisation and re-centralisation reflects a long sociological pattern identified by Simmel (2011) and Ingham (2013), in which new forms of monetary mediation periodically challenge existing forms of institutional control. The imaginaries of financial institutions therefore encompass both sovereignty and innovation, authority and efficiency. State banks embody the collective imaginary of political order, while neobanks materialise the technological imaginary of frictionless connectivity. Both, however, rely on institutional infrastructures of trust that are

historically continuous. Whether guaranteed by law or by code, monetary legitimacy remains a social construction. For contemporary sociology of money, this continuity shows that institutional power is not abolished by digital transformation but rearticulated by actors through new digital and symbolic forms. As Lessig (1999) argues that ‘code is law’, and programmable infrastructures introduce new sites in which authority is expressed and contested.

Conclusion

To conclude, this chapter argues that money is not an unchangeable object but an evolving social institution. Its material forms change with technology and governance, while its social power persists through institutions that organise trust, value, and responsibility. Classic theories of origin and the Irish case demonstrate that monetary change is inseparable from changes in political authority and collective identity. Simmel’s framework and later work show that money mediates relations, structures obligation, and is sustained through institutional design. The lens of social imaginaries clarifies how these meanings and institutions are made durable. In the digital era, imaginaries of technological progress and frictionless connectivity contend with imaginaries that emphasise public purpose, accountability, and control, a tension identified in Mansell’s work on the internet. Platformised banking reworks these competing imaginaries in code, standards, and interfaces. The next chapter examines the digitalisation of banking and how competing imaginaries are translated into concrete practices of verification, compliance, and user experience, and how institutional power is rearticulated through contemporary financial platforms.

Chapter 3 Banking Digitalised: Institutions and Platforms

Introduction

Building on the previous chapter's discussion of how financial institutions materialise the social imaginaries of money and finance, this chapter situates the sociological theories of money within the digital era, particularly amid the processes of digitalisation and platformisation. It examines the digitalisation of banking through the lens of the social construction of technology (SCOT), arguing that a range of relevant social actors use digital infrastructures to materialise the imaginaries of money, payment, and banking in different designs that are widely adopted by users. Drawing from three sub-disciplines within sociology, namely, economic sociology, science and technology studies (STS), and sociology of media, this chapter emphasises that technological change in banking interacts with social, political, economic, and cultural factors. These interactions may resolve existing issues, reinforce embedded marginalisation and inequality, or produce new barriers and exclusions.

This chapter begins by tracing the process of digitalisation in banking and identifies three main stages of development as (a) backend digitisation, (b) service digitalisation, and (c) platformisation. It provides examples of each stage and examines how they shape the overall trajectory of digitalisation in banking. The objective of this chapter is to recognise how digital technologies have been adopted in banking and to situate platform technologies within this context, considering the reasons they were introduced, their continuous development, and the issues they aim to solve, may enhance, or may cause. These developments are analysed against the backdrop of long-standing forms of exclusion, marginalisation, and inequality embedded within banking institutions. The chapter investigates how digital technologies interact with the social, economic, political, and cultural factors that influence users' ability to access and use the financial services they require.

By tracing the progression from digitisation to platformisation, the chapter situates digitalisation as both a technological and institutional process. It argues that while earlier stages of digitalisation expanded remote access and introduced a limited level of personalisation, the platform stage represents a systemic and institutional transformation that reconfigures infrastructures, relationships, and responsibilities.

Platformisation reorganises banking around data extraction, data analysis, automation, and the use of non-human agents and challenges existing regulatory frameworks by national and EU central banks. These changes raise important sociological questions concerning algorithmic governance, transparency, trust, and user responsibility. Accordingly, this chapter establishes the conceptual foundation for the methodological design and empirical analysis presented in the next chapters. It positions mobile banking apps as sectoral platforms that embody the convergence of financial, technological, media and regulatory imaginaries.

3.1 Digitisation, Digitalisation, and Platformisation of Banking

Building on the previous chapter's discussion of the imaginaries and institutional foundations of money and banking, this section examines how those imaginaries become embedded in technological infrastructures through the process of digitalisation. It draws on the social construction of technology (SCOT) framework to argue that technological development in banking does not advance in a linear or deterministic way but is shaped by the institutional, cultural, and political contexts in which it emerges. Drawing on Giddens' (1990) definition of modern institutions, this section understands them as dependent on abstract systems of expertise. These systems mediate trust across distance. Digital infrastructures extend this abstraction by embedding trust, authority and risk management into code and design. This section argues that three stages of digitalisation in banking can be distinguished, since each stage has its own characteristics, particularly in the platform era. Digitalisation of banking has been taking place for over fifty years (Papathomas and Konteos, 2024). The first stage, backend digitisation (Brennen and Kreiss, 2016) began with back-office processes, where account information was stored digitally for institutional efficiency rather than customer interaction (ibid). The next phase, referred to here as service digitalisation, expanded digital technologies to the customer side, first through telephone banking, then web portals, and later self-service machines. With the advancement of smartphones and wireless connectivity, the introduction of banking apps has propelled this process into the platformisation stage where banking services were offered through digitally native apps and new types of neobanks emerged as businesses.. This section traces the progression of digitalisation in banking and explains how each stage has shaped the relationships among technology, banking institutions, and users. It shows that

digitalisation in banking is not only a technical development but also an institutional and cultural process driven by a range of social actors that continuously reshapes financial infrastructures and impacts user practices.

3.1.1 Early Digitisation and Digitalisation of Banking

Digitisation refers to the conversion of analogue information into digital form, typically for internal efficiency (Brennen and Kreiss, 2016). It contributes to understanding the broader socio-technical processes through which digital infrastructures become integrated into organisations and everyday practices (Tilson et al., 2010). There are different stages of digitalisation, from the initial digitisation stage focused on converting non-digital data into digital format, to later stages of digital infrastructures that operate through digitally adapted or native logics. The later stage is conceptualised as platformisation. Platformisation describes the penetration of platform logics—programmability, datafication, multi-sided interactions—into different sectors (Poell, Nieborg and van Dijck, 2019). These distinctions allow us to understand the introduction of back-office computing and app-based banking not as a linear story of technological progress but as a series of institutional and cultural shifts that continuously reconfigure financial services.

The earliest digitisation in banking occurred in the 1950s and 1960s, when commercial banks in the US and Europe invested in mainframe computers to automate accounting, record-keeping, and cheque clearing (Batiz-Lazo and Wood, 2002). These systems were invisible to customers but transformative for institutions, enabling higher volumes of national and international transactions, reducing errors, and providing the infrastructure for future innovations. In Ireland, large pillar banks such as Bank of Ireland (BOI) and Allied Irish Banks (AIB) adopted digital technologies a little later than US financial institutions (Casey, 2012).

By the 1970s and 1980s, digitisation began to extend into customer-facing technologies. The introduction of the Automated Teller Machine (ATM) allowed customers to withdraw cash outside branch hours, transforming expectations around access to money (Ritzer and Jurgenson, 2010). ATMs were widely deployed in Ireland by the late 1980s, with BOI and AIB competing to roll out networks that would later be consolidated into shared infrastructures. Electronic Funds Transfer (EFT) systems also became prominent, enabling faster interbank payments and forming the basis for debit

card networks. The international expansion of Visa and Mastercard during this period integrated Irish banks into global financial infrastructures, signalling the early stages of financial globalisation (Maurer, 2014). Although these developments increased convenience for individual customers who were willing and able to adapt to change, they also began to shift the locus of trust from interpersonal relationships with bank staff to interactions with machines (ibid). Customers accustomed to in-branch service now created personal passwords to interact with screens, keypads, and cards, relying on institutional assurances that these technologies were secure. Trust was mediated less through social presence and more through interface design, a theme that would intensify in later decades.

The 1990s and 2000s marked the next stage of digitalisation of banking through early web portals. With the rise of the internet, banks launched websites that allowed customers to view balances, pay bills, and transfer funds. In Ireland, AIB introduced online banking in 1996, followed by Bank of Ireland's '365 Online' service in 1997. By the early 2000s, online banking had become a mainstream service, though access remained uneven due to fragmented broadband penetration, the cost of broadband (INOU[7], 2021) and digital literacy gaps (Corr, 2006). These are the two of the eariliset forms of digital divides. Online banking extended access beyond branches but also introduced new barriers. Authentication devices such as code cards or physical tokens mailed to customers were common in Ireland and across Europe. These provided additional layers of security but required users to navigate complex verification processes. As Malinka et al. (2022) observe, such devices were early forms of two-factor authentication, reflecting the tension between convenience and security in digital finance. For some users, particularly older populations and those with limited digital literacy, these barriers reinforce existing exclusion and introduce new forms of digital exclusion.

The digitalisation of banking in this period also reflected broader internet culture. Banks increasingly positioned themselves as 24/7 service providers, aligning with the always-on ethos of the web (Baym, 2010). Yet unlike entertainment or communication platforms, banks remained tightly regulated, and their digitalisation in Ireland was constrained by compliance with financial authorities such as the Central Bank of Ireland and the European Central Bank. This demonstrates how sectoral

[7] Stands for Irish National Organisation of the Unemployed

specificity shapes digitalisation: while media platforms could experiment with user-generated content, both pillar and neo banks had to navigate strict security and identification requirements.

3.1.2 Banking Apps: Sectoral Platforms of Finance

The concept of 'platform' emerges with the development of Web 2.0, initially in a figurative sense as a metaphor (Srnicek, 2019). According to Gillespie (2017, n.p.), the concept of 'platform first took root in the lexicography of social media, it was both leaning on and jettisoning a more specific computational meaning: a programmable infrastructure upon which other software can be built and run, like the operating systems in our computers and gaming consoles, or information services that provide APIs so developers can design additional layers of functionality.' The concept of the platform has been extended from its traditional meaning to describe social media and other digital services. This application links earlier understandings of platforms to the interactive and participatory dynamics of Web 2.0 and, later, to the more integrated and data-driven systems associated with Web 4.0. This expansion from the computational study of programmability intersects with the idea that a platform conveys openness, facilitating interactions and the exchange of information (Thorhauge et al., 2024). This utilises the metaphorical power familiar to both users and developers of new digital platforms, redefining its computational definition as 'an architecture from which to speak or act, like a train platform or a political stage' (Gillespie, 2017, n.p.). However, the use of 'platform' as a metaphor raises some concerns, as the power of metaphorical construction lies in its ability to bridge a significant semantic gap (van Dijck et al., 2018). Initially conceptualised in digital contexts for social media studies (Montfort and Bogost, 2009) and game studies (Jones and Thiruvathukal, 2012), the platform metaphor may understate the fact that digital services, now referred to as platforms, are not entirely flat in a figurative sense. To explain, Gillespie (2018) argues that social media platforms structure and channel information through algorithms and user arrangements, forming complex landscapes rather than flat, open spaces. This complexity influences the flow of information which can be modified by designers, challenging the simplistic metaphor of a platform as a level and open space for public, visible, and potentially viral activity (ibid).

Additionally, the term ‘platform’ obscures the diversity and conflicts within social media communities. It falsely suggests uniformity among vast user groups and overlooks the contentious relationship between users and platforms, particularly concerning identity and purpose (Margetts et al., 2021). The metaphorical use of ‘platform’ may also conceal the extensive labour involved in maintaining these services, such as algorithm design and content moderation (Burges et al., 2016). The concept may underemphasise human capital in platform economies, thus overlooking issues arising from underpaid and unpaid labour within the platform ecosystem (Howson et al., 2023; Pulignano et al., 2024; Thorhauge et al., 2024). This lack of recognition and understanding of the human effort behind social media platforms raises important questions about responsibility, bias, and transparency (Fisher, 2015). Content is created by ‘users’, who may acquire latent identities as content creators. This role, akin to a profession, often goes unrecognised as part of the provider side in platform economies. The type of labour they engage in has been labelled as ‘aspirational labour’ (Duffy, 2016), ‘relational labour’ (Baym, 2015), ‘hope labour’ (Mackenzie and McKinlay, 2021), and ‘play labour’ (Kücklich, 2005). As a result, platform labour, along with its responsibilities and risks, becomes privatised, leaving users—both as content creators and as audiences—vulnerable in terms of their intellectual property and contributions, with little or no facility to appeal (Adams and Grosse Ruse-Khan, 2021; Glatt, 2023).

With the programmable characteristics of platforms and their metaphorical origins, the concept is never uniformly defined and is continually evolving. The concept of the platform is delineated differently depending on the research focus. From a business studies perspective, Coyle (2018, p.51) defines platforms as ‘features of firms and of markets, involving both production and exchange’, emphasising their interchangeability across industries. Conversely, in computational studies, where the notion of platforms initially emerged, they are defined as (re-)programmable software systems centred around the systematic collection and processing of user data (Helmond, 2015; Langlois and Elmer, 2013; Plantin and de Seta., 2019). With the conceptualisation of platformisation and platform power in media theory, and science and technology studies (STS), platforms are understood as programmable and data-driven infrastructures situated within multidisciplinary contexts. These infrastructures connect key stakeholders, or sides, in platform markets—primarily end-users and complementors. In this sense, platforms are defined as ‘(re-)programmable digital infrastructures that facilitate and shape personalised interactions among end-users and

complementors, organised through the systematic collection, algorithmic processing, monetisation, and circulation of data' (Poell et al., 2019, n.p.).

With the understanding of how the definitions of platforms evolve, this chapter views platforms as a shifting concept with core characteristics, similar to money as addressed in Chapter 2. These include the interaction of service and content providers with users, their continuous adaptability to incorporate new functions and host new technologies as they emerge, and their engagement with third parties such as data brokers and external service providers (Kenney and Zysman, 2020). Therefore, instead of focusing on the design of platforms, this chapter highlights the evolution of banking services into platforms and the evolution of platform design with the theory of platformisation (Poell et al., 2019; van Dijck et al., 2019). According to Poell et al. (2019, n.p.), 'Platformisation is defined as the penetration of infrastructures, economic processes and governmental frameworks of digital platforms in different economic sectors and spheres of life, as well as the reorganisation of cultural practices and imaginations around these platforms.' In the context of digital banking, this means viewing mobile banking apps as platforms that foster digital banking services within the app, without needing external support, and that enable personalised interactions (Poell, Nieborg, and van Dijck, 2019). Mobile banking services, reflected in their design, emphasise interactivity and personalisation by users, evident in the platform features in their design strategies. They reshape the old banking norms established by the long history of modern and contemporary banking with pillar banks, as well as digital banking services relying on the webpage. They emphasise instant service at all times (Liu et al., 2019), thereby removing designated account managers and leaving users in a more self-managed environment. As an emerging phenomenon, current scholarly work is still developing and research remains ongoing on the impact of turning mobile banking apps into platforms. This gap motivates the emphasis on service design in this PhD thesis, with the methodological approach explained in detail in *Chapter 4* and the findings presented in *Chapter 5*.

The application of the platform model to digital financial services demonstrates an amalgamation of media and financial services within a single platform (Swartz, 2020). Digital payment solutions have a tradition of fostering social connections, a characteristic inherent in the nature of money itself (Simmel, 2011). M-Pesa, integrated with mobile connectivity, has always been entwined with texting, recognised as a 'text-a-payment' service (Maurer, 2014, p.15). AliPay introduced a chat function,

allowing users to communicate within the app, sending memes and emojis with each transaction or without any financial exchanges as a mere text message (Guo and Bouwman, 2016). This adds social and affective forms of communication to payment services. As these payment platforms added social functions and embraced the mediating role of money and payments, social media platforms began exploring their role in the payment industry. Two examples are WeChat, the largest instant messaging application in China by Tencent, and WhatsApp, available in many parts of the world, by Meta (Wan et al., 2019). WeChat, in contrast to AliPay, was a social media platform that developed an in-house payment service, WeChat Pay, facilitating financial exchanges alongside interpersonal communication without the need to switch platforms (Li et al., 2023). WhatsApp, while not fully developing an in-house payment service—partly due to the concurrent development of Facebook Pay (Swartz, 2020)—has become a widely used infrastructure for sharing third-party payment links (Munongo et al., 2021). These links, combined with WhatsApp's social functions, have transformed it into a platform of hybrid functions, encompassing both payment and messaging, indicating a further convergence of media with the digital finance industry.

Platformisation is a well-established concept in media sociology and is introduced here to explain how developments in the media industry influence the banking sector. This subsection draws on the concept of media convergence, which Jenkins (2006) describes as the flow of content across multiple media channels and the active participation of users in shaping that flow. Latzer (2013) provides a more recent account of convergence as a long-term structural process in which technological, economic and institutional boundaries become increasingly interconnected. These perspectives clarify how platformisation enables banking apps to integrate communication functions, data flows and service features that were once separated across different industries. According to Jenkins (2004, p.33), media convergence theory was developed to 'identify major sites of tension and transition shaping the media environment for the coming decade.' Jenkins (2004, p.33) defines media convergence as more than simply a technological shift; it alters the relationship between existing technologies, industries, markets, genres and audiences. Convergence refers to a process, not an endpoint (Jenkins, 2004, p.33). Using this framework, this section identifies three design paths in the early design strategies of mobile banking services. These design paths focus on different social functions of money: interpersonal transactions, purchasing and trading functions, and the role of money and banking institutions in communities as a form of

critical public service. For today's mobile banking services, these paths may seem primary, but they represent the beginning of development and are therefore still valuable to investigate in order to inform the updated empirical design of current mobile banking applications using the framework of social imaginaries in *Chapter 5*.

The first type of design in early mobile banking apps, emphasises payment activity between individuals. For example, M-Pesa, aimed to include the unbanked and allow people to transfer money to each other. This extension to telecommunication technology, allows users to re-envision phone credits as a monetary token and facilitates the sending and receiving of money for broader applications (Maurer, 2014). The second type also extends existing services, with a different focus on the purchasing function of money. For example, AliPay provides customers of Taobao, an e-commerce platform, with a tailored payment solution for seamless and in-house payments when purchasing on this platform (Qin, 2017). It offers smoother authentication and enhanced security for digital transactions, while also accommodating more frequent refunds that may arise due to dissatisfaction with online purchases (ibid). The third early design of digital financial services aligns with the concept of a digital infrastructure and emphasises banking as a social service essential for all. Here a service is offered by a single organisation to its customers, enabling access to limited real-life services in an online format. This approach is adopted by major banks and payment providers, such as postal orders supported by post offices, in response to the digital economy's growing demand for online purchases (van Meer, 2006; Cocheo, 2001). Therefore, in this type of design, facilitating payments is crucial because it represents the core service provided by banks. This design trend is evident in many early web banking service launches, where an additional physical verification device is often used. The additional verification device, similar to two-factor authentication (2FA) but with a physical key generating a random four- or six-digit code akin to a single-use PIN, would be sent to users by post upon setting up online banking (Malinka et al., 2022). For example, Barclays UK employed such a device for an early version of Barclays Online—primarily referring to their web banking service and the banking app—from its initial launch until late 2020. They then transitioned to a digital online version of single-use verification codes, often sent to the registered number, as a form of two-factor authentication. Allied Irish Banks (AIB), while no longer issuing those devices for authorisation to use their mobile apps, still allowed the use of those devices until late 2023.

Advancing from the early designs of web banking, and with the increasing ubiquity of smartphones, digital banking shifted towards app-based platforms and became more personalised (Mbama et al., 2018). Early banking apps, developed by external technology companies, begin integrating functionalities to access bank services. For instance, AliPay in China added features enabling users to interact with their banks through the app. While informal mobile payment services emerged in the Global South from 2007 to 2014, pillar banks were slower in app development (Lu, 2018) due to regulatory restrictions on introducing new technology. Consequently, AliPay emerged as a mediator between users and banking services in everyday life contexts (ibid). Users can set up an AliPay account, supported by their bank account, for instant transactions that circumvent restrictions and processing fees typically associated with different banks. This functionality is then utilised for social transactions, such as splitting bills and sending money as 'gifts' (Mauss, 2004), fostering connections and socialisation (Dodd, 2016). It is also favoured by small business owners, like street food vendors, as a preferred payment method for quick and economical transactions (Guo and Bouwman, 2016, p.56). This only requires a smartphone, as opposed to the more complex setups needed for point-of-sale (POS) machines, which are powered by established pillar banks, most likely in connection with the state, and payment network providers like Visa, Mastercard, UnionPay in China, and American Express in the US (Wijst, 1989). With the mediating function and availability of customising payment apps according to user preferences, digital financial services were transformed into platforms (van Dijck, Nieborg and Poell, 2019) in the sense defined earlier, marking the onset of the 'platformisation' of banking (Swartz, 2020; Westermeier, 2020). The convergence continues as technology companies now aim to expand and provide formal banking services, moving beyond their roles as external third-party payment platforms (Nguyen and Mogaji, 2022). Klarna, launched in 2005 as an invoice-based buy-now-pay-later (BNPL) service, quickly evolved into a popular payment platform facilitating credit payment services in Europe with e-commerce, and began advertising as an 'easier and safer' alternative to traditional credit payment services (Johnson et al., 2021). In 2017, Klarna obtained a banking licence, was renamed Klarna Bank AB, and began issuing its own bank cards supported by Visa, although Klarna is not regulated by the Financial Conduct Authority (FCA) (ibid).

A critical moment in the platform stage of digitalisation is the invention of the 'neobank', with Starling Bank UK (SBUK) often cited as one of the first fully digital-native retail banks in Europe. Neobanks are defined as digital-native banks providing their services solely through apps. Founded in 2014, SBUK was designed from the outset as an app-based service without physical branches, operating exclusively through mobile devices. Unlike earlier forms of digitalisation—such as web banking services provided by pillar banks—Starling did not adapt an existing institutional structure to a new delivery channel but emerged within the digital environment itself. Its design logic today reflects the assumptions of a digital-native user base, with interfaces built around mobile affordances, biometric authentication, and instant notifications, rather than retrofitting older practices of account management (Monis and Pai, 2023). SBUK received its UK banking licence (authorisation with restrictions) from the Prudential Regulation Authority and Financial Conduct Authority in July 2016, progressed to full permissions in 2017, and launched personal current accounts that spring. The case of SBUK therefore represents both a technological and regulatory milestone. Technologically, it exemplifies how banking can be reimagined as a platform—programmable, continuously updated, and oriented to speed, convenience, and personalisation. Institutionally, it demonstrates that regulators are prepared to recognise app-based, branchless services as legitimate banks within the established financial system. The launch and growth of SBUK also signals a broader transformation in the imaginaries of banking from being tied to the material and spatial presence of branches to being understood as a service embedded in mobile platforms and governed by design choices and algorithms. This shift illustrates how the digitalisation of banking culminates in the platform stage, where the design and governance of apps play a central role in structuring user experience, industry competition, and regulatory oversight.

Conceptually, platforms are multi-sided infrastructures that mediate interactions among users, providers, and regulators (Helmond, 2015). More specifically in finance, banking apps mediate between customers, banks, third-party service providers, and states. They are not simply technological artefacts but socio-technical assemblages that embody institutional logics, regulatory requirements, and user imaginaries. As sectoral platforms, banking apps demonstrate several defining characteristics that distinguish them from earlier forms of digitalisation. One of the most significant is programmability. As these services are built as software infrastructures, they can be

continually updated, patched, and redesigned. This allows banks to respond rapidly to regulatory changes, market demands, or user feedback, in ways that physical branches or even static web portals could not. Programmability thus creates a more dynamic financial service environment but also places users in a constant state of adaptation, as the features, interfaces, and conditions of their accounts may shift without warning.

A second defining characteristic is personalisation. Banking apps offer customised notifications, budgeting tools, spending insights, and prompts that tailor the experience to the individual user. This design logic is often presented as empowering, giving users new tools to manage their finances. At the same time, it responsibilises them by shifting greater emphasis onto individual financial decision-making and self-discipline. Where earlier banking systems provided personal managers or collective arrangements, apps increasingly position the user as the primary actor accountable for their financial health, mediated by automated prompts and nudges.

A third element is datafication. Every interaction within the app generates data, from routine account checks to more complex transactions. Data is not only necessary for compliance and risk assessment but also becomes resources for targeted marketing, product development, and internal efficiency. Datafication thus embeds financial services within wider infrastructures of surveillance and commodification, linking individual financial practices to larger ecosystems of data analytics and digital profiling. Finally, banking apps embody governance by design. Institutional rules are not only expressed in extensive terms and conditions, but are embedded within the interface itself (Puppis, Mansell and Bulck, 2024). The ways in which buttons are arranged, limits are set, or processes are automated directly shape what users can and cannot do. This shifts significant responsibility onto individuals, who must navigate the boundaries and constraints set by the app's design rather than by human intermediaries. Together, these features highlight how platformisation reorganises financial interactions. Where once customers relied on in-branch managers to mediate their banking relationships, they now engage with interfaces that both enable and constrain their actions. The app environment becomes a site of governance in its own right, embedding institutional authority in design choices and transforming the experience and imaginaries of banking into a fundamentally platformised form.

3.1.3 Designs, Platforms, and Convergence

From a social construction of technology (SCOT) perspective, the design of financial technologies reflects the economic, institutional, and social negotiations that shape technological development. Design is never neutral (Bijker, 1999; Bijker, Hughes and Pinch, 2012). Interfaces embed assumptions about users, practices, and responsibilities, shaping how people interact with financial technologies (Light, Burgess and Duguay, 2018). In the context of banking apps, design logics influence user behaviour and experience. For example, push notifications that remind users to save or budget exemplify nudging strategies that encourage specific actions while presenting them as personal choices (Thaler and Sunstein, 2009; Allon, 2014). Layouts that highlight certain features such as quick transfers or premium upgrades attempt to attract user attention and prioritise institutional objectives. Visual elements including colour schemes, cultural symbols, and icons reflect particular imaginaries of financial services that may emphasise efficiency or security. Platform design also redistributes responsibility for financial management and risk. In a platform setting where users interact with non-human agents, responsibility and risk often shifts onto users. This issue will be examined in the empirical analysis of apps, as outlined in the methodological design in *Chapter 4* and the findings in *Chapter 5*. The removal of dedicated account managers and the emphasis on self-service app environments can impose labour-like tasks on users, aligning with broader neoliberal trends of responsibilisation (Langley, 2008).

Drawing on findings from Baym (2015) and Duffy (2016) in the context of social media, users often perform relational and aspirational labour without formal recognition. Similarly, banking apps enlist users in continuous monitoring, verification, and self-management, blurring the line between consuming and producing financial services. The convergence of media and finance becomes visible as the participatory logics that underpin social platforms are translated into financial technologies, where interaction and data generation constitute new forms of user labour. Interfaces that assume high levels of digital literacy or access to advanced smartphones can inadvertently exclude older populations or those in lower socio-economic groups. In Ireland, where digital divides persist along urban, rural, and generational lines (O'Donnell, 2019), such design assumptions risk amplifying existing inequalities.

Within this trajectory, the processes of domestication and reinvention provide useful ways to understand how technologies become embedded in everyday financial life. Domestication refers to how users integrate new technologies into existing routines and social practices, adapting them to their own contexts rather than using them exactly as designers intended (Silverstone and Hirsch, 1992; Hartmann, 2023). The domestication process often develops in stages, including initial appropriation, practical incorporation and longer-term conversion, each shaped by users' skills, circumstances and expectations. Reinvention describes how users modify or reinterpret technologies after adoption, producing unanticipated forms of use and meaning (Bijker, 1999; Eglash et al., 2004). In the context of digital banking, these concepts highlight that platformisation is not a one-way process of technological diffusion but an ongoing negotiation between institutional design and everyday practice.

The platformisation of banking raises several sociological implications. First, it reframes trust. Traditional banking relied on interpersonal relations with staff and the physical solidity of branches, whereas platform banking demands trust in interfaces, algorithms, and distant institutions. Although digital services increase convenience, they may erode institutional trust as users encounter fragmented or contradictory information online (Fungáčová, Hasan and Weill, 2019). Second, platformisation intensifies responsibilisation. By placing tools for budgeting, investing, and risk assessment directly in users' hands, apps reinforce the idea that financial well-being depends on individual discipline rather than structural inequality. This echoes Zelizer's (2017) argument that money is always socially differentiated. Design features that appear universal often conceal how exclusion and inequality are embedded within financial infrastructures. Third, platformisation embeds banking within the broader platform economy. As van Dijck, Poell and de Waal (2018) argue, platforms restructure social life by extending infrastructural power across multiple sectors. Banking apps are not isolated utilities but nodes in wider ecosystems that connect financial, social, and cultural practices. The integration of payment functions into messaging apps such as WhatsApp or WeChat, for example, demonstrates how financial exchange and social interaction increasingly converge.

Tracing the progression from early digitisation to service digitalisation and finally to platformisation shows that the transformation of banking is not only technological but also institutional and cultural. Banking apps represent the culmination of this trajectory as sectoral platforms that reorganise financial infrastructures,

responsibilise users, and mediate imaginaries of money and finance. For this thesis, focusing on the platform stage provides a conceptual foundation for analysing banking apps as more than digital tools. Their design embodies institutional logics, regulatory constraints, and cultural imaginaries, making them key sites for sociological investigation.

3.2 From Legacy Exclusion to Platformised Divide

The digitalisation of banking has often been presented by commercial organisations as a solution to long-standing problems of financial access, efficiency and inclusion. Early mobile money systems, such as M-Pesa in Kenya and GCash in the Philippines, are frequently cited as successful examples. These systems initially operated as basic mobile payment services rather than fully platformised ecosystems, and their later expansion into broader financial and commercial functions illustrates the shift from digital payment tools to platform-based infrastructures. At that time, digital banking services were introduced as alternative financial tools for those restricted from accessing formal banking. These services appeared to improve financial inclusion by offering low-cost, flexible ways to transfer and store money. However, while such services operated as substitutes for traditional banking, they were not formally regulated as banks and therefore could not be legally recognised as banking institutions. The launch of Starling Bank in the United Kingdom marked a turning point. As the first neobank to operate entirely through a mobile application while holding a formal banking licence, it challenged the dominance of traditional pillar banks and signalled the emergence of banking platforms as legitimate financial institutions rather than alternative payment solutions. This development made it possible to analyse such platforms in terms of their contributions to and complications of financial inclusion, marginalisation, and exclusion.

This section examines how successive generations of digital technologies—each introduced as innovative solutions to inclusion—have interacted with and reshaped these long-standing issues. As discussed in the previous section, design is never neutral, and technologies are never cost-free (Bijker, Hughes and Pinch, 1987; Suchman, 2007). From a sociological perspective, technological change in banking must be understood as a socially embedded and shaped process rather than a technically determined process(Granovetter, 1985; Giddens, 1990). Banking is a critical social institution

intertwined with the economy, culture and society more generally while money is a symbol representing value and trust (Simmel, 2011; Dodd, 2016). Its digitalisation, and particularly its platformisation, affects not only how services are delivered but also how people experience and imagine banking, money, authority, and inclusion. This section therefore explores how the digitalisation and platformisation of banking interacts with the long-standing exclusions embedded within financial institutions. It identifies continuities between historical legacies of inequality and new digital divides that emerge in the platform era, arguing that digital infrastructures reconfigure but do not eliminate exclusion. Instead, exclusion becomes embedded in new technical and institutional forms.

3.2.1 Legacy Exclusions in Banking

The institutionalisation of banking is marked by long-standing patterns of exclusion that reflect the social, political, and economic conditions under which modern financial systems were established. These exclusions were embedded within historical structures such as patriarchal property regimes, colonial hierarchies, and class-based access to credit (Ingham, 1996; Allen and Pryke, 1999; Maurer, 2014). As a result, banking institutions inherited social arrangements that continue to shape who can access financial services and under what terms. As Chapter 2 demonstrated, financial institutions derive legitimacy from broader social imaginaries of authority and trust. However, these imaginaries were historically shaped by exclusionary social relations. The embeddedness of banking within wider institutional frameworks means that inequalities in gender, immigrant status, and geography became normalised features of financial infrastructures (Giddens, 1990; Granovetter, 1985).

Gender inequality illustrates how exclusion can become institutionalised in banking. Modern banking emerged in societies where women were denied equal rights to property, inheritance, and formal employment (Allon, 2014). In Ireland, women could not independently open a bank account until the late twentieth century, reflecting legal and cultural assumptions that tied financial identity to the male household head (Valiulis, 1995). Even after legal reforms, bias persisted in access to credit and loans. Research shows that financial institutions often evaluate women's creditworthiness through assumptions about family obligations and income stability, leading to structural disadvantages (Brana, 2013; Kupec, 2018). Such examples demonstrate how apparently

neutral systems of financial assessment reproduce gendered expectations and reinforce economic dependence.

Immigrant status is another factor in financial exclusion. As Krumer-Nevo, Gorodzeisky and Saar-Heiman (2017) argue, legacy banking infrastructures were designed for stable populations and have not adapted to the realities of contemporary mobility. Immigrants therefore experience dual exclusion, lacking sufficient documentation for host-country banks while also being marginalised in their home countries because their income originates abroad (Maurer, 2014). Banking systems traditionally rely on documentation standards that privilege settled residents and long-term citizens, such as proof of address, employment history, or tax records (Pollard, 1996; Dymski, 2005). In Ireland, documentation requirements continue to create barriers for immigrants, refugees, and temporary workers, many of whom face difficulties providing locally recognised documentation and therefore cannot open an account with a pillar bank (Littlewood, 2017). Colonial histories have also left deep institutional traces. In territories such as India, Hong Kong, and Kenya, colonial banking systems were designed to serve settlers and colonial administrations while excluding local populations from credit and capital (Chan, 1996; Jayaram, 2011; Wainaina, Arnot and Chege, 2011). After independence, these systems were largely preserved due to institutional inertia, thereby embedding discrimination into the structure of financial access. In Ireland, exclusion took distinctive forms through the dominance of pillar banks, which historically linked access to financial services with land ownership, formal employment, and stable residence. Rural communities, low-income groups, and informal workers were often marginalised by the branch-based model. Credit unions provided important community-based alternatives but remained shaped by local power relations and limited reach (Corr, 2006).

These legacies demonstrate that exclusion in banking is not simply the result of individual bias but the outcome of institutional and historical embeddedness, and wider social contexts. Understanding these legacy exclusions are essential for this thesis as they form the institutional and cultural background against which the digitalisation and platformisation of banking unfold. As banking shifts from physical branches to digital platforms, these inherited inequalities do not disappear but are translated into new technical and procedural forms. Documentation requirements become algorithmic verification steps, and geographic or class-based access barriers are reconfigured through digital literacy, device ownership, and connectivity. By tracing how these

historical exclusions persist within digital infrastructures, the thesis situates platformised banking within a longer continuum of social and institutional inequality. This framing provides the foundation for analysing how contemporary banking apps both reproduce and reimagine these exclusions through their design and governance practices. The next section examines how digitalisation and platformisation interact with these entrenched inequalities. It considers how the transition to digital infrastructures reconfigures, and in some cases amplifies, these structural exclusions through new forms of digital divide.

3.2.2 Digital Divide in Platformised Banking

As discussed in the previous section, the digitalisation of banking interacts with existing exclusions that are deeply embedded in financial institutions. These exclusions do not disappear with technological change but are often reproduced in new forms. The digital divide provides a framework for understanding how inequalities are rearticulated through the adoption of digital and platform-based banking systems. The concept of the digital divide was originally proposed in the United States in the mid-1990s and was officially adopted by the US Department of Commerce's National Telecommunications and Information Administration (NTIA; van Dijk, 2006). According to van Dijk (2017, p. 221), the term 'digital divide' 'commonly refers to the gap between those who do and those who do not have access to new forms of information technology. Most often these forms are computers and their networks, but other digital equipment such as mobile telephony and digital television are not ruled out by some users of the term.' Initially, the digital divide focused on physical access to digital technologies (van Dijk, 2017). As the concept evolved, it came to encompass broader issues of access and use, highlighting that some individuals benefit from digital technology while others are disadvantaged (van Dijk, 2020).

The digital divide is now widely recognised as a multidimensional and cumulative phenomenon that cannot be reduced to a simple binary of access and non-access. It involves four interrelated levels: the motivational divide, the material and access divide, the skills divide, and the usage divide (van Dijk, 2012, 2020). Each level of division influences the next, producing layered inequalities in people's ability to benefit from digital infrastructures. In the context of banking, these divides shape who can adopt digital services, how effectively they can use them, and how they experience

inclusion or exclusion. Although digitalisation is often presented as a means to enhance accessibility and inclusion, it also generates new forms of inequality that mirror older social divides. The digital divide captures these disparities in access to and use of digital technologies. Following van Dijk (2012, 2017, 2020), the digital divide is not a simple binary between those who are online and those who are not, but a multidimensional phenomenon consisting of four interrelated levels: motivational, material and access, skills, and usage divides. Each level reflects a different aspect of inequality and influences the next. Within platform banking, these divides determine who can adopt digital services, how effectively they can use them, and how they experience inclusion or exclusion in wider society.

The first level concerns users' willingness or desire to engage with digital technology, referred to as the motivational divide. In the context of platform banking, users may remain reluctant to adopt digital services because of concerns about security, fraud, and the loss of interpersonal trust. Older adults in particular often prefer face-to-face interactions, which historically anchored their confidence in financial institutions (Sheil and Malone, 2022). As Giddens (1990) argues, modern trust depends on faith in abstract systems. When banking shifts entirely to digital interfaces, this trust must be transferred from human relationships to algorithmic and institutional ones, a transition not all users find easy or desirable.

The second level is the material and access divide. For banking platforms, this concerns the physical and infrastructural conditions required for digital participation. Access to reliable broadband, compatible devices, and secure connections is uneven across social groups and regions. In Ireland, broadband coverage remains limited in some rural areas (O'Donnell, 2019), and low-income households are less likely to own smartphones with the latest operating systems capable of supporting the latest banking applications. For these users, the closure of local bank branches and the migration of services online may further restrict rather than expand access.

The third level is the skills divide, which involves differences in digital literacy and the ability to navigate online environments. Even when users have access to technology, they may lack the knowledge or confidence to perform financial tasks securely. Older users and those with limited literacy skills or educational attainment often find app-based interfaces confusing, while immigrants may face linguistic or procedural barriers during verification processes that require familiarity with local bureaucratic norms (Littlewood, 2017). These skill-related inequalities translate into

differing capacities to manage accounts, transfer funds, or interpret automated notifications.

Finally, the fourth level is the usage divide, referring to disparities in how people use digital technologies once they have access. Some individuals rely on apps only for basic transactions, while others employ them for investment, budgeting, or saving. These differences are shaped by digital competence, income, and the level of trust in digital infrastructures. As van Dijk (2020) notes, inequalities in use are the most persistent because they accumulate over time: those with greater skills and confidence deepen their engagement, while others remain confined to minimal functions.

Digital divides therefore represent a continuation of historical inequalities in new technological forms. They reveal how access to the benefits of digitalisation is stratified by age, education, income, immigrant status, and geography. For banking institutions, these divides challenge the assumption that digital transformation automatically generates inclusion. Instead, digitalisation often shifts responsibility onto users, who must acquire the devices, skills, and trust necessary to participate. For this thesis, the four-level model of digital divides provides a conceptual framework for analysing how platformised banking redistributes access,responsibility and impacts inclusion and exclusion. It connects sociological theories of embedded inequality with the technological realities of digital infrastructures, demonstrating that platformisation does not erase structural barriers per se,but reconfigures them through new material and institutional forms.

3.2.3 Financial Platform Divides

The convergence of digital infrastructures and financial institutions gives rise to a new form of inequality. Drawing on the previous discussion of legacy access to banking divides and the four levels of the digital divide, this subsection argues that the convergence of these two forms of inequality in the context of platformised banking constitutes platformised divides. These divides are not merely technological but also institutional and financial. It emerges at the intersection of long-standing financial exclusions and the multi-layered digital divides, reflecting how platformisation fuses financial and digital systems to produce new boundaries of inclusion and exclusion that are entangled rather than separate.

The platformised divide encompasses barriers to access from both the perspective of banking regulation and governance, as well as from the perspective of digital participation. Access to a banking app cannot occur without first gaining access to banking itself. This recalls the dual regulation of banking apps as sectoral platforms, where entry requires the motivation, material means, skills, and usage capacity necessary to meet both financial requirements and the affordances of the digital platform.

In traditional banking, exclusion was often defined by documentation, income, gender, or geographical distance (Maurer, 2014). In digital banking, exclusion is shaped by data infrastructures, verification processes, and algorithmic decision-making (Swartz, 2020). Platformisation reorganises these systems by embedding financial authority within code and interfaces. Access to banking services increasingly depends on the ability to engage with digital infrastructures that are both highly automated and tightly regulated. As Giddens (1990) suggests, modern trust relies on abstract systems. In platform banking, this trust must extend to algorithmic operations that are largely invisible to users.

Neobanks illustrate this reconfiguration. Institutions such as Starling Bank UK and Revolut began as technologically agile alternatives to traditional pillar banks, promising ease of access and personalised services through mobile devices. They initially targeted users excluded from or frustrated with the bureaucratic processes of pillar banks. Yet, as neobanks formalised their operations and sought regulatory recognition, they reintroduced many of the same verification and compliance requirements that historically constrained access (Murinde, Rizopoulos and Zachariadis, 2022; Avignone et al., 2021). The result is an environment in which users gain convenience but face intensified surveillance and self-responsibilisation. Automation reduces interpersonal labour between banking customer/users and staff but demands continuous user participation through verification, monitoring, and self-management.

Algorithmic decision-making further transforms how exclusion operates. Digital profiling, often presented as a neutral form of efficiency, reproduces and extends social bias. Gupta and Kiran (2024) demonstrate how automated classification systems draw on existing social data to reinforce inequalities of gender, age, and consumption. For example, Bobel et al. (2020) find that essential items such as period products can be categorised as luxury goods in credit scoring systems, producing gendered disadvantages. Similarly, identity verification technologies such as facial recognition or

biometric scans impose new burdens on users while raising concerns about privacy and data ownership (Pope, 2023). These mechanisms generate what can be understood as algorithmic exclusion—a form of stratification produced by opaque data-driven systems that determine users' legitimacy within financial infrastructures (Hellerger and Poell, 2018).

The platformised divide therefore represents a convergence of financial and digital inequalities. It extends beyond earlier understandings of the digital divide by recognising that access to digital technology alone does not guarantee participation in platform economies. Instead, users must navigate multiple, overlapping systems of financial verification, digital literacy, and algorithmic governance. Those who possess the necessary digital competence, stable income, and compliant data profiles are included, while others remain marginalised or subject to intensified scrutiny.

This entanglement between financial and digital systems redefines the nature of participation itself. Platforms operate as hybrid institutions that are privately organised but often reliant on public authority and state support, as the post-2008 banking bailouts in Ireland demonstrated. They are technologically mediated and legally regulated, yet their infrastructures can embed institutional power within design logics that privilege particular forms of identity, data and behaviour. As a result, the platformised divide is not static but dynamic, constantly shifting as platforms evolve, regulators intervene, and users adapt. For this thesis, the conceptualisation of the platformised divide provides a sociological framework for understanding how digitalisation and financialisation converge in the platform economy. It connects the legacy exclusions of banking, the digital divides of technology adoption, and the emerging inequalities of automation and algorithmic governance. In doing so, it highlights how platformisation produces new hierarchies of access and responsibility that are embedded in code, regulation, and everyday financial practice. This argument forms the conceptual bridge to the next chapter, which examines how these dynamics can be studied empirically through the design and operation of mobile banking apps. These dynamics of convergence and platformisation will be further explained with platform features of automation and chatbot meditated conversation and algorithmic processing in banking, redistributing tasks, trust, and responsibility between institutions and users.

3.3 Automation, Responsibility, and the FinTech Industry

‘The platformisation of banking, as outlined in the previous sections, is not simply a matter of technological diffusion or adoption. It involves processes of socio-technical translation and construction, and in some cases domestication or rejection, as institutions and users interpret and reshape digital banking in practice. Banking apps do not emerge fully formed but are made through a complex interplay of software design, regulatory oversight, institutional strategies, and industry partnerships. This section turns from the historical and structural overview of digitalisation (3.1) and the paradox of inclusion and exclusion in technology (3.2) to examine the actual processes by which banking platforms are built and maintained. Banking apps today are not isolated tools but infrastructures that integrate multiple financial functions. They are shaped by design choices, regulatory frameworks, and the involvement of FinTech industries that provide underlying technologies such as automated customer service, fraud detection, and digital payment rails. Understanding the making of banking platforms requires attention to both the micro level of interface design and automation (chatbots, nudges, AI-driven interactions) and the macro level of financial innovation and institutional transformation (FinTech ecosystems, venture capital funding, regulatory sandboxes).

3.3.1 Chatbots and Automated Customer Service

One of the most visible ways in which platformisation transforms banking is the replacement of human customer service with automated systems. Chatbots, virtual assistants, and automated phone systems are central features of contemporary banking apps, reflecting broader technological shifts in service industries. Historically, banks rely heavily on front-line staff to mediate customer relations. Personal relationships with bank managers or tellers played a critical role in establishing trust and resolving problems (Allen and Pryke, 1999). As digitalisation advances, call centres become the dominant form of customer support, often outsourced to offshore locations as part of wider trends in service-labour globalisation (Taylor and Bain, 2005). Chatbots represent the latest stage in this trajectory, replacing not only the location of service labour but the human element itself.

The introduction of live chat technology in digital finance furthers media convergence and transforms the banking experience by employing an ‘instant’ and

interactive operating model. This is a key characteristic of platformised digital financial services (Gillespie, 2017; Swartz, 2020). During this evolution—as part of the platformisation of banking—mobile apps are promoted as more efficient platforms than web and telephone banking. They offer interfaces that enable seamless interaction with app-based services. This envisions a service expected to provide a level of care and attentiveness comparable to in-person services, with the added convenience of being accessible 'anywhere, anytime' (Vanderheiden, 1997; Rubens et al., 2014, p.172). The design of these mobile apps, incorporating live chat functionality, introduces internet-mediated services to a general user base, catalysing the use of computational technology to deliver customer assistance (Lee and Chen, 2022).

Live chat technology was not invented specifically for digital finance. Before its introduction to financial services, it was prevalent inthe development of Web 2.0 (Baym, 2010). Web 2.0 denotes websites and applications that enable user-generated content and greater interactivity and collaboration (ibid). Historically, live chat was operated by human agents on webpages and software to provide flexible assistance, though it was not originally designed for instant communication (Zuboff, 2015). . Later, as large international e-commerce companies like Amazon expanded, outsourcing and cloud-sourcing labour became strategies to ensure continuously available services (ibid). While this can reduce pressure on local labour, especially in terms of costs and working hours, standardising services by training all support agents poses a significant challenge (Zuboff, 2019). Furthermore, with outsourced labour often located in the Global South—particularly in regions like Nigeria and India—and service providers in the Global North, there is criticism of overseas agents for a perceived lack of expertise due to cultural differences between service users and service support staff (Taylor and Bain, 2004). Locality, with respect to regional policies and regulations, therefore plays a critical role in service usage, potentially leading to variations in expectations and interactions due to different cultural norms and practices (Muhic and Johansson, 2014).

To address the socio-cultural implications caused by cloud-sourcing labour and to advance live chat into a truly instant service, computational technology was researched, developed, and employed to meet the increasing demands of digital services and their users. Today, live chat services typically rely on chatbots to offer free, interactive, and instant conversations (Zuboff, 2015). Computer-supported 'live chat agents' were rapidly introduced as real-time assistants within customer support (Maedche et al., 2019). This subsection distinguishes three key terminologies in the

context of digital finance platforms: chatbot-mediated communication (CBMC), computer-mediated communication (CMC), and artificial intelligence-mediated communication (AI-MC). Although service providers often advertise these with overlapping functions, it is important to differentiate them for clarity.

CBMC is a subset of CMC and refers to communication facilitated by chatbots that operate through computer programming. This modality encompasses established characteristics inherent to CMC—namely, a requirement for technical literacy—as well as emerging issues arising from the conceptualisation and proliferation of human–computer communication. The concept of CMC originates in the 1970s with the introduction of electronic mail (email) and the development of chat programs within ARPANET in the USA (Abbate, 2000; Kell, 1988). Initially, CMC included computer conferencing, email, relay chat lines, and Multi-User Dungeons (MUDs) (Metz, 1994; Mansell, 2012). Early research primarily focused on the role of the 'computer' as a medium for interpersonal communication among end-users. However, as computational communication technology advanced, developers expanded the role of the 'computer' beyond being a mere medium to an active participant (Mansell and Steinmueller, 2000). Consequently, pedagogical agents were created to assist users by guiding them through pre-programmed answers and hyperlinks (Dalby, 2005), which can be seen as the primitive form of CBMC.

Clippy is one of the best-known pedagogical agents. It was an embedded, animated paperclip avatar in Microsoft Word that attempted to guide users through tasks and provide contextual help. It reflects the initial design intention to incorporate non-human agents to meet the need for 'instant' responses by pre-programming automated answers to frequently asked questions in a manner akin to interacting with a human agent. Despite its decade-long existence from 1996 to 2006, Clippy was widely disliked by users (Baym et al., 2019). Its invention drew on Nass and Reeves's theory of 'computers as social actors' (CASA) (Gambino, Fox and Ratan, 2020), which aimed to guide users to interact with computers as if they were human (ibid). CASA, explains how people communicate with media and machines, demonstrating social potential. While a guiding theory for Clippy and similar assistants, it stems from computer science and does not fit the conceptual framework for this chapter. Drawing on NLP, predictive computing, and user goal-modelling, Clippy was expected to predict users' needs and provide smooth assistance (Guzman, 2018). In practice Clippy could not provide human-like communication and became notorious for interrupting when not wanted and

failing to understand when wanted (Dale, 2016). As an early pedagogical agent, it was criticised for the infamous prompt ‘It looks like you’re trying to [insert an action]. Would you like help with that?’ (Baym et al., 2019). While Clippy and other early agents were anthropomorphised in appearance, they were not fully anthropomorphised in their interactions. They engaged users in an interpersonal style, yet often produced disappointing responses such as 'Sorry, I do not understand'. Dalby (2005) highlights a significant issue: these agents struggled to comprehend user problems, and users struggled to locate the appropriate issue in dropdown menus.

The early challenges of pedagogical agents prompted computer scientists to bridge the gap between computers’ comprehension capabilities and users’ descriptions of their needs. Rooted in the limitations of early chatbot technology, this gap persists despite advances in NLP and AI. Early agents relied heavily on recognising specific keywords (Shaw, Johnson and Ganeshan, 1999). As computers struggle with context and colloquial terms, navigating such agents requires users not only to describe issues in plain English but also to use the ‘right term’ recognised by the system (ibid). Users without technical expertise thus depend on programmers’ choices and a high level of technical literacy to communicate problems effectively (Dalby, 2005). Consequently, efforts to enhance NLP capabilities led to the emergence of AI-MC (Algouzi and Alzubi, 2023). Often embodied in chatbot interfaces, AI-MC has the potential to move beyond traditional scripted Q&A interactions (Naaman, 2022) and integrate chatbots as active participants in conversations (Hancock, Naaman and Levy, 2020). AI-MC is defined as a form of interpersonal communication wherein an agent supported by artificial intelligence operates on behalf of a communicator by modifying, enhancing, or generating messages to achieve communication goals (Hancock, Naaman and Levy, 2020, p. 89).

With the advancement of AI-supported chatbots, digital finance platforms have found a solution aligned with the appified design of neobanking and virtual banking. These chatbots can replace human agents for standard procedures like identity verification and authentication (Suhel et al., 2020). The move from knowledge-based AI systems to machine-learning (ML) and generative-AI (GenAI) systems enables chatbots to process unstructured and rich-media content, such as photographs of identification documents (Ait-Mlouk and Jiang, 2020). The new generation of AI chatbots is believed to offer a more secure and efficient experience for users verifying their identity when applying for a banking account online. However, while chatbots enhance the user

experience for some, banking—as a social and critical service—must ensure that all users can benefit from, or at least not be adversely affected by, these solutions (Dodd, 2016). This is particularly important given that personal finance is not optional (ibid). Accordingly, challenges and ethical concerns have emerged as chatbots have become mediating agencies in banking services (Mogaji et al., 2021).

In 2014, SBUK introduced chatbots as 'innovative customer service agents' to assist users registering for a born-digital bank. While intended to simplify account opening, this repositioned chatbots from assistant agents to assessment agents (Letheren and Dootson, 2017). As a result, chatbots evolved to use ML models and facial-recognition technology for enhanced authentication and verification. Although primarily text- or voice-driven, chatbots in digital money services now process visual and biometric data to assist identity verification. While the use of facial-recognition technology is becoming more common, algorithmic biases against people of colour and other minority groups have been found (Smith and Mann, 2024). This may decrease trust in chatbot-mediated support and fuel broader distrust of AI-enabled applications among certain user groups.

The ability and willingness to adopt digital money services is influenced by socio-economic status (SES) and digital literacy (Letheren and Dootson, 2017). The implementation of chatbots and chatbot-assisted facial recognition poses additional barriers and may introduce further biases related to AI intersecting with race (Benjamin, 2019), SES, and literacy—both language and digital (Reddy, Sharma and Chaudhary, 2020). Revolut's chatbot, Rita (2022), prompts users to type a concise question, but many users may lack the expertise to formulate concise queries. It is contradictory for users to need technical sophistication to access technical support and can discourage them from seeking help (Trivedi, 2019). Additionally, AI-enabled communication technology is not yet governed by comprehensive policies and regulations to guide data usage in ML and NLP (Kerr, Barry and Kelleher, 2020). Chatbots may require, store, and extract information from chat data without appropriately informing users. Since the launch of Revolut IE in Ireland, users are consistently required to verify their legal and tax identity as required by all banks regulated by the Central Bank of Ireland. This process often requires multiple forms of identity, most commonly a selfie of the user holding their legal ID. Such a request can make users uneasy due to ambiguity and fears of data misuse or fraud.

Emerging issues of institutionalised discrimination and marginalisation resulting from algorithmic biases lead to a sense of distrust and unfairness. For groups varying by gender, age, socio-political position, and socio-economic status that encounter algorithmic failure—whether caused by technical/design issues or systemic big-data biases—establishing trust with non-human agents becomes increasingly challenging. With the rapid progress of digital technology and the imperative to minimise physical contact during the Covid-19 pandemic, several critical services—such as healthcare, education, and financial services—experience accelerated adaptation, integrating into the digital service ecosystem (Mansell, 2021). These critical services involve a wider group of users and often require access to a higher level of personal data beyond a username and an email account. For instance, when setting up a digital banking account, users typically provide verification of their real name and address, along with supporting documents such as a legal ID and utility bills. Submitting these documents requires a higher level of trust that, prior to digitisation, is supplied by the institution of pillar banks. For in-person banking, this trust extends from trust in public sectors (e.g., the state and other critical institutions) (Buriak et al., 2019). Trust is also fostered through material objects and physical structures (Usher, 2018). In banking, the presence of a physical branch—with security features such as guards, a secure vault, and the apparent permanence of its spatial existence—helps establish a sense of trust within the community (Fungáčová, Hasan, and Weill, 2019). This transition from relying on trust in an impersonal institution to cultivating interpersonal trust in staff and locality is facilitated by tangible elements. Interpersonal connections and interactions with bank staff shape customers' perceptions of expertise and trustworthiness (Rus and Iglič, 2005). When customers engage with staff for consultation and assistance, they often perceive them as knowledgeable, which enhances trust (Knack and Zak, 2003). This trust can extend to the institution as a whole (Kosiba et al., 2018). Prior to digitisation, these interpersonal dynamics are integral to establishing trust in banking.

3.3.2 Risk and Trust in Banking Platforms

Beyond customer service, automation plays a critical role in risk management and compliance. Banking platforms rely on algorithms to monitor transactions, detect fraud, and assess creditworthiness. These systems are deeply entwined with regulatory requirements, particularly in relation to anti-money laundering (AML) and

counter-terrorist financing (CTF). The automation of risk management reflects a broader trend in financialisation, where data is used to model and manage uncertainty (Langley, 2008). Automated systems enable real-time monitoring of vast transaction flows, something impossible through manual oversight. Fraud-detection algorithms flag unusual spending patterns, while machine-learning models assess the likelihood of default based on historical data.

In Ireland, these practices are shaped by both EU and domestic regulations. The Second Payment Services Directive (PSD2) requires strong customer authentication and secure communication protocols, embedding automated checks into every transaction (Central Bank of Ireland, 2019)[8]. The Central Bank of Ireland mandates rigorous AML/CTF compliance, pushing banks to adopt algorithmic monitoring systems that screen transactions for suspicious activity (Central Bank of Ireland, 2020). While these measures enhance security, they also generate new burdens for users, who must navigate two-factor authentication, identity verification, and transaction monitoring. Algorithmic credit scoring further exemplifies the ambivalence of automation. Traditional credit assessments rely on employment records, income, and repayment histories. Today, algorithms increasingly incorporate non-traditional data such as transaction patterns, mobile-phone usage, or even social-media activity (Pasquale, 2015). This expands the scope of surveillance and risks embedding biases. As Benjamin (2019) argues, algorithmic systems often reproduce existing inequalities, disadvantaging minorities, women, and migrants. In Ireland, migrants and younger workers in precarious employment may struggle to build sufficient credit histories, leaving them disadvantaged in algorithmic assessments despite formal access to banking.

These dynamics reflect what Amoore (2020) calls ‘cloud ethics’: the delegation of judgement to opaque algorithmic systems that operate at a distance. For users, decisions about credit or flagged transactions may appear arbitrary, with little transparency or recourse. For regulators, automation raises questions of accountability and oversight, as errors or biases in algorithmic systems can have significant social consequences. Thus, automation in risk management exemplifies how the making of

[8] Second Payment Services Directive (PSD2), which was transposed into Irish law as the European Union (Payment Services) Regulations 2018 (S.I. No. 6/2018), effective from 13 January 2018. The PSD2 mandates strong customer authentication (SCA) and secure communication protocols for electronic payments, embedding automated security checks into transactions. The technical standards for strong customer authentication and common and secure requirements for communication under PSD2 came into force on 14 September 2019.

banking platforms embeds regulatory, institutional, and technological logics into everyday financial interactions. It demonstrates that platforms are not merely user-facing tools but infrastructures of governance and control. While banking rapidly heads toward platformisation, transferring existing trust from in-person to digital banking is challenging. The social construction of trust in banking is relational and depends on socio-demographic indicators. Fungáčová, Hasan, and Weill (2019) conclude from World Values Survey data across 52 countries that access to mass media enhances trust in banks, while internet access erodes it. This suggests that traditional mass media—television, radio, newspapers—may reinforce established narratives and stable images of banking institutions, fostering trust, whereas internet access exposes users to a broader range of voices, including critical perspectives, which can undermine confidence.

Banking, as a critical service, when digitised, encourages users to engage in trust-related activities such as transferring, constructing, reconstructing, and even losing trust, complicating trust dynamics in the digital age. These activities are influenced by both technical and non-technical factors, which should be considered in trust research within digital environments (Buriak et al., 2019). Influenced by a long history of state control and surveillance (Knapp et al., 1973), pillar banks not only provide mainstream services but also assume social functions due to their physical presence (Zelizer, 2017). Traditionally, the essential composition of a functioning town includes a post office, a bank, a public library, and, in Ireland, a church (Whelan, 1988). These establishments serve social functions beyond their practical roles. For instance, the town library often doubles as a community centre hosting social activities (Audunson, 2005). Churches may extend their functions beyond religious practice to shared hobbies that form interpersonal ties (Gallagher, 2009), such as organising travel groups for older community members. Similarly, banks—places where people manage payments—possess social functions beyond financial transactions (Dodd, 2016). By their nature, banks contain items of high monetary value. Consequently, they are designed to appear safe and secure, often featuring metal gates, guards, and fortress-like architecture that symbolises safety (Kerr and Robinson, 2016). Banks therefore often serve as informal landmarks and gathering spots for residents.

Banks are social institutions (Simmel, 2011). The physical design of branches and the social meanings attached to these spaces contribute to the social construction of trust. Two main factors underlie the trustworthiness associated with a physical

branch—both challenging to digitalisation. The first is the tangible sense of security and safety, enduring over time and being part of a larger, trusted national network (Kerr and Robinson, 2016). The second is the bank's entanglement with the collective public of its locality (Long, 1958). Banks connect people through roots in local communities and regional business (DeYoung, Hunter, and Udell, 2004). Choice of bank can depend on generational ties, influence from family members, organisational associations via work or education, and interpersonal connections. The complexity and closeness of these connections necessitate spatial presence and cannot be directly incorporated into the digital platform concept. While the conceptualisation of digital platforms offers practical advantages, the platform metaphor has limitations. Gillespie (2018) argues that the term 'platform' can convey a simplistic, flat, open space, overlooking the complex landscapes shaped by algorithms and user arrangements. Consequently, it may fail to reflect the diversity and conflicts within online communities, inadvertently suggesting uniformity among user groups (Margetts et al., 2021). Moreover, the metaphor often obscures the extensive labour required to maintain these services, such as algorithm design and content moderation (Burges et al., 2016). This raises critical questions about responsibility, bias, and transparency in the continuing development of digital platforms and the platform economy (Fisher, 2015).

de Paoli and Kerr (2008) highlight that research on digitising and internet-oriented trust primarily concentrates on security, technological, and legal solutions, often neglecting user practices and experiences. Since the digitisation of banking services, fairness-related concerns arise in various aspects of digital money and banking activities, particularly in account adaptation (Roy, Devlin, and Sekhon, 2015). These concerns highlight potential issues related to equitable access and treatment within digital banking, emphasising the need to address fairness in constructing trust in the digital sphere (ibid). The adoption of digital banking services can contribute to unfair treatment, undermining the transfer of trust from traditional in-person banking to the digital realm (Gokmenoglu and Amir, 2021). Many banks still rely on outdated standards to evaluate potential customers' accounts and service applications (England, 2003). These standards may have been established decades ago, without accounting for issues such as global immigration, new employment models, gender inclusivity, and algorithmic biases (O'Connor and Silva Afonso, 2019). As a result, they can lead to discriminatory practices and overlook evolving needs and circumstances. In person, these standards offer some flexibility for managers and counter staff to apply localised

judgements. For instance, a branch near a university might be willing to accept an official university letter as proof of identity and address, whereas others may not (Li, 2021). This localised approach allows more contextually relevant assessments and facilitates a more personalised experience, which can demonstrate expertise and professionalism and increase trust. In contrast, digital conversational agents such as chatbots are often limited to identifying specific keywords and phrases. Powered by ML models, including large language models, they may struggle to comprehend documents or information outside pre-existing protocols and training data. As a result, there is a risk of unfair treatment and exclusion of certain groups, particularly when they seek to transition to digital services (Kanungo and Gupta, 2021). Users without viable alternatives may continue to use a service they have lost trust in, leading to a diminished perception of reliability and dependability.

3.3.3 The FinTech Industry

Banking platforms are not made by banks alone. The rise of FinTech transforms the production of financial services, creating an ecosystem of start-ups, technology providers, and partnerships that underpin digitalisation. FinTech refers broadly to the use of technology to innovate financial services, encompassing mobile payments, peer-to-peer lending, robo-advisors, and blockchain applications (Arner, Barberis and Buckley, 2016). While some FinTech firms compete directly with banks, many provide modular services that banks integrate into their platforms. Examples include identity-verification providers, payment processors, and fraud-detection software. In Ireland, Dublin positions itself as a FinTech hub, with government initiatives and industry bodies promoting innovation. The Central Bank of Ireland operates an ‘innovation hub’ to engage with start-ups and explore regulatory sandboxes, reflecting a global trend of balancing innovation with oversight (European Banking Authority, 2019). Irish start-ups such as Fenergo (compliance software), TransferMate (cross-border payments for students), and Stripe (multinational Irish-US payment platform) illustrate how FinTech solutions embed into global banking infrastructures.

Neobanks such as Revolut and N26 highlight the convergence of FinTech and banking. Revolut begins as a FinTech focused on currency exchange but expanded into a full-service platform offering current accounts, investments, and insurance. Its success reflects the scalability of platform models, where new features can be layered onto a

core app infrastructure (Srnicek, 2017). In Ireland, Revolut's expansion demonstrates both the appeal of FinTech solutions and the challenges of regulation. Licensed in Lithuania but operating in Ireland[9] Revolut illustrates how platform infrastructures transcend national boundaries while remaining subject to national and European regulatory regimes. Big Tech firms also play a growing role in making their own payment solutions. Apple Pay and Google Pay integrate payment functions into mobile devices, effectively positioning themselves as intermediaries between users and banks. While these services are widely used in Ireland, they raise questions about data governance and the shifting balance of power between banks and technology companies (Zuboff, 2019). The FinTech industry thus exemplifies how banking platforms are made not only by traditional institutions but through complex networks of actors. These networks are shaped by venture capital, regulatory frameworks, and global competition, embedding financial services within the broader platform economy (van Dijck, Poell and de Waal, 2018).

The development of banking platforms through chatbots, automated systems and FinTech services illustrates how digital finance is produced through the interaction of technological design and institutional practices. Platforms are not neutral technological tools but infrastructures shaped by institutional logics, regulatory frameworks, and market strategies. Their design embodies assumptions about users, redistributes tasks and responsibility, and embeds new forms of surveillance and control. From a sociological perspective, this reinforces the argument that money and banking must be understood as social institutions (Simmel, 2011; Zelizer, 2017; Dodd, 2016). The digitalisation of banking does not erase historical exclusions or inequalities but reconfigures them within platform infrastructures. Chatbots responsibilise users, automation embeds algorithmic governance, and FinTech ecosystems redistribute power between banks, start-ups, and Big Tech. For this thesis, these dynamics underscore the importance of analysing banking apps as sectoral platforms. They are not simply delivery channels but programmable infrastructures that mediate relationships between users, institutions, and regulators. Their making involves technical design, regulatory compliance, and institutional strategy, all of which shape how people experience and imagine money. By situating banking apps within the sociology of technology and

[9] This refers to the period from 2020 to 2023 when Revolut operated Revolut EU in Ireland, only licensed by the Central Bank of Lithuania. Then in March 2023, Revolut launched Revolut IE for Ireland which is licensed by the Central Bank of Ireland. Users in Ireland are then required to use Revolut IE.

platform studies, this section provides the conceptual foundation for later empirical analysis of app design and governance.

Similar to the inherent social functions and meanings of money and its corresponding services—particularly payments—platformised money conveys social meanings related to interpersonal exchanges, trading, purchasing, and banking institutions. This is coupled with the embedded social, political, and economic frameworks of the technological infrastructures of digital platforms, thereby influencing and being influenced by them. The platformisation of personal finance highlights two principal concerns pertaining to prevailing exclusions in banking. First, the incorporation of chatbots as virtual assistants and automation can exacerbate exclusion and introduce new obstacles owing to diverse levels of digital literacy, the use of technological terminology, and users' ability to comprehend and manage associated risks (Mear, 2023; Maedche et al., 2019). Second, the focus on 'personalised service' effectively transfers responsibility and tasks to users by endorsing self-service options, amounting to increased labour for the user (Jin, 2015).

Conclusion

This chapter outlines how the digitalisation of banking unfolds as a socio-technical process that progresses from early digitisation to app-based platformisation. Through this process, design logics, regulatory frameworks, and market strategies reorganise financial infrastructures, redistribute labour and responsibility, and reshape conditions of inclusion and trust. By foregrounding programmability, personalisation, datafication and governance through design, this chapter positions mobile banking apps as sectoral platforms that mediate the social imaginaries of money while reproducing, and in some cases transforming, long-standing inequalities. It also reiterates the importance of the four dimensions of the platformised divide, namely access, skills, literacy and outcomes, together with financial literacy as a cross-cutting form of capability shaping platform participation. The analysis establishes the conceptual foundation for the next chapter, which develops the methodological framework and empirical strategy used to examine how these dynamics operate in practice.

Chapter 4 Methodology

Introduction

This PhD adopts a qualitative methodology as it aims for an in-depth exploration to capture the nuances and spectrum of social changes and meanings brought by the digitisation and platformisation of banking services in Ireland. The qualitative approach enables the researcher to collect lived experiences from both service providers and users (Clark et al., 2021). It also allows the researcher to analyse rich-media data, including visual and textual information from the user interface (UI), which is central to the study of banking apps in this thesis (Rogers, 2013). The methodological design is guided by the ontological position of constructivism and employs the social construction of technology theoretical framework (SCOT) (Bijker, Hughes and Pinch, 2012). The methodology is designed to answer three research questions:

1. What dominant social imaginaries of money, payment, and banking service are represented in the design of mobile banking applications in Ireland?
2. What barriers to access and use exist in mobile banking applications and for whom? Do they vary by user group?
3. Are there policies, strategies, or solutions in place to make banking services more socially inclusive in Ireland?

To comprehensively answer these research questions, the project employed a mixed method approach, including conducting a walkthrough and in-depth review of mobile banking apps (i.e., platforms), conducting interviews with representatives from the banking industry (service providers) and conducting group and one-to-one interviews with banking customers/app users. The research process was divided into three phases. Each phase focused on a different research question, with emerging findings from each phase informing the methodological design of a later phase.

Phase 1 focused on examining the design of mobile banking apps using the digital walkthrough method, designed specifically for studying apps, including the app 'environments of use' and user interface (UI) design. According to Light, Burgess and Duguay (2018), environments of use refers to the broader contextual conditions that

shape how users engage with digital technologies. It includes: (a) *Technological Affordances*: the features and functionalities of a platform that enable or constrain user actions. (b) *Socio-cultural Contexts*: the broader cultural, social, and political influences that shape user interactions. And (c) *Economic and Regulatory Structures*: The business models, regulatory frameworks, and governance structures that influence platform operation and user engagement (ibid). This phase investigated how exclusions could occur in app design.

After obtaining ethical approval from Maynooth University for conducting fieldwork including expert and user interviews *Phase 2* built on the findings of *Phase 1* and addressed the second and third research questions by exploring the design choices made from the perspective of the banking industry. It conducted semi-structured interviews with experts to investigate exclusions and their causes from the service provider's perspective. *Phase 3* focused on the users/customers of mobile banking apps. It used online and in person semi-structured interviews and small group interviews to understand their experiences of forms of exclusion during their use of mobile banking apps, and with broader banking services . Some research questions span multiple phases, as they involve more than one research subject. For example, exclusions were addressed in all three phases, but each phase addressed a different issue, and together they addressed the combination of app design, regulatory frameworks, industry strategies, and user involvement on the creation of barriers and exclusions. Overall, this phased approach ensured that each research question was explored comprehensively while allowing insights from earlier phases to refine subsequent phases.

Phase 1 (Platform) ran from October 2022 to June 2024. The initial walkthrough data collection was conducted from October to December 2022. An additional in-depth content analysis was applied to the Terms and Conditions (T&Cs) files to support step 3, Terms and Conditions (T&Cs), of the six-step modified walkthrough between January and June 2024. This digitally focused research phase modified the walkthrough method (Light, Burgess, and Duguay, 2018) and applied it to study seven commonly used mobile banking apps in Ireland: Bank of Ireland (BOI) 365, An Post Money, Revolut IE, N26, Starling Bank UK, Chase UK, and Klarna. This phase primarily addressed research question 1, by examining how design features embody particular social imaginaries of money, payment, and responsibility. It also operationalised SCOT by tracing how institutional, cultural, and regulatory choices are

stabilised in design artefacts, and how these reflect broader imaginaries of inclusion, efficiency, and responsibilisation.

Phase 2 (Industry) employed a semi-structured interview method to conduct expert interviews with twenty-one experts from four occupational categories within the banking sector: (a) experts from regulatory bodies, (b) developers, designers, and programmers; (c) management including internal bank managers and external consultants and analysts, (d) branch workers, including receptionists, bank tellers, and call centre operators. The industry research phase ran from February to August 2024. Phase 2 contributes primarily to research question 2 and research question 3, by exploring how industry actors frame barriers to access, justify design decisions, and respond to regulatory and competitive pressures. Analytically, this phase applies SCOT to trace how competing relevant social groups (developers, regulators, managers, front-line staff) negotiate the meaning of digital banking. It also reveals how providers envision the 'ideal' user and how these visions shape app development and exclusionary practices.

Phase 3 (User) employed a combination of small group interviews and semi-structured interviews with eleven users from diverse backgrounds. It ran from October 2024 to January 2025 and provided additional insights from the user perspective. The participants were purposefully selected to explore in greater depth the nuanced experiences of barriers to accessing and using banking apps. These participants were described by the experts as 'people who need more attention' (see *Chapter 7*). Some barriers were encountered during users' engagement with the apps. Certain obstacles were eventually resolved through repeated use, while others persisted and continued to create difficulties. These unresolved challenges contributed to declining confidence in both the digital services and the banking institutions that provided them. The user phase verified emerging findings and informed the formation of the final findings. This phase contributes primarily to research question 2, while also cross-checking industry and platform findings by examining lived experiences of exclusion and trust. It situates user experiences within the broader imaginaries of money and responsibility, highlighting how digital divides, socio-economic status, and regulatory practices intersect with app design. Analytically, it integrates SCOT's attention to interpretative flexibility with sociological theories of responsibilisation, showing how users are enrolled into performing financial tasks through app interfaces.

Together, these three phases produce a layered methodological design. *Phase 1* reveals how exclusions and imaginaries are inscribed in the design of banking apps. *Phase 2* situates these design choices within specific institutional and regulatory contexts, while *Phase 3* provides a grounded account of how exclusions and imaginaries are experienced by a sub-set of users. Across all phases, SCOT provides the framework for understanding apps as socially constructed artefacts, while imaginaries (chapter 2) and platform inequalities (chapter 3) guide the analysis of how ideas and technologies mediate responsibility, trust, and inclusion. This integrated approach ensures that the data analysis directly addresses the research questions while remaining theoretically anchored. In the following sections, this chapter outlines in detail the ontological and epistemological commitments of the study, the rationale for the phased design, the specific methods employed, and the novelty of this fieldwork in relation to existing research.

4.1 Phase 1 (Platform)

As this thesis investigates the design of mobile banking apps in Ireland in relation to potential exclusion based on demographics, technology and socio-economic status, it is essential to study the apps themselves, focusing on key features, access and registration processes. A variety of established digital review methods were reviewed, including case studies (Feagin, Orum and Sjoberg, 2016; Yin, 1992), netnography immersion journals (Kozinets, 2022), visual methodology (Rogers, 2013; Rogers, 2021) and journey maps (Chasanidou, Gasparini and Lee, 2015; Howard, 2014). The app walkthrough method was selected (Light, Burgess and Duguay, 2018) as it allows an in-depth and comparative analysis similar to case studies but designed especially for mobile apps. It acknowledges the unique environment of app use as defined above and the mobile operating system as a host for the apps. It is also applicable for rich media data that contains more than one format of media, for example, most apps combine textual and visual data in their user interface (UI) design.

> ‘An app’s vision involves its purpose, target user base, and scenarios of use, which are often communicated through the app provider’s organisational materials. This is not just a question of considering users as markets in the capitalist sense (though this may be important), it also examines conceptions the

app conveys about activities it is supposed to provide, support or enable' (Light, Burgess and Duguay, 2018, p.881).

Banking apps require additional security compared to other everyday use apps and thus the walkthrough was modified with additional steps to address these security features. This will be illustrated in detail in the subsection below.

4.1.1 The Walkthrough Method

The walkthrough method, initially proposed by Light, Burgess and Duguay (2018) was applied and adapted. This method uses 'step-by-step observation and documentation of an app's screens, features, and flows of activity—slowing down the mundane actions and interactions that form part of normal app use in order to make them salient and therefore available for critical analysis' (Light, Burgess and Duguay, 2018, p.882). The original walkthrough method is designed to establish a persona, to register and to log into the app. The app is then analysed through step-by-step observation and recordings using screenshots and fieldnotes focusing on four aspects for evaluation and analysis from: (a) user interface design (UI) including vision, arrangement and operating model, (b) infrastructure and governance, (c) functions and features, (d) narratives including textual content, tone of information and symbolic representation (Light, Burgess and Duguay, 2018). These four aspects apply to the three core stages of app use and each stage could encompass multiple steps of user action and engagements. The three core stages of app use are: (a) registration and entry; (b) everyday use; and (c) app suspension, closure and leaving (ibid). The modified walkthrough of this thesis includes six steps across the three core stages, as shown in *Table 4-1: The Modified Walkthrough* below.

Table 4-1: The Modified Walkthrough

Steps in the modified walkthrough	Position in the three core stages of use by the original walkthrough	Purpose and focuses
Anticipated Use	As a step of stage 1 (registration and entry); involves research on the app store pages and media coverage (advertisement) of the app.	Make it a separate step due to persistent barriers in banking service. For other everyday apps, users may choose to use the app according to their needs; but for banking apps, it may require a two-day evaluation, as the banking apps may not be designed for all, and users therefore need to check their eligibility in the anticipated use step
Entry Page	As a step of stage 1 (registration and entry) showing textual content, visual content and tones.	Greeting page, core in the original walkthrough and preserved for the modified walkthrough in terms of content and tone.
Terms and Conditions	As a step of stage 1 (registration and entry) for the modified walkthrough; Not included the original walkthrough	Banking apps may have multiple T&Cs papers: one for the use of the app, and one for the adoption of the banking service. The latter was not considered for the original walkthrough, but is essential for banking, especially for any potential barrier and misuse of data. The modified walkthrough designed a separate step to conduct a document content analysis for the T&Cs of the banking service.
Authentication and Verification	As a step of stage 1 (registration and entry) for the modified walkthrough; Not included in the original walkthrough	Banking apps require authentication of legal identity, legitimate residency status and permanent address. This involves the use of legal and biometric data and may cause barriers. Verification includes providing multiple contact channels for postal and electronic (SMS and email) notices, as well as registering the device and setting up for two-factor authentication to ensure the security needed for the banking service.
Customer Support	As a step of stage 2 (everyday use) in the dating apps context, where users may use the app regularly and casually for messaging, checking and swapping; this may not apply in the same way to banking apps.	The use of banking apps may not be as actively engaged as other apps. Users are likely to use their banking apps for specific tasks or for seeking help with their accounts. Therefore, the core activity for banking apps is to reach customer support. Hence, this is designed as a step for a walkthrough of available support and any persistent and emergent barriers.
Suspension and Withdrawal of Service	As a step of stage 3 (app suspension, closure and leaving).	Remains mostly the same as the original walkthrough, but this may involve waiting for review of previous actions and using external channels (for example, email and post). In the banking context, app suspension often involves the withdrawal of a service provided and requires the service provider's approval to withdraw, rather than being a single action by the users.

Although the original walkthrough method is uniquely designed to study apps, modifications were made to adapt to banking apps as they demand a higher level of security given the sensitive nature of financial data and embedded legacy exclusions (as discussed in *3.1*). By adding additional steps in the first stage of app use, it allows a more detailed and focused examination of potential barriers caused by the design of the apps on initial access, which is more crucial for banking service than other everyday social apps. The modified walkthrough has six steps as: (a) anticipated use; (b) entry page; (c) Terms and Conditions (T&Cs); (d) authentication and verification; (e) customer support (replacing the original 'everyday use step'); and (f) suspension and withdrawal of service.

In addition to the modified steps, there are two other key differences between the modified walkthrough for this PhD research and the original walkthrough, namely in the researcher's persona and the ontological position (which will be addressed *in Subsection 4.1.3).* In the original walkthrough, the researcher may establish a particularly defined user persona to register and log into the chosen apps for a systematic walkthrough. Later, with continuous use of the app, the walkthrough persona, with corresponding behavioural pattern suiting to this persona, may have personalised curated content, influenced by recommendation algorithms. Additionally, the user persona may also use the app in an unexpected or unintended way by repurposing some functions and restrictions of the apps based on their practices. A user may use the app functions differently than intended. For example, in a research project on personal finance influencer studies on Instagram , there was an unexpected practice of users putting URL links in their bios and posting a 'check the link on my bio' post to bypass Instagram's platform policy of not allowing external links to be included in any posts (Li, Garwood-Cross and Kerr, 2024). The original walkthrough method accommodates these nuances by establishing an 'ideal' persona that is specifically designed for the research. The 'idealness' refers to the persona fitting into the theoretical framework of the research and being designed specifically for the study. This cannot be replicated for this research on banking apps as registering for banking apps requires providing authentic legal identification, in this case, the researcher's own legal identity. Therefore, the persona used in this project remains authentic to the researcher's

true identity and experiences the same barriers intertwined with this identity as a female, non‑white immigrant. This will be addressed in the next subsection.

4.1.2 Positionality

In short, my persona for this research was that of a female international student with a high level of English proficiency and both technological and financial literacy. Drawing on the intersectionality of gender, ethnicity, and socio-economic status, I understand that my positionality shapes how I experience and interpret digital banking. Crenshaw (2013, p. 149) uses the analogy of traffic at an intersection to explain how discrimination 'may flow in one direction, and it may flow in another… sometimes from all of them'. In the context of banking, I recognise that my identity positions me at a particular intersection of privilege and disadvantage. As an Asian woman, I may face certain biases related to ethnicity and gender, while simultaneously benefiting from other forms of privilege such as educational attainment and digital fluency. These entangled positions of advantage and disadvantage must be acknowledged before undertaking the walkthrough and interpreting the data:

1. I am an international migrant in Ireland. In Ireland, migrants may experience different levels of barriers depending on their country of origin. As Ireland is an EU country, it complies with EU finance regulations, meaning any funds coming from outside the EU require a higher level of review. Moreover, there are countries on the high-risk list which face additional financial restrictions; for example, China, where I am originally from. China is on the high-risk list due to a recent illegal off-market currency exchange from Chinese Yuan (CNY) to euros and Pound Sterling (GBP). This practice is driven by two main factors. First, financial institutions in China restrict connections to the SWIFT system in order to protect the domestic payment network, UnionPay. As a result, Chinese students often face difficulties converting currency and transferring money to their country of residence. The process involves higher exchange rates, longer procedures, and extended processing times. Secondly, the students' lack of financial knowledge that the discounted off-market currency exchange may be associated with money laundering which is a criminal offence. As a result, Chinese international students are on the high-risk list for pillar banks in Ireland

and the UK, with any money deposited in cash or coming from outside the EU requiring a more thorough review.

This would normally disadvantage me if I were to move from China toIreland. However, I had the advantage of moving from the UK, where I have four years of banking history prior to moving to Ireland and only needed to transfer funds from my UK banking account to Ireland. This gives me the privilege of using a recognised and trusted legitimate bank according by Irish standards, in this case Barclays. When providing bank details of my Barclays account during registration for Bank of Ireland (BOI) and Revolut, it bypasses the additional step that may occur given my nationality. I also need to acknowledge my employment status as a privilege when conducting the walkthroughs. While on a student visa, I have a full PhD scholarship which provides me with confirmation of income that meets the requirements for account opening by the banking apps. Some migrant workers may not have this at the beginning, and some local residents, if they are in third level education, may also not have it and therefore may result in additional steps.

2. I am a PhD researcher in sociology and have completed an MSc thesis on mobile banking in the UK and Ireland among older people. This means that, although I am a non-native English speaker, I have above-average language proficiency in English. With my prior research on mobile banking and a background in science and technology studies (STS), I have acquired a high level of financial literacy, digital literacy and technological literacy, giving me the privilege to understand the apps more effectively. I also have prior working experience in law, which enables me to read T&Cs and understand the style of writing that is often aligned with legal document writing.
3. As later stages of fieldwork are informed by the preliminary findings of the walkthrough, my personal background as an end user, which includes being an immigrant, a student, a woman and a non-native English speaker, is entangled with the design of the questions, as some of the barriers may be invisible or overlooked if not encountered. For example, as an international student, opening and maintaining a bank account with a pillar bank in Ireland requires both my passport and my Irish residency permit (IRP). While the former is valid for 10 years (expiring 2030), the latter requires yearly renewal. Thus, some banks may require me to validate my IRP yearly, while some banks may not, depending on

how their system is designed. These experiences informed the questions posed to the experts and users, which will be discussed in Chapter 7.

My background may also have affected my interactions with experts and users. I am aware of potential microaggressions, for example, expert interviewees gave online shopping examples to me because they perceived me as a 'young woman'. Further, my background as an international student may also have influenced users who share my identity, with expressions such as 'you know how it is'. This will be addressed further in Section 4.4.

4.1.3 Ontology

The original walkthrough method utilised the theoretical and ontological framework of Actor Network Theory (ANT) (Callon, 1989; Latour, 2005; Latour, 2007). Light, Burgess and Duguay (2018, p.887) state that the conceptualisation framework of the walkthrough method is:

> 'grounded in the principles of Actor-Network Theory, as a specific aspect of Science and Technology Studies. Actor-Network Theory (ANT) foregrounds a relational ontology according to which sociocultural and technical processes are mutually shaping (Callon, 1989; Latour, 2005). Among the actors configured in relation to a particular technology, ANT differentiates between intermediaries and mediators, which can additionally be human or non-human (Latour, 2005). Intermediaries pass meaning along unchanged throughout a network of relations while mediators are transformative—they alter the meaning or circumstances within a system. In the case of apps, user interfaces and functions are therefore understood as non-human actors that can be mediators.' (p.887)

This PhD research continues to use the understanding of apps and UIs as non-human actors and mediators but does not fully adopt the ANT conceptual framework. This is due to its 'flat ontology' (Best, Prantner and Augenstein, 2012), which views both human and non-human entities—in this case, users and providers of the apps, the apps themselves, and UIs—as 'actants' that influence outcomes without a distinct separation between the social and the technical (Latour, 2007). While ANT was developed at the convergence of constructivism and critical realism ontologies

(Cordella and Shaikh, 2006), Knudsen (2023) categorises ANT within new materialisms, alongside material semiotics, posthumanism, multispecies ethnography and vital materialism. This, separates ANTfrom a more focused constructivist ontological stance (Knudsen, 2023), such as that of the social construction of technology (SCOT) (Bijker, Hughes and Pinch, 2012). According to Knudsen (2023, p.1), the main distinction between social constructivism and new materialisms is that 'new materialisms tend to rely on relational or flat ontologies and non-linguistic models. While social constructivist approaches are primarily concerned with showing that knowledge is culturally formed and thus political (deconstruction being the primary strategy), the new materialisms argue for the need to expand the scope of research to include non-humans and their agentive power'.

Moreover, ANT is driven by a network focus that examines how different entities, as mentioned above for both human and non-human, are interconnected in networks that shape technological development and societal change (Krieger and Belliger, 2014), which may result in an oversimplified causal chain explaining some phenomena that need to be addressed within a more unique and individualised context. This fits the original walkthrough, as ANT is used to represent a broader shift towards the dual consideration of technology and culture, rather than solely a computational perspective (Light, Burgess and Duguay, 2018). It enables the method to establish an app's context and then to walk through the programme itself in order to identify key technological mechanisms of cultural meaning (ibid). However, this PhD research needs the walkthrough to focus on existing barriers to accessing an app, and any potential barriers that could occur during use, in order to evaluate whether the app is designed to be socially inclusive. It focuses more on the effects and influence of the technology—that is, the non-human actants (the app itself)—on the human actants (i.e., the end user). It adopts the SCOT framework (as stated in *chapter 1*), viewing the apps as designed technological artefacts that are socially constructed by people, and introduces the concept of social imaginary to present the social shaping process (*see Section 5.1*). It adopts a more social constructivist approach that argues the design, use and meaning of technology are the results of social processes, and examines how technology moves from a state of 'interpretative flexibility' (Bijker, Hughes and Pinch, 2012), where multiple meanings coexist, to a stabilised form accepted by most people within a society (Clayton, 2002).

4.1.4 Selection of Apps

The final sample analysed comprises seven banking apps: Bank of Ireland (BOI) 365, An Post Money, N26, Revolut IE (since March 2023), Chase UK, Starling Bank UK, and Klarna. The inclusion criteria are:

1. The app must operate on all mainstream operating systems (Android, Google and Apple OS);
2. The app must have a banking licence either directly or through a partnership with a third-party service provider, ensuring that they are not merely digital money services but are, in fact, banking services provided via the app (i.e., a digital platform);
3. The app must offer a general account and issue its own bank cards.

With these three selection criteria, this PhD includes a diverse range of banking structures in Ireland. This leads to the inclusion of pillar banks (e.g. BOI 365) and post office money services (e.g. An Post Money) that have become increasingly popular since the withdrawal of Ulster Bank from the Irish market in 2022. It also includes different types of digital-native banking services including different types of neobanks from the decentralised EU wide neobank N26 to the shifting national branches of Revolut (i.e. from Revolut GB to EU in October 2022, to Revolut IE in March 2023), to the UK examples (as discussed in *Chapter 3*) (Chase UK and Starling Bank UK). One digital-native service was selected, Klarna as, at the time of the initial selection of apps, it was the only digital-native service offering credit services through Buy-Now-Pay-Later (BNPL). While Klarna is not always advertised as a bank, it has held a banking licence since 2017 and was officially renamed as Klarna Bank AB[10]. Although it does not officially provide a credit system, it allows users to pay with credit at selected online merchants. It was selected for the uniqueness of its credit service, which was later adopted by other neobanks, along with their emerging credit and personal loan services for selected customers, under the Pay-Later Mode (PLM).

[10] Stands for Aktiebolag in Swedish meaning ‘stock company’. It is equivalent to a ‘limited company’.

4.2 Phase 2 (Industry)

With initial findings from *Phase 1 (Platform)* and the gaps and questions identified in the two literature review chapters (*Chapter 2 and Chapter 3*), *Phase 2 f*ocuses on exploring changing regulatory frameworks and policies, reasons and motivations for implementing and adopting digital technology, and emerging issues associated with the transition to digital and hybrid banking services from the industry's perspective. This called for empirical investigation with experts working in the banking industry to gather insights into their experiences, knowledge and opinions derived from their professional roles (Clark et al., 2021). Semi-structured interviews were used as they combine a set of interview questions (as would be used in structured interviews) while allowing the interviewer to explore particular responses further (Brinkmann, 2014). It ensures a unified standard and/or common research themes across multiple interviewees over a period of time whereby each interviewee is asked the same set of core questions, with prompted discussion that may lead to additional questions based on the individual context (ibid). It also considers reflexivity, recognising that both the researcher and the interviewees' are likely to recognise that the interviewee understands the nature of the research instrument used, which is usually a semi-structured interview or sometimes focus group discussion' (Bryman and Cassell, 2006, p.47).

*B*anking experts were recruited for interview using a convenience sampling method, with a quota targeting four expert or occupational categories: (a) experts from regulatory bodies; (b) developers, user interface (UI) designers, and programmers; (c) experts in management and strategy-making roles, including bank managers, external consultants, and analysts employed by the banks; and (d) experts in customer-facing roles, namely, receptionists, bank tellers, and call centre operators. Three to four experts per category were interviewed in each group to gain a wide range of insights from various positions within the banking industry (See table 4-2 below). Additionally, a gender quota was used to ensure gender diversity within the sample of experts. A gender quota was also applied to the sampling strategy. This ensured the inclusion of at least one female expert in each occupational category.

4.2.1 Interview Design

Phase 2 responds to research gaps identified from the literature review chapters (*Chapter 2* and *3*) and initial findings from *Phase 1* (see *Chapter 5*). To summarise, research gaps identified include gaps between scholarly works and industries' development goals concerning digitalisation for banking service, understanding of cost, and ambiguity, misuse and misunderstanding of current banking terminology. Initial findings call for further investigation with the experts from *Chapter 5*. These include investigating the reasons behind exclusion issues caused by design features. For example, are these exclusions made on purpose or caused by a legacy system that has not yet been updated? This calls for including experts from different occupational roles in banking, across a range of professional seniority. To address the second research question, *Phase 2* uses semi-structured interviews with people from the banking sector, referred to as 'experts', to investigate the regulatory, technological and social dynamics of digital banking from an industry perspective. Semi-structured interviews structure core interview questions while allowing for flexibility in the conversation (Galletta, 2013). They ensure the comparability of interviews among interviewees and keep the key themes relevant to the research (ibid). The interview questions were designed to allow experts with different occupational roles to share experience and insight on common questions across in four sections: (a) digital banking platforms, (b) service design, (c) customer interaction and (d) the broader societal implications of digital finance. Each of the core sections contains two to three core questions with additional prompt questions for flexibility. The expert interview also includes two supporting sections: an initial demographic/background section to understand the context based on different professional roles; and a closing section allowing participants to ask questions and give their final remarks. In total, there were four sections, two of which included two subsections each, in the expert interviews, and each interview lasted from forty-five to sixty minutes. A full interview outline is included as *Appendix 4*.

4.2.2 Sampling

Recruiting experts for interviews presented distinct methodological challenges, as expert or 'elite' participants occupy positions of authority, specialised knowledge, and organisational responsibility. According to Aberbach and Rockman (2002), elite

interviewing requires careful preparation, credibility, and flexibility, as such participants are often highly selective with their time and wary of unsolicited contact. Narratives of recruitment emphasise the importance of legitimacy, trust-building, and clear communication of research aims (Dexter, 2006; Lilleker, 2003). The unique employment roles in banking qualify the experts required in this thesis as 'elite'. Harvey (2011) highlights that elite participants often respond more favourably to personalised approaches and professional channels of contact than to mass recruitment strategies. In practice, this means that researcher credibility, institutional affiliation, and transparent communication of the research purpose are crucial for access (Smith, 2006). In line with this literature, this project combined professional platforms such as LinkedIn with snowball sampling to authenticate the researcher and build trust, while also leveraging personal and institutional networks to reach otherwise inaccessible experts. This approach recognises that access to elite participants is rarely achieved through a single strategy but instead through multiple overlapping practices that signal legitimacy and reduce perceived risk for participants (Mikecz, 2012).

Expert interviews employed a convenience sampling method for online recruitment via social media (Edgar and Manz, 2017), a snowballing sampling method (Naderifar, Goli and Ghaljaie, 2017), and quota sampling to ensure inclusion of a diverse body of experts across different professional roles (Yang and Banamah, 2014). Convenience sampling is a common form of non-probabilistic sampling in which samples are collected based on their accessibility to the researcher. In the context of this PhD research, broader recruitment of participants was done through online channels. This method is suitable for gathering a well-defined, smaller group of potential research participants in order to avoid misuse (Edgar and Manz, 2017). For example, according to Edgar and Manz (2017, p.95), 'a proper use of convenience sampling would be sampling of craigslist, the Silk Road, or other black market services to study cyber-crime communication. Selecting a set of found communications would adequately represent other criminal communication where computer science students do not represent the general public very well'. Therefore, for this research, detailed inclusion criteria (see *Table 4-2: Expert Interview Planned Groups* below) for four categories were defined for recruiting banking experts online.

The four expert categories represent different levels of involvement with banking customers. For example, regulators operate at a high level of policymaking and do not interact directly with individual customers. However, they influence customers

through their impact on retail banks via legislation, guiding strategies, and corporate social responsibility (CSR) requirements (discussed with the AliPay example in *Chapter 3*). Designers, developers, and programmers may not interact directly with customers, but they design mobile apps and backend services that customers use, creating an indirect but important connection. The level of interaction between management staff and customers varies. For internal management, branch managers may not be in customer-facing roles but still have opportunities to directly engage with customers in branches. Other management roles, such as cybersecurity managers, do not have direct customer interactions but handle feedback collected by customer support teams for service improvements. This data is then analysed and further processed before being presented to external consultants. For external management staff, there is minimal contact with customers, as their role primarily involves processing data. Branch workers, also known as customer-facing roles, have high levels of contact and direct interaction with customers. The combination of these four types of experts allows the researcher to collect holistic data on user interactions and feedback received by banking experts. This provides a comprehensive view of the overall banking-customer relationship from the service provider perspective.

Table 4-2: Expert Interview Planned Groups

Group	Description	Role & Contribution
Regulators	Representatives from the Central Bank of Ireland and other regulatory bodies	Offer insights into the regulatory landscape, policies, and constraints or enablers of the digitalisation process in Ireland. Relevant to the introduction of neobanks like Revolut IE.
Designers, Developers, and Programmers	Digital designers/developers from pillar banks and neobanks	**From pillar banks:** Insights on transitioning legacy systems to digital platforms, especially mobile apps. **From neobanks:** Challenges and opportunities in launching a digital-only bank service.
Management Staff	Internal bank managers and external consultants	**Managers:** Insights from daily banking operations and interactions with customers. **Consultants:** Strategic and operational perspectives on digital strategies.
Branch Workers	Bank clerks, phone operator (while not working in the 'branch' but are customer facing roles similar to working in a branch)	Provide understanding of individual customer engagement with banking services. Insights into customer expectations, feedback, and barriers/affordances for different user demographics.

LinkedIn was used to identify and authenticate banking experts for inclusion. However, social media recruitment, especially for this type of expert interviews, is not always effective (Leighton et al., 2021). The expert requirement for this research primarily involves established professionals who may not respond to invitations coming through LinkedIn direct messages, as these messages may be considered spam. For more effective recruitment, two snowballing measures were taken. Snowball sampling is a recruitment strategy that relies on chain-referral, where research participants—both personal and professional contacts of the researcher—are asked to help identify and refer to other potential participants (Parker, Scott and Geddes, 2019). This recruitment approach was chosen because banking experts were more likely to respond to interview invitations through a known channel rather than an open channel like LinkedIn. The researcher utilised offline connections, including career events in universities in Dublin where target organisations presented. A contact card with name, affiliation, mobile

number, and institutional email was provided for any willing representative from targeted organisations to distribute. This card also included a QR code directing to all online professional profiles of the researcher, allowing any potential expert to authenticate the legitimacy of this research and the researcher[11]. Another snowballing strategy was to ask people in the researcher's social network to refer anyone they thought suitable and distribute the inclusion criteria using both professional social media such as LinkedIn and X[12], as well as on private social channels, for example, WhatsApp and Instagram.

Recruiting began in February 2024. Twenty-one interviews were conducted from February 2024 to August 2024,. Of these, three interviews were not transcribed in accordance with the interviewees' preference for no recording[13]. A written summary of the interview was sent to the unrecorded interviewees for approval. Unrecorded summaries were included with other interview transcripts and a standardised analysis method was applied. To ensure a high degree of accuracy, only recorded interviews were used to generate direct quotations. Nonetheless, while it was not possible to quote the three non-recorded experts in the discussion chapter, their insights contributed to the initial coding to find themes and keywords (see *Subsection 4.2.3*).

For quotations, experts were coded based on their professional roles, as their occupations contributed to shaping their experiences, knowledge, and understanding of the sector. The coding system is as follows: R1–R3: Experts from regulatory bodies; D1–D7: Experts working as developers, designers, and programmers; M1–M4: Bank managers of various levels of seniority; C1–C3: External consultants and analysts; BW1–BW4: Customer-facing roles, including receptionists (bank tellers, and call centre operators). *Table 4-3: Professional Background of Experts*, and *Table 4-4: Gender Distribution of Experts*, present details on the diversity of professional backgrounds and the gender distribution of the experts.

[11] The link to the WordPress website is not included as the researcher only paid for the domain for two years from October 2022 to October 2024.
[12] Formerly known as Twitter.
[13] At the beginning of the fieldwork, experts were given the option not to be recorded. Later, recognising the difficulties caused by the lack of recordings for subsequent analysis and interpretation, only experts who agreed to recording were interviewed. Potential ethical concerns arising from this approach will be addressed in *Subsection 4.2.4.*

Table 4-3: Professional Background of Experts

Category	Count
Regulator	4
Developer & Designers - Pillar Bank	2
Developer & Designers - Neobank	3
Developer & Designers - An Post Money	1
Management - Internal Bank Managers	4
Management - External Consultants	3
Branch Workers	4

Table 4-4: Gender Distribution of Experts

Category	Male	Female
Regulators	3	1
Developers and Designers	4	3
Management (Internal & External)	4	3
Branch Workers	4	1

4.2.3 Data Analysis

To analyse and interpret the expert interviews in *Phase 2*, a thematic analysis method was utilised. Thematic analysis is a frequently used technique for analysing qualitative data, particularly 'thick descriptive data' (Naeem et al., 2023, p.1). Thick descriptive data originates from the term 'thick description', originally conceptualised by Geertz (1973, p.3), referring to 'a description that ascribes intentionality to one's behaviour' (Ponterotto, 2006, p.539). This contrasts with 'thin description', which merely states the factual aspects of the observed behaviour without providing any context regarding its causes. Over time, thick description has become a commonly used term in qualitative research, particularly for research using data collected with interviews and ethnography. Geertz (1973, p.9) argues that the data in anthropological writing are 'really our own constructions of other people's constructions of what they and their compatriots are up to', which fits the constructivist ontological view of this PhD research. The term was later developed for broader qualitative research involving participants' experiences and insights based on particular experiences in interviews and ethnographic studies. This PhD research adopts Ponterotto's (2006, p.543) definition of thick description as 'the researcher's task of both describing and interpreting observed social action (or

behaviour) within its particular context'. It acknowledges that thick descriptive data could 'accurately describe observed social actions and assign purpose and intentionality to these actions, by way of the researcher's understanding and clear description of the context under which the social actions took place' (ibid). This aligns well with the type of data provided by the experts from their working experiences and view informed by such experiences.

Thick descriptive data leads to 'thick interpretation, which in turn leads to a thick meaning of the research findings for the researchers, the participants themselves, and the report's intended readership' (Ponterotto, 2006, p.543). As a result, thematic analysis was selected as the analytical method for the interview data to suit the purpose of thick interpretation. Thematic analysis is a qualitative method designed to identify and present recurring patterns, or 'themes', within the data. It typically involves an initial close reading—a careful and sustained interpretation—followed by the identification of emerging and recurring keywords that help construct meaning from the material (Terry et al., 2017). Moreover, according to Beier and Pollio (1994, p.257), thematic analysis is particularly suited for data involving participants—in this case, the four categories of experts based on their professional roles in banking—when contributing data that involves sharing their 'experience of being in a role'. For all interviews conducted for *Phase 2*, the experts were asked to share their experience and insights based on their practice within the organisation. For example, a UI designer would be asked about their experience in designing and maintaining user interfaces. In their case, they do not face customers directly but work on statistical patterns extracted from anonymised user data. In contrast, for a branch worker, the term 'customer' refers to the individuals with whom they interact directly, so the terminologies used by each expert may have different meanings, and the coding process is sensitive to this distinction. Each expert was asked to describe and explain their professional role at the beginning of their interview, allowing them to illustrate an 'ideal form or template' for their role. This approach enabled the researcher to interpret their experience with an awareness of their role and how their experience fits their professional context, including the specific knowledge associated with that role and, potentially, the larger professional goal for the relevant situation (Beier and Pollio, 1994, p.257). It is considered that 'in terms of process, awareness of role seems best described as an experientially shifting gestalt in which the person is simultaneously or successively

aware of the adequacy of fit between a specific role template and the person's body, present context, and/or experience of self and others in that situation' (ibid).

Historically, as a qualitative analytical method, thematic analysis has been criticised for its lack of structure and ambiguity in the processes of interpretation and meaning making. To overcome these limitations, a structured step-by-step process was adopted for thematic analysis (Naeem et al., 2023, pp.2-5). This conceptualisation of thematic analysis encompasses six steps: (a) transcription, familiarisation with the data, and selection of quotations, (b) selection of keywords, (c) coding, (d) theme development, (e) conceptualisation through interpretation of keywords, codes, and themes, and (f) development of a conceptual model.

As the sole interviewer, transcriber, and coder of these interviews, the researcher became intimately familiar with the data. Prior to each interview, expert professional credentials were verified, ensuring familiarity with each expert's background and the context of the interview. Transcriptions were produced using both manual transcription and auto-generated transcriptions provided by university licensed Microsoft Teams as 'live transcription'. All auto-generated transcripts were subsequently proofread by the researcher while listening back to the interview recordings. For *Step 1,* familiarisation with the data was achieved through an initial close reading, during which potential key quotations were highlighted and assigned codes (e.g. 'technology-1' and 'communities-0', with '1' marking broadly positive changes, developments, and views, and '0' marking neutral to negative sentiment). After the initial reading, *Step 2* of the thematic coding involved selecting keywords for informal coding from one transcript from each expert category. From the four coded interviews produced in *Step 2*, a draft codebook was developed, as shown in the final column below *Table 4-5: Themes and Keywords for Expert Interview Coding*. This draft codebook was then used for *Step 3*[14] coding. After the coding was finalised, four themes—revised from the initial four sections of the interview design (see *Appendix 4*)—were contextualised as *Column 1* in *Table 4-5* below, leading to the development of themes in *Step 4*. To finalise the codebook as presented in this chapter, comments were added to facilitate the initial conceptualisation and interpretation of keywords, codes, and themes as *Step 5.* A final development of a conceptual model, *Step 6,* will be presented in *Chapter 6* and the first section of *Chapter 7.*

[14] Coding was conducted using Qualtrics.

Table 4-5: Themes and Keywords for Expert Interview Coding

Theme	Comments	Codes
Institution	This theme recognises when experts address the concept, definition, and institutional structure of banks, including contemporary banking systems. It covers the role of banks as financial institutions, organisational policies, governance frameworks, and the positioning of banks within the broader socio-economic context.	*Regulation:* Central Bank, policy, law legislation, blurring lines (uncertainty in defining emerging banking services), history and legacy systems, colonialism & postcolonialism. *Banking terminology:* neobank, pillar banks, post office, imaginary.
Technology	This theme applies to discussions about the incorporation, adoption, and resilience of various digital technologies in banking services. It includes references to technological innovations, their implementation, challenges in adoption, and how they impact the evolution of banking services.	*Digitalisation:* motivation, an unavoidable trend, digital policies, cost (to digitalise aligning with technological development). *Barriers:* attitude & willingness, time (technology changes over time and banks may react to changes with a delay for longer internal and external procedures), skills, exceptions.
People	This theme captures discussions about people-related issues, including user categories, exceptions, and relationships between users and banking service providers. It also includes interactions and communication between users and banks, whether through human agents, staff, or non-human agents like chatbots. Mentions of bank staff, such as their training, roles, and challenges, are also included under this theme.	*Individuals:* Customers, users. *Relation:* locality (community & township), connection (social networks), local and personal level decision-making, negotiations, knowing the people, loyalty *Bank:* manager, account
Context	This theme is used for high-level discussions about changes and trends in the banking industry. It includes analyses of how the social roles of banks are evolving, shifts in the relationships and reputation of banks, and the development of new features or disruptive ways of using existing services. Additionally, this theme captures the banking industry's collective imagination, including predictions for the future and broader trends.	The next big thing, roles of banks, social responsibilities, accessibility, innovations, futures

In this analysis, the research questions and theoretical framework directly shaped both the coding process and the interpretation of themes. The overarching questions— how imaginaries of banking are embedded in app design, what barriers to access and use

exist, and how inclusivity is addressed—provided the analytical lens for identifying and refining themes. For example, codes relating to ‘institution’ and ‘context’ were analysed not only descriptively but also through the lens of social imaginaries, highlighting how experts frame banking as a social institution undergoing technological transformation. Similarly, codes under 'technology' and 'people' were connected to the SCOT framework, which emphasises interpretative flexibility in how different actors (designers, regulators, branch staff, and users) construct and stabilise meanings of digital banking. This ensured that the thematic analysis moved beyond cataloguing experiences to examining how expert accounts reveal processes of social construction, stabilisation, and exclusion in platformised banking. In this way, theoretical concepts from SCOT and imaginaries are embedded in the data analysis, linking the emergent themes directly back to the research questions and the conceptual framework of the thesis. In practical terms, the final codebook was mapped to the research questions as follows: ‘Institution’ and ‘Context’ informed research question 3 by surfacing how regulatory, legacy and strategic frames enable or constrain inclusivity; ‘Technology’ and ‘People’ informed research question 2 by identifying where access/use barriers arise and for whom; all four themes contributed to research question 1 by revealing how imaginaries of money, responsibility and ‘ideal users’ are stabilised in design choices and governance by design. This mapping ensured that inductive themes were interpreted through SCOT concepts (interpretative flexibility, stabilisation) and the imaginaries lens, rather than remaining purely descriptive.

4.3 Phase 3 (User interviews)

With the rich data from *Phase 1* and *Phase 2*, *Phase 3* aimed to gather data from a sub-set of end-users of the mobile banking apps studied in *Phase 1*, including people who registered for these apps but struggled to use them. There were two foci for *Phase 3*: (a) to re-examine barriers identified in existing literature and walkthrough findings, and (b) to investigate gaps between service providers' intended design and users, as well as the perceived service available to users in different usage scenarios. Initially, user focus groups were selected as a suitable method for data collection. Ideally, users from different backgrounds would be chosen to form a panel for the focus groups, responding to questions about various usage scenarios (Edgar and Manz, 2017; Clark et al., 2021). However, after organising and conducting a pilot focus group, two issues emerged.

Firstly, people with higher technological literacy were more talkative in the focus groups, while those who struggled were more likely to remain quiet as they may have felt pressured by a lack of knowledge or skill when responding to the usage scenarios, even though they were informed to share their experiences and feelings rather than professional knowledge. Secondly, users from different backgrounds may prefer different formats (online or in-person). For example, people who have already experienced difficulties using digital technology may prefer in-person focus groups or interviews and the inclusion of these people are essential for *Phase 3*.

Phase 3 prioritised people who had experienced forms of marginalisation or barriers including source of income, immigration status, and age (for details see table 4-8) affecting access and use. The researcher, reflecting on the pilot, decided to allow participants to choose to be interviewed individually or participate in a group, rather than being restricted to a structured focus group setting. The format was adjusted to suit their needs. Both semi-structured interviews and focus groups are suitable methods, as they allow the use of a set of established core questions for participants from different backgrounds, while allowing freedom for each individual case to be explored further in depth (Clark et al., 2021).

4.3.1 Question Design

Similar to *Phase 2*, the *Phase 3* questions were organised into four sections. These sections are: (a) Getting a Digital Bank Account, (b) Terms and Conditions (T&Cs) and Communication, (c) Daily Use, and (d) Impact of Digital Payment Service (a slightly broader theme encompassing the transition to apps). In addition, there was a demographic section at the beginning and a closing section at the end for users to ask questions and provide their final remarks. Following the demographic section, each theme in *Phase 3* reflects an issue that required further investigation with the users from either scholarly work, app walkthroughs and/or expert interviews as illustrated in *Table 4-6: Phase 3 Questions for Users Design* below.

Table 4-6: *Phase 3* Questions for Users Design

Theme	Existing Literature	Walkthroughs	Expert Interviews
Getting a Digital Bank Account	See Chapter 3 for legacy barriers, the cost of affording a bank account, and issues for digital natives and immigrants.	Registration, authentication and verification; reflecting on the shift in the role of bank customers in app usage.	Investigate user categorisation by experts and how it differs from how users categorise themselves when registering for a bank account.
Terms and Conditions (T&Cs) and Communication	See Chapter 3 for platformisation and chatbot-mediated banking experience.	T&C step (see Section 5.2)	Reflection on expert insight regarding multiple channel support that may extend beyond the apps.
Daily Use	See Chapter 3 for the digital divide and chatbot-mediated banking experience.	From the Customer Support Step, design a quest prompting participants to reach out to human agents within the app's customer support channel; then ask participants to walk through their own experience of that process, soliciting their thoughts on any barriers.	Inform participants that experts mentioned customers can conduct their mobile banking in the branch with assistance if needed and observe their reaction to this.
Impact of Digital Payment Service	See Chapter 3 for platformisation; Chapter 2 for evolution of money		Reflect on the motivations behind app development as mentioned by experts, and pose questions regarding users' opinions about the changes, investigating any difficulties or barriers they face, and whether there are any positive effects.

Each section of the user interview/focus group contained two to three questions, with some questions asking the participant to complete a 'real life scenario' with the app of their choice. For the details of the question design, please see *Appendix 5: Phase 3 Question Outline.*

4.3.2 Sampling

The sampling strategy for *Phase 3* focused on banking app users in Ireland and was designed to capture lived experiences of financial inclusion and exclusion from the user side. In line with the research questions, this phase explored how users encounter barriers for digital skills, financial and socio-economic status, immigration and citizenship status, to access, how they interpret banking app design, and how these experiences vary across different social groups. Sampling for *Phase 3 (User)* was therefore directly informed by the theoretical SCOTframework, which emphasises that technologies acquire different meanings across relevant social groups. In this phase, the relevant group is the end-user of different countries of origins, age, and source of income, whose experiences and interpretations differ from those of regulators, designers, and bank employees examined in *Phase 2*. SCOT's concept of interpretative flexibility highlights that users' understandings of banking apps are not uniform but shaped by their individual circumstances, such as digital skills, ethnicity and migration status, and financial literacy. These differences influence how users navigate, interpret, and respond to the features and constraints of digital banking platforms. In parallel, the concept of social imaginaries frames how users collectively envision and negotiate ideas of money, finance, and institutional trust through their everyday interactions with mobile banking technologies. Together, these frameworks guided the recruitment of participants who represent diverse experiences of access and exclusion within platformised banking.

To recruit participants, a combination of convenience sampling (Clark et al., 2021; Parker, Scott and Geddes, 2019) and quota sampling (Yang and Banamah, 2014) was employed. Convenience sampling allowed the researcher to recruit participants from accessible networks, both online and offline, while quota sampling ensured that three key user groups were represented: Irish citizens, short-term immigrants, and long-term immigrants. These categories were chosen because both the literature review chapter (see *Chapters 2* and *3*), the findings from the walkthroughs (see *5.3*), my own experience as a user on a residency permit in Ireland using banking apps, and the expert interviews (see *6.2*) all highlighted that migration status, legal residency and citizenship are central to how banks apply due diligence and how users encounter barriers in practice.

Table 4-7: Inclusion Criteria for *Phase 3*

Group	Focus	Description	Reasons for inclusion
Irish Citizens	Age, Socioeconomic Status (SES), Gender, Disabilities, Financial Behaviours	Adults holding Irish citizenship who possess at least one bank account in Ireland.	Main banking population in Ireland
Short-term Immigrants	Legal Vetting, Criteria for High-risk Countries, Banking Needs	Adult migrants intending to stay in Ireland for less than a year. They must have at least one main bank account somewhere (not necessarily with an Irish institution).	Banking needs for mobile population; different experiences with opening and using bank accounts in Ireland, and any legal challenges faced during the process.
Long-term Immigrants	Social/Racial Discrimination, SES, Integration Challenges, Banking Accessibility	Migrants who have resided in Ireland for more than one year and possess at least one bank account with an Irish bank. This group will explore the long-term banking experiences of immigrants, including any faced discrimination, challenges in accessing banking services, and how banking practices have integrated into their daily lives.	Banking experiences of non-citizens with citizen-like banking needs. Any discrimination, challenges in accessing banking services, and how banking practices have integrated into their daily lives.

The inclusion and exclusion criteria are detailed in *Table 4-7* above. Irish citizens were included to represent the mainstream banking population in Ireland, whose experiences provide a baseline for comparison. Short-term immigrants, defined as adult migrants residing in Ireland for less than one year, were included to capture the challenges faced by highly mobile populations, who often encounter difficulties opening or maintaining bank accounts due to verification requirements. Long-term immigrants, defined as migrants residing in Ireland for more than one year and holding at least one Irish bank account, were included to examine how barriers evolve over time and how issues of integration, discrimination, or ongoing verification shape banking practices. The table below shows the detailed participants demographics for *Phase 3*.

Table 4-8: User Demographics

Participants	Citizenship	Income	Locality	Gender	Age	Digital Literacy[15]	English Language
U-A[16]	EU	Scholarship	Urban	M	25-34	High	Proficient[17]
U-B1	Irish	Pension	Small town	F	65+	Low	Native
U-B2	Irish (previously EU)	Pension	Rural	F	65+	Low	Intermediate
U-B3	Irish	Contributory Widower's Pension	Small town	F	65+	Low	Native
U-C1	Irish	Scholarship	Urban	M	18-24	High	Native
U-C2	Irish	Scholarship, Business	Urban	M	35-44	High	Native
U-D1	Non-EU International	No income in Ireland, family funds (non-EU)	Urban	F	18-24	Medium	Advanced
U-D2	Non-EU International	No income in Ireland, family funds (non-EU)	Urban	F	25-34	Medium	Intermediate
U-E	Non-EU International	Scholarship	Small town	F	25-34	High	Proficient
U-F1	Irish	Pension and Business	Rural	M	65+	Low	Native
U-F2	EU	Pension	Rural	F	65+	Low	Intermediate

By structuring the sample in this way, *Phase 3* addressed research questions 2 and 3 by situating user experiences in relation to the imaginaries and institutional logics identified in earlier phases. This approach ensured that the analysis was sensitive to variations in user backgrounds and allowed the research to examine how exclusionary design practices and regulatory requirements are negotiated in everyday use. The sampling strategy also reflects SCOT's call to include multiple social groups in order to

[15] Digital literacy as self-identified by participants
[16] The same letter indicates being interviewed as a group.
[17] Language skill (low to high): Beginner, Intermediate, Advanced, Proficient, Native

explore interpretative flexibility, showing how the same banking technologies may be experienced as enabling, constraining, or exclusionary depending on social background.

4.3.3 Data Analysis

As the final phase of fieldwork, the sampling process for *Phase 3* used the convenience sampling method (Clark et al., 2021; Parker, Scott and Geddes, 2019) combined with a quota (Yang and Banamah, 2014) based on residential status, as shown in *Table 4-7 Inclusion Criteria for Phase 3.* Data collection for *Phase 3* began in October 2024 and was completed in January 2025. In total, eleven participants were interviewed and coded (as shown in Table 4-8). The deadline for withdrawal of consent for quotation removal from the thesis was January 2025. All interviews were transcribed by the researcher using auto-generated transcripts and manually proofread. A code of 'U-' was used for all user interviews to separate from *Phase 2* expert interviews. Similar to *Phase 2*, thematic analysis was used. As the interview was designed around themes, the coding followed the themes from the question design (as shown in Table 4-6 above). Given the small number of interviews and the casual setting to accommodate the role of the 'user', in contrast to the 'expert' role from *Phase 2*, no structured code book was created as each of the interviewees were facing uniquely nuanced marginalisation and usage barriers (Bryman and Cassell, 2006; Clark et al., 2021). Further interpretation and meaning making of *Phase 3* empirical data will be discussed in *Chapter 7*.

During coding, accounts of verification frictions, chatbot escalations, and branch fallback were interpreted as sites where app affordances and institutional rules are 'inscribed' (governance by design), and where users negotiate or resist those inscriptions. This operationalises SCOT by tracing how different user groups attach distinct meanings to the same artefacts (interpretative flexibility) and how, over time, app practices become taken-for-granted (stabilisation). It also operationalises social imaginaries by showing how expectations about what 'proper banking' should feel like (e.g., immediacy, safety, human reassurance) and are re-made through platform interfaces. As with *Phase 2*, the thematic analysis in *Phase 3* was informed by the research questions and the theoretical framework of SCOT and social imaginaries. The aim was not only to document user experiences but to use these accounts to probe specific processes involved in the construction and stabilisation of digital banking practices. For example, narratives coded under barriers such as identity verification or

digital literacy, were examined through the lens of interpretative flexibility, showing how users with different residential statuses made sense of, and sometimes resisted, the constraints of app design. Similarly, participants' reflections on trust, responsibility, and exclusion were analysed in relation to imaginaries of money and banking, revealing how platformised services reshape expectations of what banking should be. In this way, the themes that emerged from the user data were not treated as descriptive accounts alone but as windows into the socio-technical processes underpinning platformised banking. This ensured that *Phase 3* analysis remained anchored in the overall conceptual framework and directly addressed the research questions, particularly those concerning barriers to access and the inclusivity of digital financial services.

4.4 Ethical Implications

As there are three phases of empirical research using different methods with different research subjects, ethical considerations for each phase need to be addressed separately. For *Phase 1*, the modified walkthrough, belonging to the broader research methodology of autoethnography (Ellis, Adams and Bochner, 2011; Light, Burgess and Duguay, 2018), raises issues of generalisability of the findings (Pitard, 2017), especially with the use of the researcher's authentic identity, as discussed in *Subsection 4.1.2* on positionality. Unlike traditional walkthroughs that use an idealised or constructed user persona, this thesis employs the researcher's real identity (within the user category for *Phase 3* as a long term immigrant residing over one year) and thus inherently introduces her real-life experiences, as shaped by intersecting and entangled factors (see *Subsection 4.1.2*). Moreover, the modified walkthrough method does not merely examine technical or design affordances; it focuses on how human actors interpret, negotiate and construct these technologies within specific institutional and social contexts. As a user representing, in a way, the growing immigrant population in Ireland, the researcher was able to capture the nuanced and emergent barriers, and the latent exclusions, that may be revealed by this method, beyond what is typically identified in standard usability testing derived from computer science methods (Light, Burgess and Duguay, 2018; Gillespie, 2018).

Both *Phase 2* and *Phase 3* employ semi-structured interviews. *Phase 2* comprises one-to-one interviews between the researcher and experts, while *Phase 3* includes both one-to-one interviews and small group interviews (two to three people).

The two phases share the same ethical concerns regarding confidentiality, anonymity and mention of sensitive data. As discussed in *4.2.2* above, *Phase 2* used a snowball and quota sampling method. To ensure inclusion across professional roles, convenience, snowball, and quota sampling were used in combination (Edgar and Manz, 2017; Yang and Banamah, 2014). Recruitment began in February 2024 and continued through August 2024, resulting in twenty-one interviews. Exclusion criteria were also applied to minimise bias and maintain sample integrity. Experts were excluded if: (a) They had no current or recent (within five years) experience in the banking or financial technology sector; (b) Their role lacked direct relevance to Ireland (for example, experts responded to the recruitment but only had experience in Northern Ireland); (c) They were bound by non-disclosure agreements that fully restricted discussion of their work. Experts who expressed potential conflicts of interest or discomfort about confidentiality were politely thanked but not included.

To mitigate bias in expert interviews, the researcher recognised several possible influences of (a) selection bias mitigated by recruiting across multiple institutions and occupational levels; (b) response bias mitigated by guaranteeing anonymity, offering the option not to record, and emphasising that critical or dissenting views were valued; and (c) researcher positionality bias managed through reflexive note-taking before and after interviews, acknowledging the researcher's academic standpoint and familiarity with the sector.

The final dataset comprises twenty-one interviews across the four occupational categories (see Tables 4-3 and 4-4). Three interviews were unrecorded at the participants' request. These interviews were documented via field notes and verified through participant confirmation. This solution aligns with the ethical principles of informed consent, autonomy, and voluntary participation. It recognises that elite participants are often cautious about reputational or professional repercussions (Harvey, 2011). Written summaries were returned to participants for verification, ensuring both accuracy and ethical accountability.

Although all interviews were coded and each participant was assigned a non-identifiable code for inclusion in quotations, certain decisions had to be made during the coding process. For example, normally the organisations of experts would be anonymised using vague descriptions such as 'an Irish pillar bank' or 'a neobank providing an IE IBAN'. However, given the limited number of banking services in Ireland, those descriptions would still be identifiable to a specific organisation within a

group of three organisations. Therefore, considering that the organisational affiliation of the experts is key to the discussion (especially see *Section 6.1*), the organisations' names have been preserved, while other information (for example, mentions of locations smaller than a country or Dublin City) has been anonymised. This approach applies similarly to user interviews, as the app of choice is not coded with other identifying information.

Regarding sensitive information, potential breaches of NDAs for expert interviews have been addressed in *Subsection 4.2.4*. Experts are required not to mention any client by name or any particular case that discloses the information of clients, customers or individual users; they are to share their knowledge and opinions based on their daily work routines. The three non-recorded interviews have also been addressed in *Subsection 4.2.3* and will not be discussed further here. Apart from these three non-recorded interviews requested by the experts, all interviews with both experts and users were recorded. These recordings, referred to as raw data, are stored on an external hard drive with password protection and locked in a safe location. An electronic backup of these recordings is stored on an internal Maynooth University server. These recordings are accessible only to the researcher and will be deleted upon submission of this PhD thesis, with the coded transcriptions retained for ten years after completion as required by ethical rules within the institution and for revisions and any academic publications arising from this work.

Each participant received an information sheet containing a summary of the PhD research, details of the researcher (including contact information) and information about the supervisor (including contact details), to ensure that the participant had a basic understanding of the study. The information sheet also included details tailored to the two phases of interviews, outlining the purpose of the interview, what was expected of the participant, consent for recording and the procedure for withdrawing consent before, during or after the interview (with a cut-off date of January 2025). These measures ensured that participation was fully informed and voluntary. The full versions of the two information sheets, along with a sample consent form, are provided at the end of this PhD thesis as *Appendix 2: Phase 2 Information Sheet*, *Appendix 3: Phase 3 Information Sheet* and *Appendix 1: Sample Consent Form.*

Additionally, this research took all precautions to avoid causing harm, although banking and personal finance are sensitive topics. While this research did not require any participant to disclose their personal financial situation, the focus of the interviews

was on usage, non-usage and barriers to use, and they were not intended to probe creditworthiness or financial distress. Should any participant become anxious or stressed during the interview, the researcher had clarified that she was not affiliated with any banks or financial services providers and will not use their data for any purpose other than academic research. Information from the Money Advice & Budgeting Service (MABS) (https://mabs.ie/) was also provided for participants if needed.

4.5 Methodological Limitations

While the researcher sought to choose the most suitable method for each phase, all methods have limitations, as does the overall methodological design. The first limitation relates to sampling. A convenience sampling method was used for both *Phase 2* and *Phase 3,* which may not fully capture the diversity of perspectives from banking industry professionals (i.e. experts), and especially among all mobile banking users in Ireland. As *Phase 2* justified the sampling strategy in *Subsection 4.2.4 Ethical Concerns*, this section focuses on *Phase 3*. The convenience sampling method, combined with the small sample size for *Phase 3* (six interviews with eleven user participants), may raise concerns about biased data and limitations for generalisability. However, it needs to be highlighted that *Phase 3* was not designed to find generalisable patterns but rather to capture individual experiences, especially for those who have been marginalised in any way. As explained in *Subsection 4.1.3*, this PhD research was guided by a social constructivist ontology, in contrast to a flat ontology, and aimed to examine barriers and inequalities in access, use and withdrawal from banking services for specific users..

As the sole transcriber and coder for all the interviews, I also recognise that my own background as the researcher is entangled with how I interpret the data, especially as this PhD focuses on the social meaning of money, payment and banking (as discussed in *Chapter 2*). However, both phases of interviews were preceded by pilot interviews conducted, using established personas suitable for the interviews (these pilot interviews helped finalise the interview design[18] . Through reflecting on these pilots, I established my professional role as a researcher and while never fully detached from my

[18]Both pilots were conducted to refine the interview outline and to test technical features, for example recording and captions. The interviews were not conducted with actual banking experts or users, and no data from the pilot interviews were included in any part of the data analysis or in the final thesis.

own identity, I maintained a separation from my everyday experience. This was particularly helpful for *Phase 3*, as I was aware of my prior relationships with the interviewees (for example, sharing the same hobbies or being based in the same institutions) and adjusted my interview persona to that of a researcher rather than my everyday self. This also helped me to conduct thematic coding with thick descriptions to avoid subjective decision-making. Additionally, although qualitative research is sometimes criticised as being subjective (Clark et al., 2021; Ratner, 2002), it has been argued that this view is outdated (Rogers, 2013; Zahle, 2021). With intensive human participation and data ultimately transcribed as text rather than numbers, qualitative research may appear subjective, but the analysis was guided by existing structured conceptual frameworks. This resulted in a rich and in-depth exploration of the platformisation process and the broader digitalisation process in banking in Ireland.

Finally, the FinTech industry is a fast-changing, innovative sector. With the walkthrough conducted in late 2022, the data was three years old at the time of thesis submission, which may be considered outdated for mobile banking apps. For any factual changes, such as a disabled function or a newly added feature, a note is included when presenting the screenshots. Additionally, some new screenshots have been collected at a later time to capture updates. These are marked with the collection date, for example, as 'updated 2024'. Also, this research emphasises that the development of mobile apps, the digitalisation of banking services and the platformisation of money, payment and banking should be understood as iterative processes shaped by programmability, continual updating and ongoing interaction between institutional strategies and user practices. The thesis has highlighted its shifting nature (as addressed in *Section 2.3*, *Section 5.1*, and *Section 6.1*) throughout the thesis and across different phases of the research design.

Conclusion

To conclude, *Chapter 4* has detailed the methodological design, including planning, data collection, and analysis for this PhD thesis. Grounded in a social constructivist ontology with a particular focus on the SCOT framework, this PhD thesis utilised a phased qualitative approach that integrated digital methods, expert interviews, and user interviews. Each phase has been carefully designed to address the research questions and draw on existing literature discussed in *Chapters 2* and *3*, with the research findings

contextualised in *Chapters 5, 6*, and *7*. *Phase 1* focused on the platform and the social imaginaries of money, payment, and banking, utilising a modified walkthrough method to examine app design, registration processes, and security features. *Phase 2* explored industry perspectives through semi-structured one-to-one interviews with a diverse range of banking experts, while *Phase 3* captured user experiences via individual and small group interviews. *Phase 3* also acted as an additional stage of exploration, refining the findings from earlier phases. The chapter has addressed key ethical implications and methodological limitations, as well as providing detail on sampling, confidentiality, and researcher positionality.

Chapter 5 The Apps We Create

Introduction

This chapter presents the findings from *Phase 1 (Platform)* of the fieldwork, which applies the modified walkthrough method (see *Section 4.1*) to examine seven mobile banking applications used in Ireland. *Phase 1* answers the first research question: What dominant social imaginaries of money, payment, and banking service are represented in the design of mobile banking applications in Ireland? The findings from the modified walkthrough demonstrate how mobile banking apps represent and communicate particular imaginaries of money, payment, and banking. As outlined in Chapters 2 and 3, this thesis conceptualises money and banking as socially embedded institutions, shaped by collective understandings and normative expectations. The concept of social imaginaries (Mansell, 2012; James, 2019) is therefore used here as an analytical lens for interpreting how mobile banking apps articulate who their services are designed for, what matters in financial participation, and how financial responsibility should be organised. In this chapter, imaginaries are not treated as abstract ideals but as empirically grounded patterns observed in interface design, verification flows, customer support pathways, and the framing of consent and data processing.

Using the modified walkthrough method allows for a systematic and comparative examination of the different levels of access and usage of the app. This chapter examines how the design and operation of mobile banking apps, as sectoral platforms, configure user participation and responsibilisation, and how these configurations reflect and reproduce the social imaginaries of money, finance, and institutional trust. The analysis identifies three recurring social imaginaries embedded in the design of banking apps as (a) the Institutional imaginary, (b) the Transactional imaginary, and (c) the Digital imaginary. These imaginaries coexist and sometimes overlap, and they shape both user expectations and the distribution of responsibilities between banks and users. The chapter also identifies the presence of responsibilisation within the design of onboarding and support processes, illustrating how tasks, knowledge burdens, and risk management are transferred from institutions to users. This directly links to questions of inclusion and accessibility and sets up the analysis in subsequent chapters.

This chapter is structured into three sections. *Section 5.1* introduces how the concept of social imaginaries is operationalised in the empirical analysis and identifies three dominant imaginaries of payment. It shows how these imaginaries are not abstract ideas but are embedded in platform design decisions and user flows. *Section 5.2* presents findings from the modified walkthroughs across the seven apps, examining how registration, verification, Terms and Conditions (T&Cs), customer support pathways, and account suspension are organised. This section highlights concrete points at which barriers to access and use may arise. *Section 5.3* draws these findings together to examine how design logics redistribute task, responsibility, and risk to users, conceptualised here as responsibilisation. It shows how these processes shape differential forms of inclusion and exclusion within digital banking. The chapter then concludes by demonstrating how the findings from *Phase 1* inform *Phase 2* and *3,* which will be presented and discussed in *Chapters 6* and *7*.

5.1 The Social Imaginaries of Money, Payment, and Banking

The concept of the social imaginary is used as an analytical lens for interpreting the design strategies and communicative environments of the mobile banking apps examined in *Phase 1*. While *Chapter 2* outlined how imaginaries of money developed historically and socially, and *Chapter 3* demonstrated how these imaginaries are reshaped through the digitalisation and platformisation of banking, this chapter operationalises the concept in empirical analysis. In the context of digital money and banking studies, social imaginaries shape understandings of: (a) payment activities; (b) payment media (money); and (c) the services facilitating those activities (banking apps). These imaginaries materialise both in platform design and in broader symbolic forms, such as the cultural representation of money on coins and banknotes, as well as newer digital forms such as Bitcoin.

By analysing the design of seven mobile banking apps in Ireland, this section identifies three dominant social imaginaries of payment that recur across the sample: (a) the Institutional Imaginary, (b) the Transactional Imaginary, and (c) the Digital Imaginary. These imaginaries are theorised from examination and analysis of registration journeys, identity verification processes, interface arrangements, transfer and saving features, customer support pathways, and the presentation of Terms and Conditions. They are treated as analytical categories that show how payment is framed,

who is positioned as a legitimate or intended user, and what forms of trust, security, and responsibility are embedded in each platform. Imaginaries do not function as fixed or mutually exclusive typologies, but rather indicate design logics and social understanding that shape how users encounter and participate in app-based banking. In this way, the analysis demonstrates that wider cultural understandings of money and financial participation are not only reflected in mobile banking apps but are actively produced and normalised through them.

5.1.1 The Institutional Imaginary

The Institutional Imaginary extends the state-centred imaginaries of money outlined in Chapter 2 into the digital present, showing how institutional trust and national identity are re-inscribed through app design. It is informed with the conceptualisation of the *State Theory* of Money, also known as *Chartalism* (Knapp, Lucas, and Bonar, 1973) (see *Chapter 2*). *Chartalism* emphasises the identity of nation-states and the power of state control in shaping public services and economic activities, including banking. However, this classic theory is not used as a direct foundation for the *Institutional Imaginary*. Instead, it serves as a framework that is interrogated to explain the historical background of how formal institutions remained the mainstream design and continue to have significant influence over contemporary banking service designs. To elaborate, contemporary banking services are primarily formalised and centralised, with emerging decentralised services entering the market. Presently, any service claiming to be a 'bank' must obtain a banking licence, which can only be issued by a state regulatory body. Therefore, in this subsection, the *Institutional Imaginary* is not represented by all state-regulated services (Zelizer, 1996) but rather by those that strongly emphasise their association with the state and their formal status. For example, the Society for Worldwide Interbank Financial Telecommunication (SWIFT) system can be considered as representing this imaginary, as it requires an International Bank Account Number (IBAN) for each transaction to be processed. An IBAN is structured with a country code, followed by a Bank Identification Code and personal information such as an account number for each bank account (Scott and Zachariadis, 2012). Therefore, regardless of the nature of a payment, account owners using SWIFT, which is employed by major payment networks such as Visa and Mastercard in Ireland, inherently disclose

their national affiliation with the banking service used. This design reflects the *Institutional Imaginary* by embedding state-linked identification within the payment process. In the Global South, where some countries may not be connected to the SWIFT system, national banking infrastructures have also been developed (Allen and Gu, 2021), which similarly fall within this imaginary. For instance, the Shetab banking system in Iran and UnionPay in the People's Republic of China are national-level banking networks that operate independently of the SWIFT system (Rahimian, 2020; Xing, Hei, and Pu, 2018).

Among the apps studied in this thesis, BOI 365 and An Post Money are identified as representing the Institutional Imaginary, though with different degrees of emphasis that lead to distinct design features. To explain, Bank of Ireland, through its name, evokes a cultural identity as an Irish bank, thereby signalling an institution-based sense of trust. An Post Money, by incorporating the Irish language in its name and maintaining deep connections to local communities through the long-established postal service, also reflects institutional trust. While it provides simplified transactions and easy account registration, which are not typically associated with state-centralised services, it relies on the institution of the post office, which holds significant cultural meaning in Ireland and is widely recognised as a trusted public service (Whelan, 1988). Therefore, it could also signify the *Institutional Imaginary*. Both BOI and An Post Money promote state-centred service schemes, especially in the presence of foreign banking services operating in Ireland, such as Ulster Bank before its nationwide withdrawal in 2020 (Fernández, Paz-Saavedra and Coto-Millán, 2020). BOI achieves this by engaging in public events and sponsoring key Irish institutions, such as Leinster Rugby, while incorporating Irish cultural symbols by using an abstract version of simplified coats of arms in its logo design (see *Image 5-2* below).

Image 5-1: BOI logos and sponsorship of Irish rugby teams

(Bank of Ireland website, accessed 2024)

Meanwhile, An Post launched its payment service as An Post Money in 2018 as part of its broader strategy to expand into financial services. As a postal service, An Post Money does not hold a full banking license and operates under a different financial model, positioning itself outside the traditional 'banking' framework while providing equivalent banking services. The An Post Money mobile app was introduced in 2019, offering customers easy access to financial services such as current accounts, savings, loans, and insurance through a digital platform in partnership with regulated financial institutions. For instance, An Post provides personal loans in collaboration with Avant Money, which holds the required banking licenses. With slogans like 'Make your money matter more' (An Post, 2023) and 'Open a current account from your phone today!' (An Post, 2021), An Post Money promotes itself as an alternative service that appears more accessible than traditional state banking institutions, such as BOI and Allied Irish Banks (AIB). These pillar banks require stricter review of identification documents and longer review periods. In contrast, An Post Money offers instant or same-day services.

The wider popularisation of An Post Money occurred after Ulster Bank's withdrawal from Ireland in 2021 . This withdrawal led many former Ulster Bank customers to transfer their accounts to An Post Money, as post office services are sometimes considered easier to access than other pillar bank providers (Sonea and Westerholt, 2021), in this context BOI and AIB. This shift may also be influenced by the increasing use of Revolut in Ireland. In 2023, Revolut acquired an Irish banking licence and relaunched in Ireland from Revolut EU to Revolut IE, providing its users with an IE IBAN. This IE IBAN can be used for salary payments and direct debit schemes, whereas the former Revolut EU, with an LT[19] IBAN often failed to do so.

The more accessible service of the An Post Money app is rooted in a smaller local public unit of institution and the national postal service, which has traditionally had offices in the smallest localities. While it does not emphasise state identity as prominently as BOI 365, it operates under the state's social infrastructure, utilising the social institution of the post office (McGowan, 1988; Sonea and Westerholt, 2021) as a public and state entity that cares for local residents. This accessibility may result from the more interactive nature of postal services compared to banking services (Fitzpatrick,

[19] LT stands for Lithuania where the banking licence for the EU service is located

2019). While people typically visit banks when they need banking services, postal workers come to people's homes and workplaces to deliver and collect letters and parcels. Moreover, in areas where accessing a bank branch is challenging due to the reduced branch coverage caused by the hybrid operating model of pillar banks, An Post Money's postal services are promoted by pillar banks as a support option for accessing basic banking services. Customers can visit a post office in Ireland for essential banking tasks, such as withdrawing and depositing cash, which cannot be done digitally, as well as ordering cheques, bank drafts, and postal orders for specific services, including payments for government agencies, such as renewing travel documents. Therefore, exemplified by An Post Money, the second variation of the state imaginary of payment is community-centric payment and personal finance systems.

Additionally, credit unions could be included in this category for their close connection to localities, such as Tallaght Credit Union, or their focus on shared experiences, like the Nurses Credit Union or the Educational Fund Credit Union. Locality-based credit unions are often deeply embedded in their communities, where members may know each other through shared social networks, including friendships and kinship ties, and operate under a cooperative business model. In contrast, credit unions based on shared experiences rather than geography tailor their services to meet the specific needs of their members, fostering solidarity through common professions or socio-economic backgrounds (Pavlovskaya et al., 2020). Whether based on location or shared experiences, credit unions maintain a strong sense of community and solidarity. They operate on a smaller scale but provide accessible services through physical branches, particularly in locality-based models, offering essential financial services such as savings accounts and small personal loans. This reinforces the community-centric model of finance and aligns with the broader social infrastructure, similar to An Post's role in delivering services to remote or underserved areas. Although there was no available credit union with a functioning app for the researcher to conduct a walkthrough at the time, credit unions are developing their own digital services with mobile apps and web platforms. For instance, Tallaght and District Credit Union Limited launched its online service in 2019, with a mobile app becoming available in 2022. It is essential to address this development in the discussion of the social imaginary of payment.

5.1.2 The Transactional Imaginary

The Transactional Imaginary is understood through Simmel's (2011) perspective of money as a medium that connects people with goods, people with each other, and goods with goods. It builds on the Simmelian and Maussian traditions introduced in *Chapter 2*, where money mediates social relations, demonstrating how these imaginaries are reconfigured in the interpersonal features of banking apps. Accordingly, this social imaginary of payment emphasises the 'act' of payment and its exchange nature, embracing the contemporary trend of integrating media functionality with payment to create digital finance services. Under this imaginary, there are two design variations: economic trading platforms (e.g., Western Union, Revolut) and interpersonal communication-enabled platforms (e.g., Meta Pay, M-Pesa, WeChat Pay[20]). While the economic trading variation builds on Ingram's (1996) argument that money should be human-centred, this social imaginary suggests that banking should also be human-centred. The belief is that banking should ideally be inclusive of all people, especially those excluded by state-centred banking systems like SWIFT (Maurer, 2014). There are many reasons why people may be excluded from the state banking system, but the two common reasons are the lack of legal identity or insufficient funds (Maurer, 2014). In North Africa, a significant number of people cannot afford to have accounts with pillar banks due to constantly moving and, therefore, cannot provide billing addresses or legal documents of residence (ibid). Accordingly, alternative options are being explored. This creates a market demand for the development of payment and banking services that focus more on person-to-person transactions, rather than the establishment of traditional financial institutions.

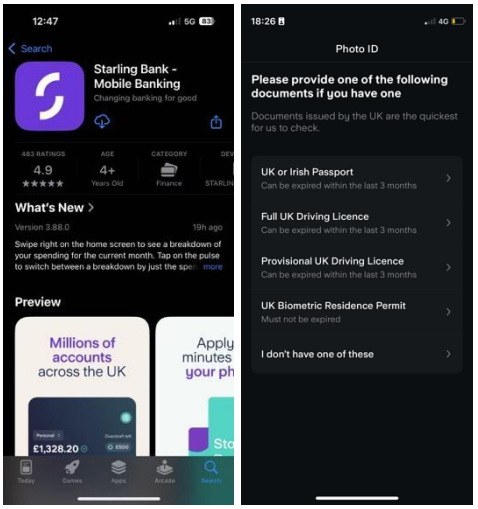
Before achieving a widely successful design, there have been numerous attempts to create services that meet market demands, many of which failed due to a lack of approval or support from regulatory bodies. These challenges make it difficult to establish trust with a large customer base (Mezei and Verteș-Olteanu, 2020). These alternatives are often more popular among individuals with financial hardships and ambiguous legal statuses, who are not serviced by financial services designed according to the institutional imaginary of money in the Global South. Examples include GCash in

[20] As the walkthrough requires apps to either claim bank status with their own banking licence or operate through an external partnership, these interpersonal communication-enabled services do not meet the inclusion criteria and are therefore not included in the empirical research for this PhD thesis.

the Philippines, which allows users to send and receive payments to and from anyone and provides a joint-account feature for individuals and groups to co-bank (Alampay and Cabotaje, 2016).

The invention of SBUK, launched in 2014 in the United Kingdom, signifies a new type of technology start-up providing banking services, known as ‘challenger banks’ and ‘neobanks’. Neobanks are digital-native banks that operate without physical branches and primarily offer their services through mobile apps and online platforms (Nocera, 2022). This thesis initially included SBUK in its list of apps to investigate its design, affordances, and guiding imaginary. However, as shown in *image 5-2* below, while SBUK is downloadable from the Irish app store and theoretically accessible to all Irish users, it is only available to Irish citizens and was not accessible to the researcher as a non-citizen resident in Ireland.

Image 5-2: Starling Bank available on the Irish App Store but only accepting Irish passports for Irish users

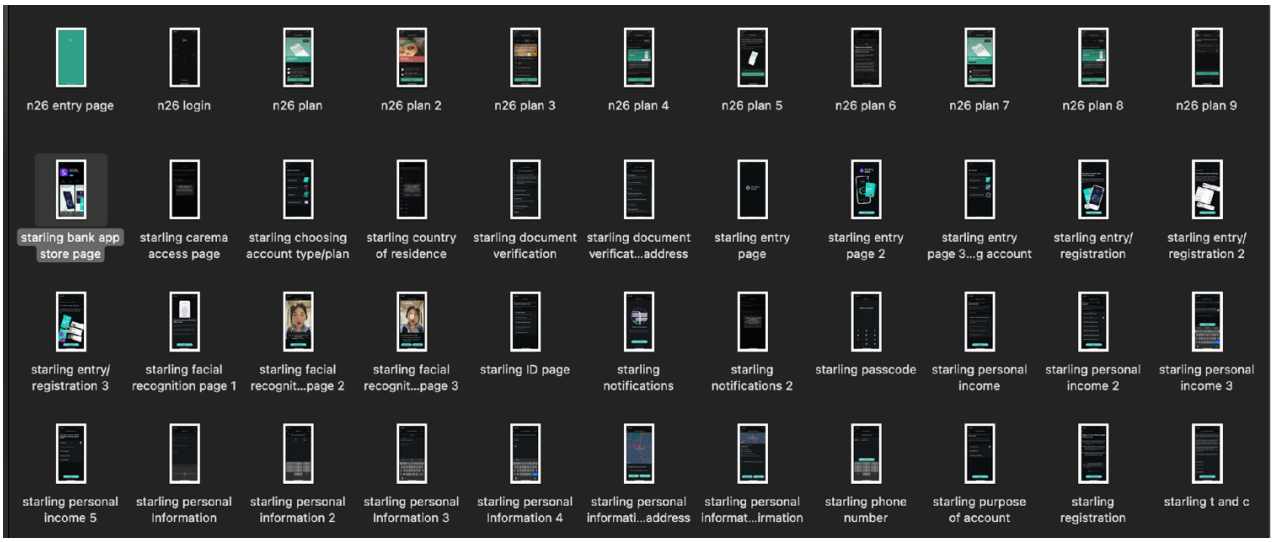


(Screenshot by researcher, 2022)

Therefore, an alternative example, providing almost identical services and similar visual design (see *Image 5-3* below) to Starling Bank, was chosen. N26, a German tech start-up, is marketed as the first fully licensed digital bank that ‘complies with all the regulations set forth by the European Central Bank, similar to other traditional banks, and has the ability to provide all the services typically expected from a bank’ (N26, 2021). It also has a webpage educating consumers about bank licences and European

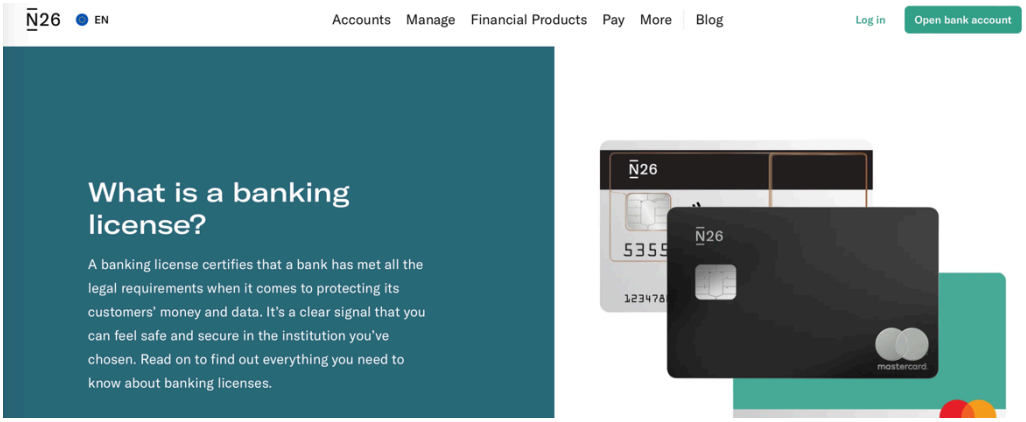
banking regulations, as there is an increasing number of fintech innovations providing banking-like services (see in *Image 5-4*[21] below) as potential competitors in the market.

Image 5-3: Overall visual design of SBUK and N26 showing high similarities



(Screenshot by researcher, 2022)

Image 5-4: N26 Banking Licence webpage—Teaching Financial Literacy



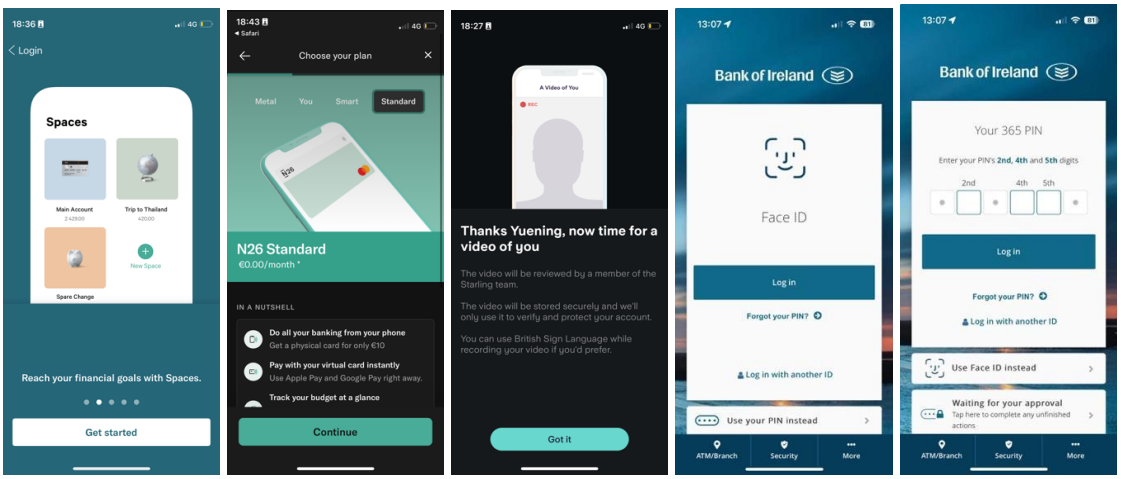
(Screenshot by researcher, 2022)

Illustrated by N26, the design of economic trading platforms reflects the Transactional Imaginary of payment. This conforms to Krueger and Mann's (2009) theorisation of money as relational and shaped by 'relational work', such as gifting and allowances, where monetary values are integrated into interpersonal relationships (Krueger in Dodd, 2020). This reflects a strategy adopted by the banking and personal finance industry to

[21] Larger images with fuller details are provided in Appendix 6.

intensively incorporate digital and platform technology, creating similar services to challenge established traditional banking services. Compared to BOI 365, N26 does not require prior connection with an established and legally vetted banking account already existing in the banking system. Instead it allows users to create a new account upon first registration with the app. As shown in Image 5-5 below, N26 (in the right three screens) requires legal ID, residency data, and biometric data (Face ID or fingerprint ID, depending on the mobile operating system) for the account opening process. In contrast, BOI (in the left two screens) only requires authentication via a pre-registered mobile phone number to authorise the app's connection to the user's BOI account. This may appear to contradict N26's claims of offering a simpler and faster sign-up process. However, the two registration flows serve different purposes. The N26 onboarding process shown (left) involves the creation of a new bank account, including full identity verification and compliance checks. By contrast, the BOI screens (right) only link an already-existing BOI account to the mobile app. In other words, BOI assumes the user has already completed account opening offline, whereas N26 performs account creation and verification within the app itself.

Image 5-5: N26 and BOI registration page comparison

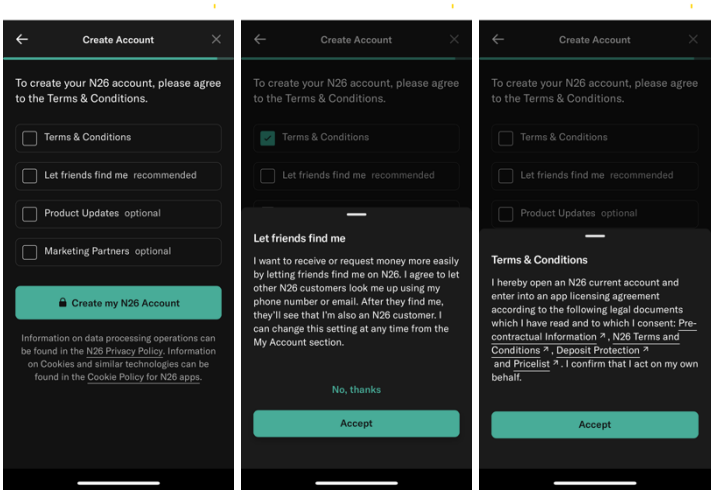


(Screenshot by researcher, 2022)

Moreover, although N26 is regulated and part of the official IBAN system like all banks, the app does not emphasise its national origins, such as the 'DE' for Deutsche (German) in its IBAN, as it seeks to attract a broader user base beyond a single country. Due to the lack of physical branches, these apps can operate on an EU-wide level, rather than being restricted to a specific state, thanks to EU economic regulations. The IBAN simply reflects the country from which they obtained their banking licence, which,

while valid across the EU, is issued at the state level by national central banks. Instead, it emphasises features such as free and instant domestic and international transactions and discounted currency exchange rates, presenting itself as a superior option for day-to-day payment activities. It also incorporates a social function into the banking service by facilitating the translation of everyday interpersonal relationships into payment activities. For example, N26 requests access to the user's contact list by default. Once granted, it automatically displays which contacts also hold N26 accounts when the user opens the 'transfer' or 'split the bill' functions (see *Image 5-6* below). In doing so, the app frames financial exchange as a routine, relational activity embedded in existing social networks, rather than a formal transaction carried out in institutional settings. This design demonstrates the Transactional Imaginary where payment is presented as a social exchange grounded in interpersonal ties, and banking activity converges forms of communication and everyday relational interaction. While this can also be read alongside broader trends of platform integration, the dominant emphasis here is the social and relational framing of payment itself.

Image 5-6: N26 'Let my friends find me' page—recommended

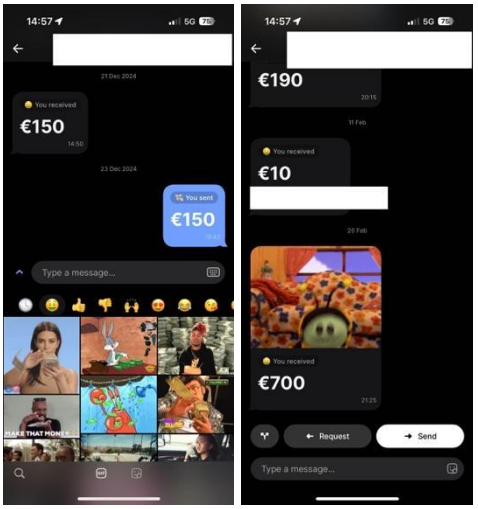


(Screenshot by researcher, 2022)

Accordingly, although N26 offers free and 'easy money transfers' in comparison to pillar banks when sending funds to external banks, it is more convenient and straightforward to click a name within the same bank, as the app design simplifies N26-to-N26 transfers. These design features do not only streamline transfers between banks but also normalise interpersonal money exchanges within the app's own network. Neobanks

such as Revolut further amplify this by allowing users to send a Graphics Interchange Format (GIF) meme as a message to recipients within the Revolut network (see *Image 5–7* below). In contrast, external payments can only include textual references with a strict word limit, usually under ten words, similar to pillar banks (Parusheva, 2019). Though this may seem minor, it transforms the nature of communication from formal, impersonal banking language to a more social and conversational tone, incorporating informal elements such as emojis and memes that have roots in pop culture (ibid). These elements may make the communication format more relatable and engaging, aligning with trends in digital culture and fostering a stronger connection with and between users.

Image 5-7: Meme searching function and inclusion of messages and memes with payments in Revolut

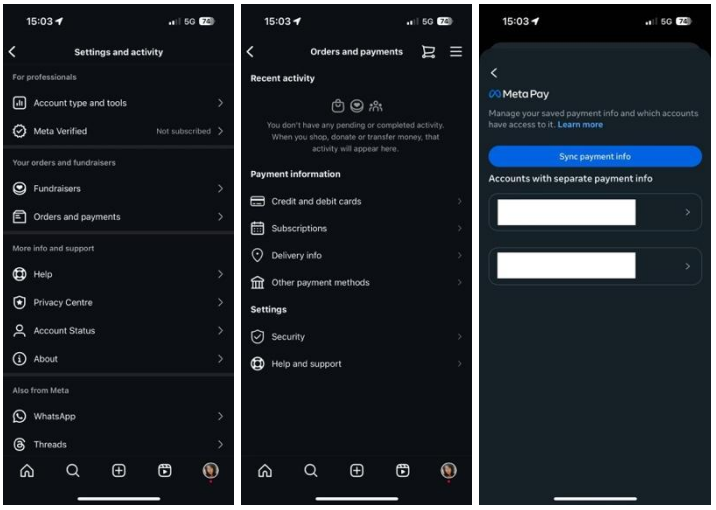


(Screenshot by researcher, 2023)

The second variation in the transactional imaginary is the interpersonal communication-enabled platform design. The development of payment platforms in this variation (e.g., Meta Pay) by social media providers emphasises that the transactional and exchange functions of payment are inherently social activities. Therefore, they should be embedded within interpersonal communication channels without needing external providers. This variation signals an industry convergence between the finance and media sectors, demonstrating how digital payment services have evolved into a new hybrid industry. Building on Mauss's framework (*in* Dodd, 2020) that money functions

as a ‘balance sheet’ for human relations, including kinship, friendship, neighbourliness, and employment, new media-driven payment services seek to capitalise on interpersonal social networks by using the contact information stored on users’ smartphones. By offering promotions that encourage existing users to share a link to sign up for cash rewards, new payment services, particularly neobanks, leverage social connections to promote themselves and introduce a new way of banking (Yacoubian, 2019). Although this variation was not examined through a full walkthrough in this study, the integration of payment features into social media platforms can be seen in Meta Pay within Instagram (see *Image 5-8 below*). This example demonstrates how payment is positioned as part of ongoing interpersonal communication rather than as a separate financial activity.

Image 5-8: Meta Pay embedded in Instagram account settings



(Screenshot by researcher, 2023)

The design of these payment platforms accommodates the need for interpersonal exchanges by incorporating both social functions and payment features into social media applications (Swartz, 2020).

5.1.3 The Digital Imaginary

The *Digital Imaginary* captures the dematerialised and data-driven understandings of money that motivates many contemporary payment and financial technology (FinTech)

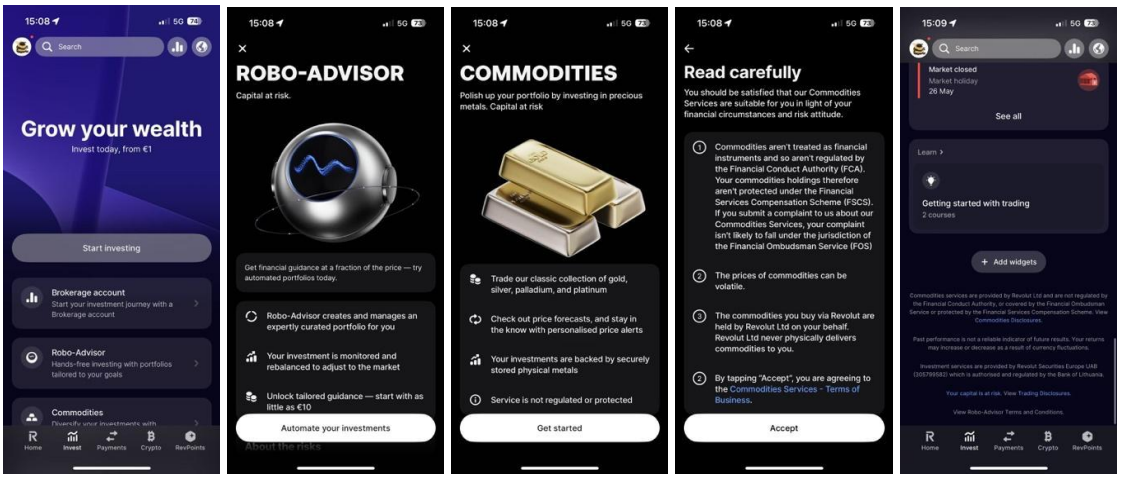
innovations. This imaginary is most visibly articulated in the emergence of blockchain-based currencies such as Bitcoin (Dodd, 2016), but it can also be expressed within apps that are primarily organised around the Institutional or Transactional Imaginaries. In these cases, the feature appears as optional or supplementary. It is usually offered through investment tools or pay-later services that allow users to trade or hold cryptocurrency, or to access alternative forms of credit that function alongside pillar-bank credit cards. These additions introduce non-essential financial functions into apps that also provide essential banking services. As a result, the boundary between necessary and optional services becomes blurred. And the non-essential part of service of cryptocurrency and alternative credit reflect the digital imaginary within the app, which may itself express institutional or transactional imaginaries. It extends the dematerialised and decentralised view of money discussed in *Chapter 2* into platformised environments where monetary value is conceived as data, code, or algorithmic ledger entries rather than a physical medium (Swartz, 2020). Within this imaginary, money is understood as independent from its material form, and secure financial action is framed as achievable through technological optimisation—automation, encryption, biometric verification, and machine-led evaluation (Thompson, Gulson, and Kitto, 2020; Lemieux and Dodd, 2023). Cash is therefore considered as outdated and no longer necessary, and everyday financial interactions are imagined as fully digitalised.

Two design examples in the walkthroughs illustrate how the digital imaginary becomes embedded in mobile banking apps. The first concerns the investment services in neobanks such as N26 and Revolut IE (see *Image 5–9* below). While the design of the N26 app primarily reflects the Transactional Imaginary of day-to-day interpersonal payment, and Revolut exhibits a hybrid trajectory that has shifted from a Transactional orientation toward a more Institutional positioning in Ireland following the introduction of their Irish IBAN, the investment features in both apps express the *Digital Imaginary*. These features function as discrete modules within the broader app environment, where users can purchase, track, and trade cryptocurrencies alongside other assets. They were introduced only after neobanks had secured a stable user base and were initially released to selected users[22] before being made more widely available (Harasim, 2021).

[22]The selection process was not made transparent to users. In my case, I received an email inviting me to try the feature. However, when I signed into the app, I was denied access because my income was the PhD stipend rather than an actual salary

In this context, investment modules extend the platform logic of these apps by deepening the datafication of financial behaviour. Users' risk preferences, transaction patterns, and portfolio choices become further sources of data that are analysed, personalised, and monetised through recommendation systems and tailored financial prompts. The onboarding to investment is presented as accessible and individually manageable, supported by gamified tutorials, risk disclaimers, and progress indicators.

Image 5-9: Investment with different options, disclaimer, and educational course in Revolut



(Screenshot by researcher, updated 2024)

The second example of the digital imaginary is Klarna, which was initially launched as a buy-now-pay-later service and later obtained a banking licence. In Klarna, the medium of payment is largely dematerialised. Purchases are recorded as short-term credit rather than as immediate withdrawals, with repayment occurring through scheduled instalments once the user confirms a purchase. In cases of returns or exchanges, which are common in online shopping, users are only charged for the items they keep. This is in contrast with credit or debit card payments provided by pillar banks that typically charged for the full amount upfront and refunded later. Therefore, financial transactions consist primarily of data operations tied to user identity profiles rather than discrete manual transfers. Klarna also draws on behavioural analytics to customise recommendations, highlight shopping categories, and present personalised incentives such as cashback or 'special offers' (Ko, 2020). This demonstrates how datafication and behavioural nudging are embedded in the everyday use of payment

systems, positioning financial conduct within predictive and responsive platform environments.

Across both examples, the Digital Imaginary is closely linked to platformisation. Mobile banking interfaces routinely display spending summaries, forecasting dashboards, badges for investment milestones, streak-style engagement indicators, and notifications encouraging users to ‘stay on track’ or ‘progress further’. These design logics enact the Digital Imaginary by positioning financial participation as something that is monitored, optimised, and improved through data feedback. The gamification of investment and credit management through visual rewards, rankings, animated confirmations, or personalised nudges reinforces the idea that financial behaviour is both measurable and modifiable through continued platform engagement. As a result, the Digital imaginary does not replace the Institutional or Transactional imaginaries but intersects with them. The dematerialised view of money is layered onto existing payment infrastructures, while datafication reshapes how trust, responsibility, and financial judgement are distributed. By tracing these features through the modified walkthroughs, this section demonstrates how the broader imaginaries of money introduced in *Chapter 2* are operationalised in the design and governance of mobile banking apps.

In short, the *Institutional*, *Transactional*, and *Digital Imaginaries* demonstrate how collective understandings of money and payment are materially encoded in the design and governance of mobile banking apps. They show how platforms organise assumptions about legitimacy, trust, and participation, and how these assumptions shape users’ practical engagement with financial services. The following section examines how these imaginaries are reinforced and negotiated at the level of formal service agreements, focusing on how terms and conditions structure rights, responsibilities, and expectations within digital banking environments.

5.2 Terms and Conditions for Mobile Banking Apps

Where *Section 5.1* identified the dominant imaginaries of payment embedded in app interfaces and user journeys, this section examines how these imaginaries are articulated in the legal and procedural frameworks that govern digital banking. The analysis focuses on the terms and conditions (T&Cs) as examined in the third step of the modified walkthrough associated with each app and considers how consent, data use,

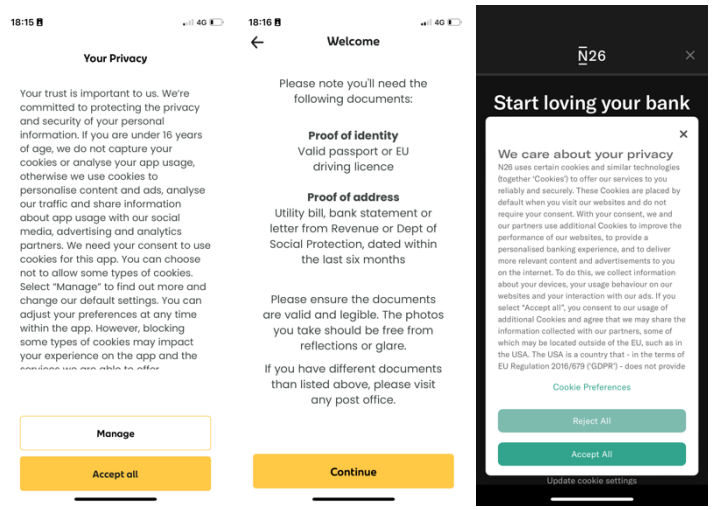
security, and responsibility are communicated, operationalised, and made actionable in practice. This step was modified as a separate step specifically for researching banking apps as their T&Cs are typically longer than those of other day-to-day apps. In addition to the standard T&C documents for mobile app use, which typically cover topics such as data privacy, user obligations, limitations of liability, service access, and dispute resolution, banking apps often include additional terms related to account ownership. These terms can easily be overlooked amidst the lengthy documents presented during the initial registration process (Neal et al., 2023). This could potentially result in users being less informed about their banking account responsibilities or underestimate the legal requirements for their digital banking activities compared to opening a new bank account in person (O'Hagan et al., 2022). Therefore, an additional step was included in the modified walkthrough, using a content analysis method to review the T&Cs concerning account ownership for the seven selected apps: Bank of Ireland 365, An Post Money, N26, Chase UK, Starling Bank UK, Klarna IE, and Revolut IE.

5.2.1 Accessibility and Readability

Upon an initial close reading of the sample documents, an accessibility concern emerged with the user interface (UI) design for viewing the T&Cs documents. While the T&Cs are presented at the action step, where users can accept or reject the service, the actual documents require additional steps to access. In contrast, the option to 'accept' is prominently displayed as a call-to-action button, making it the most visible and immediate choice within the app (see *Image 5-10* below). Although T&Cs are referenced in the action step, the actual documents are linked externally as PDF files which can be saved locally through an external web browser page (see *Image 5-11* below). In line with the walkthrough methodology, all PDF versions of the T&Cs were collected by saving the linked PDF documents locally via the app or web browser. Bank of Ireland (BOI) does not provide a direct link to the specific document but instead offers a more general link to all the T&Cs involved in their services. However, it is easy to identify the required document as an interactive table of contents is provided. Additionally, An Post Money provides a detailed webpage, linked externally, for their T&Cs. Unlike other banking services, they do not provide the document as a PDF, but it can be saved as a PDF file by choosing the 'print' option in the browser. However, this may present an additional barrier for users who are not familiar with technology or for

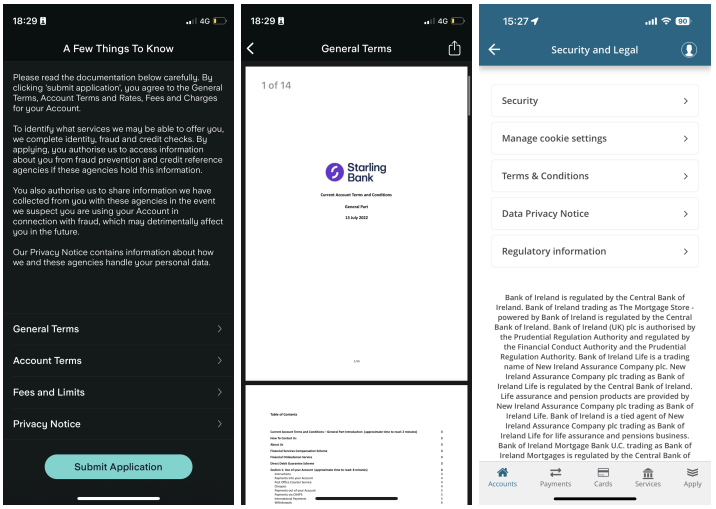
whom English is not their native language. The saved page of An Post Money's T&Cs is presented as an analysable PDF with a layout similar to that of the T&Cs documents from other sample banking apps.

Image 5-10: 'Accept All' and 'Continue' for An Post Money and N26



(Screenshot by researcher, 2022)

Image 5-11: In-app presentation of T&Cs for SBUK and BOI



(screenshots by researcher, 2022; 2024)

The initial close reading follows the walkthrough procedure to gain an overview of the visual design, textual content, and tone of the T&Cs documents (Light, Burgess, and Duguay, 2018). This is then compared to the design, content, and tone of the app itself,

including in-app text embedded in the user interface (UI) at the same level of user engagement (Nouwens et al., 2020). Within the banks reviewed, a similar visual design was identified. Although all the collected T&Cs were for mobile apps and would therefore be initially accessed through the app user interface or via an external weblink on their mobile browser, none of the documents are designed in a mobile-friendly way. Compared to the UI design of the apps, the fonts and layout of the T&Cs documents appear to be designed for a larger screen or best suited for print (see *Image 5-11* above). The mismatched formatting for small screens, especially mobile phones, and the excessive length of the documents, many of which range from thirty to fifty pages, may discourage potential users from reading them in full. This makes it more challenging for users to be fully informed before giving consent (Kreuter et al., 2020). This will be further investigated in *Phase 2 (Industry)* and *Phase 3(User).*

The textual content of the majority of the sampled apps is in a typical legal document style, featuring specific legal terms that may be unfamiliar to general users. Apart from Revolut, all T&C documents are written in lengthy, legal, and technical discourse that requires an advanced level of English literacy. This presents an additional challenge for individuals who are not native English speakers, as the documents are written in technical legal English with no language options provided. It is unclear whether the documents are available in Irish, which may be a legal requirement on request. For example, non-native English speakers and native speakers with lower education levels who need to open a bank account digitally in Ireland may struggle with technical terms used in digital services, such as 'Third Party Provider (TPP)' and 'Account Termination.' In N26's Clause 9.1.5, 'Account Termination' is mentioned along with the phrase 'any associated fees,' which could pose a potential barrier for users with varying levels of language proficiency to understand. Financially specific terms, such as 'Personalised Security Features' (referring to a combination of elements like PINs or passwords that a user sets up to secure their account, e.g., N26: Clause 7.2), 'Single Euro Payments Area (SEPA),' and 'Overdraft Facility Fee' (e.g., BOI: Clause 23.1), can also create challenges in understanding the T&Cs.

In addition to the language barrier, financial literacy poses another hurdle. For instance, terms like 'general account' and 'current account' are specific to financial institutions. In this context, digital banking apps use 'general account' and 'current account' interchangeably, as they may not offer savings or business services. Therefore, they refer to core personal banking services as a 'general account'. In contrast, more

established banks like BOI, which offer a wider range of services, use the term ‘current account’ to differentiate day-to-day personal finance services from other offerings such as savings, investments, mortgages, and business accounts. This, in turn, may hinder how well users are informed when consenting to these terms. This issue is further compounded by the absence of alternative language options for the T&Cs and the lack of assistance from a bank teller to explain such terms, as would be available in a more traditional banking setting. This is despite the fact that the apps themselves can be operated in various non-English languages.

The barriers encountered in visual design, textual content, and tone highlight accessibility and readability issues, which relate to broader concerns about social inclusion in the design of digital payment services in Ireland. As T&Cs are meant to inform users of what they are agreeing to and authorising when signing up for a service (Friedman, Lin and Miller, 2005), T&C accessibility and readability issues could lead to uninformed consent and abuse of authorisation (Utz et al., 2019). To provide a more in-depth analysis regarding user consent, responsibility, and data usage, a codebook was developed (see *Table 5-1: Code book for T&Cs document analysis for sampled banking apps*) to conduct a comparative document content analysis across all sampled banks in the walkthroughs.

Table 5-1: Code book for T&Cs document analysis for sampled banking apps

Category	Definition	Codes
Data Consent	Information on how consent is obtained from users for data collection and processing.	*Explicit Consent:* Explicit consent obtained from users (e.g., checkboxes, agreements) *Implied Consent:* Implied consent through continued use of services *Withdrawal of Consent:* Procedures for users to withdraw consent *Biometric Data Usage:* Usage of biometric data like fingerprints or Face ID for authentication
Data Storage and Security	Details on how data is stored securely, and measures taken to protect data.	*Secure Storage:* Secure storage methods (e.g., encrypted databases) *Backups:* Mention of regular data backups *Security Audits:* Regular security audits and assessments *Breach Notification:* Procedures for notifying users in case of a data breach
Data Privacy	Mentions of how user data is protected and the measures in place to ensure privacy.	*Compliance:* Compliance with data protection laws (e.g., GDPR) *Policies:* Reference to privacy policies *Access Controls:* Mention of access controls to restrict unauthorised access
Third-Party Data Sharing	Information on sharing user data with third parties.	*Purposes:* Purposes for which data is shared with third parties (e.g., fraud prevention, service provision) *Third Parties:* Specific third parties mentioned
Data Usage for Training	Use of user data for training machine learning models or for statistical analysis.	Training: Use of data for training algorithms or models *Statistics:* Use of data for statistical analysis *User Notification:* Notification to users about such usage
Ambiguities and Anomalies	Any ambiguous or vague terms.	*Ambiguous Terms:* Ambiguous or vague language regarding data usage

Following the walkthrough logic, the document content analysis was structured into six steps, reflecting the order in which a user typically interacts with the app: (a) data consent, (b) data storage and security, (c) data privacy, (d) third-party data sharing, (e) data usage for training, and (f) ambiguities and anomalies. This codebook was used to analyse the T&Cs beginning at the point of engagement of a first-time user, while

recognising that the interpretation is informed by the researcher's analytical perspective. This approach reflects the modified walkthrough method, where the researcher engages with the app as a first time user would, but documents and interprets the process with attention to ambiguity, risk, and governance. This enables the identification of areas where consent is given implicitly or without full clarity, raising concerns regarding transparency, platform ethics, and the potential use of personal data for third-party processing or model training. Once initial consent is granted, it becomes embedded in routine use, making withdrawal or modification difficult, particularly when day-to-day access depends on continued acceptance (Kreuter et al., 2020; Lane and Stodden, 2014).

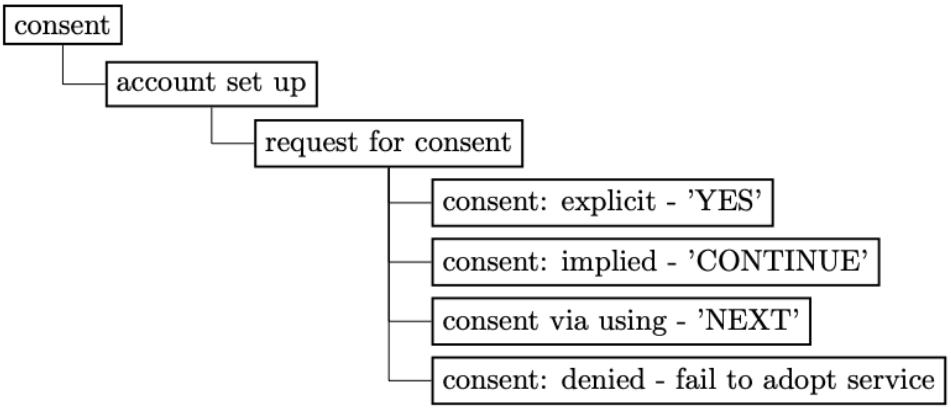
5.2.2 Obtaining and Managing Consent

The content analysis review identifies ambiguities and anomalies in the collected documents. Three key issues emerge: (a) ambiguity when asking for user consent, (b) hidden options to modify, reject, or withdraw consent, and (c) anomalies in the scope within which the user is giving consent. In the digital payment context, consent is required in two forms: explicit consent and implied consent (Utz et al., 2019). In the textual content of the T&Cs, explicit consent is identified whenever the original text directly requests it, for example:

> 'We will obtain your explicit consent before processing any sensitive personal data. This consent will be sought through clear affirmative action.'
> (BOI T&C for general accounts, accessed April 2024)

In the UI design complementing the T&Cs, 'explicit consent' is recognised when the app uses 'consent' instead of 'continue' or 'next' to engage users (see *Image 5-10* in above section). Explicit consent is presented as a direct action, allowing users to proceed with a clear understanding of their agreement. While this does not mean that the terms of explicit consent are entirely free from ambiguities, the process of obtaining it remains clear and straightforward.

Figure 5-1: Consent During Account Setup



In contrast, not all consent-seeking actions that users encounter when adopting digital banking services are as clear. In the context of this analysis, ambiguous consent-seeking actions are identified and defined as 'implied consent' (see *Figure 5-1* above). In the wording of T&C documents, 'implied consent' may occur when the user is prompted to continue service without clearly stating the necessary authorisation requirements. For example, in An Post Money's T&Cs, consent is framed as a consequence of continuing to use the service, rather than as a requirement sought prior to accessing any services (Tsohou and Kosta, 2017).

> 'By continuing to use our services, you consent to our data practices as outlined in this document.'
> (An Post Money T&C for general accounts, accessed April 2024)

This issue is reflected in the UI design of apps that use 'next' or 'continue'—along with similar visual icons—instead of 'consent' or 'agree' during the initial consent-seeking process (Bergram et al., 2020). 'Implied consent' *indirectly* requests user consent, blurring the distinction between giving consent and accessing the service by making these actions simultaneous. This reduces users' legal awareness of approving data consent. In some cases, consent is framed as a result of accessing the service, leaving users with no apparent option to withhold consent while still using the service (Kraft, Skiera and Koschella, 2023). This can pressurise users to give consent, perceiving it as a mere formality for account ownership, and potentially overlooking the level of responsibility that consent entails for their continued use of the service.

In the context of digital banking, consent encompasses essential data requirements mandated by financial regulatory bodies, such as central banks that approve banking licences (e.g., the Central Bank of Ireland and the Financial Conduct Authority), as well as personal data for signing up for digital apps, which vary by provider (Noain-Sánchez, 2016). Additionally, consent may cover communication and marketing data. Essential data in this context includes sensitive personal information, such as copies of users' legal identification, postal address, birth date, and tax credentials or equivalent. This type of information is often referred to as personal data or 'sensitive personal data'. Despite the sensitivity of the personal data required, there is no further explanation or description of what exactly this entails. There is ambiguity in the purpose for all of the T&C documents reviewed for data consent. For two services, Revolut and Chase UK, no explicit purposes are given at all for both essential and non-essential consent.

> 'We require your explicit consent to process your personal data for specified purposes. This consent will be obtained through user agreements or specific consent requests.'
> (Revolut T&C for general accounts, accessed April 2024)

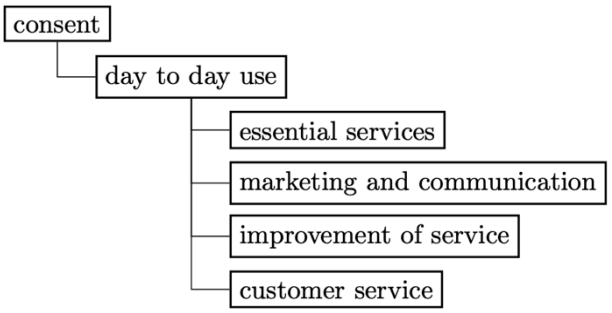
> 'Your explicit consent is necessary for us to process your personal data for specific purposes. This will be obtained through user agreements or specific consent forms.'
> (Chase UK T&C for general accounts, accessed April 2024)

For non-essential data, only marketing purposes are usually stated clearly, such as the provision of personalised offers. For example, N26 and Starling Bank specify that users must provide consent before their data can be used for marketing communications. Klarna similarly requires consent but goes further by declaring they use? personal data to generate personalised shopping recommendations, targeted discounts, and cashback promotions. However, beyond these marketing-related uses, the broader purposes of data collection and processing in the T&Cs are often described in general terms, using non-specific phrases such as 'data processing' or 'improving the service', without further detail. For example:

> ‘Your explicit consent is required for us to process your data for marketing purposes. This will be requested during account setup or when you use specific services.’
> (N26 T&C for general accounts, accessed April 2024)
>
> ‘We will request your explicit consent for processing your data, especially for marketing purposes. This will be done through clear, affirmative actions.’
> (Starling Bank T&C for general accounts, accessed April 2024)

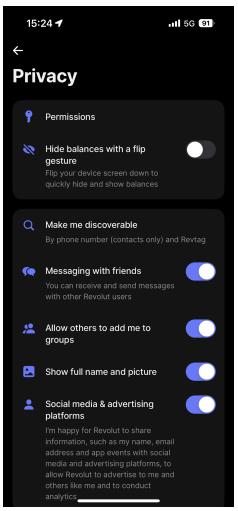
There is a lack of distinction between essential and non-essential data consent, which is reflected in the UI design.

Figure 5-2: Consent During Day-to-Day Use



To clarify the distinction between partial withdrawal of non-essential consent and withdrawal of essential consent (see *Figure 5-2* above), this research considers partial withdrawal of non-essential consent as a form of modifying consent, also referred to as ‘opt-out’ options. The withdrawal of essential consent is referred to simply as ‘essential consent’. All consent-seeking actions are presented as a simple ‘consent or not’ option, with any modifications or personalisation of data consent only available after the initial full consent is granted in order to access the service. As shown in *Image 5-12*, modifying consent is designed as an ‘opt-out’ option and is limited to specific data categories, which can only be accessed manually after full registration via the ‘system settings’ or ‘personal settings’ page. Reaching this page requires multiple steps, which may demand a higher level of digital and technological literacy, not necessarily achievable by all users. As a result, this can be identified as another potential barrier to user control over consent.

Image 5-12: 'Opt-out' in Revolut

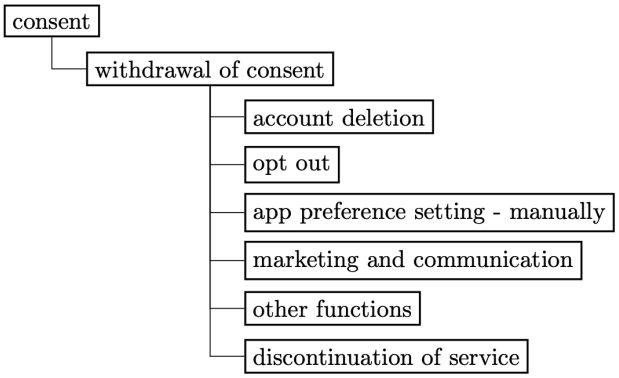


(Screenshot by researcher, 2024)

5.2.3 Withdrawal and Absence of Consent

While the option to modify consent is somewhat hidden in the wording of the T&Cs, the withdrawal of consent is more explicitly mentioned in both the T&C documents and the UI design. All apps provide the option to withdraw consent by discontinuing access to the app. In some cases, this is framed as more of a consequence of withdrawing consent, similar to the implied consent presented during the initial consent-seeking process. Withdrawing essential consent requires interaction with the service provider (see *Figure 5-3* below).

Figure 5-3: Withdrawal of Consent



This is in contrast to modifying consent for marketing and communication purposes, which can typically be self-managed or suspended. For example, the Bank of Ireland requires users to withdraw their consent by directly contacting the bank.

> ‘You have the right to withdraw your consent at any time. To do so, please contact our customer service or use the provided options in our communication materials.’
> (BOI T&C for general accounts, accessed April 2024)

For other services, while there is an option to self-suspend, choosing this option often involves interacting with customer service or confirming the desire to withdraw consent and then subsequently undergoing a human review process. This was tested during an additional walkthrough session using N26 as an example. The process involves being guided by a ‘bot’ agent through in-app customer support to a human agent. The user is then advised that withdrawing consent for any essential personal data will result in the discontinuation of service and is asked to close their bank account rather than having the service discontinued by the provider. For N26, as a digital-only bank, account deactivation can be accessed via the app’s account page. The user must select a reason from a list of options, which does not include concerns related to consent. Once the reason is provided, the account closure request is reviewed and assessed by the bank. At this phase during the walkthrough the researcher chose to keep the account open for *Phase 2* and *Phase 3* fieldwork and did not proceed with the account deletion. This step, using N26 as an example, will be covered after the completion of data collection for all three phases of fieldwork in January 2025.

There are also concerns where the action to seek consent is absent. During the walkthrough process, the use of banking apps requires biometric data, such as fingerprints for ‘Touch ID’ and facial recognition for ‘Face ID,’ to unlock the service, in addition to other security measures like PINs and passwords. These apps also require users to take selfies and videos of themselves performing specific actions to verify that they are human and not bots, including comparing the user’s face with the photos on their legal ID during the authentication process when registering for the service. The requirement for this information involves various levels of biometric data, raising concerns about how these data are referenced in the T&Cs and their compliance with GDPR. As shown in *Figure 5-1* above, biometric data is highlighted under the first

category of data consent. However, a thorough examination of the T&Cs documents reveals no mention of biometric data in any of the documents, which is a concern and points to the absence of explicit consent. This necessitates further investigation outside the framework of walkthrough analysis, including a search for references to biometric data in other legal and public documents (for example, other T&Cs for different purposes and the websites of the sampled apps)[23]. This led to questions on biometric data being asked during *Phase 2* with the experts.

Biometric data was mentioned in two ways: explicitly and ambiguously. Explicit mentions of biometric data were found on designated pages of selected service websites. For example, Revolut provides a downloadable PDF titled *'Revolut Biometric Information Notice*', and BOI has a page under its 'Help Centre' titled 'New Mobile App—Set up' under the 'Biometrics' section. These pages explicitly list how the apps utilise users' biometric data, including details on collection, purpose, storage and security, data sharing, retention periods, and user rights (Revolut Biometric Information Notice, accessed October 2024). They also include subsections on the different types of biometrics. BOI clearly states that biometric data is accessed through the embedded mobile biometric verification and security features.

> 'Setting up biometrics on your mobile (RoI[24] only): Log in to the app and go to the profile section. Depending on the type of device you are using, you should see a section called one of the following:
>
> Biometric login or Fingerprint or Face recognition (for Android)
>
> Touch ID or Face ID (for iPhone)'
>
> (BOI Biometrics webpage, accessed October 2024)

While this information is not included in the general T&Cs, which raises concerns about accessibility, the additional webpages from Revolut and BOI address the absence of consent for biometric data. The second type of mention is more ambiguous, and in some cases, completely absent. For example, if users search for information about biometric data on N26, the chatbot agent directs them to the security page of the N26 website, where there is very limited mention of biometric data. The emphasis is instead on the

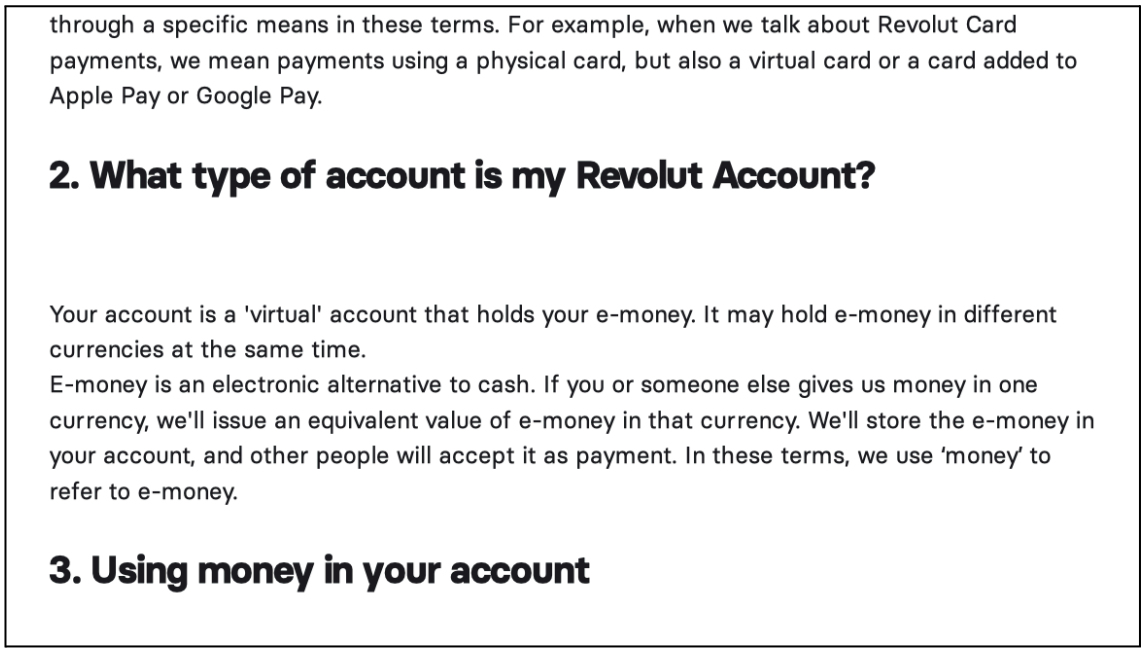
[23] The further search is then conducted after the completion of the walkthroughs in November 2024, during the writing-up period of this chapter.
[24] Stands for the Republic of Ireland.

app's use of multi-factor security features, presumably implying compliance with the mobile phone's embedded security system, including biometric data if supported, suggesting the app is secure. Other sampled apps do not clearly mention biometric data, aside from their app store pages, which ask users to 'allow' the apps to access existing biometric setups from their mobile phone's operating system. This will be further investigated in *Phase 2 Expert Interviews*.

5.2.4 Communication and Interaction

From the walkthroughs and an in-depth review of the T&C documents, users as recipients of services and information, may encounter potential inconsistencies and seemingly contradictory content during their interactions with digital payment apps. The first significant concern that emerges is the tone of communication employed by these apps. Across both registration and routine use, the apps consistently adopt a friendly, conversational tone, speaking directly to users in the second person (for example, 'you can', 'tap here', 'let's get started'). This communication style contrasts sharply with the T&Cs documents, which remain lengthy, formal, and written in specialised legal and financial terminology. Revolut was the only exception where the friendly second person conversational style remains for their T&Cs (see *Image 5-13* below) (Mansell, 2021; Elsholz, Chamberlain and Kruschwitz, 2019).

Image 5-13: Revolut T&Cs big headings, layout and tone



through a specific means in these terms. For example, when we talk about Revolut Card payments, we mean payments using a physical card, but also a virtual card or a card added to Apple Pay or Google Pay.

2. What type of account is my Revolut Account?

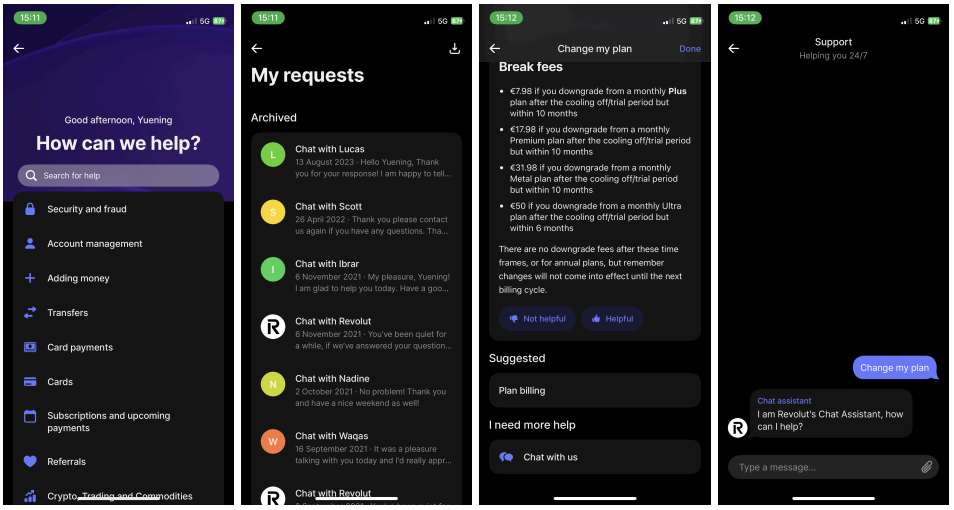
Your account is a 'virtual' account that holds your e-money. It may hold e-money in different currencies at the same time.
E-money is an electronic alternative to cash. If you or someone else gives us money in one currency, we'll issue an equivalent value of e-money in that currency. We'll store the e-money in your account, and other people will accept it as payment. In these terms, we use 'money' to refer to e-money.

3. Using money in your account

(screenshot from Revolut T&Cs by researcher, 2024)

This approach aligns with the emerging trend in app design focused on creating 'user-centred' user interfaces (UI) (McKay, 2013; Filimowicz and Tzankova, 2020). In the user interface (UI) designs of all the sampled digital-only banks, exemplified by the 24/7 help service in Revolut (see *Image 5-14* below), a persona of a virtual assistant, supported by artificial intelligence (AI)-powered chatbots using large language models (LLMs), has been adopted (Letheren and Dootson, 2017).

Image 5-14: Process to reach customer service in Revolut



(Screenshot by researcher, updated October 2024)

These personas are based on the imagined figure of a digital bank teller, and in sharp contrast with the traditional bank teller and the legacy style of dropdown menus demonstrated by early pedagogical agents, such as Clippy, the Microsoft Office Assistant (Pollard, 1996; Dalby, 2005). The aim is to assist users in adapting to the evolving digitalised banking environment. The app personas 'speak' to users as if engaging in an in-person conversation, similar to one that might occur in a physical bank branch. To achieve this, the digital assistants (i.e., chatbots-enabled supporting agents for apps) break down lengthy information into multiple segments for presentation, while utilising interactive touch actions to enhance user engagement (see *Image 5-14* above). Even in the apps of more traditional payment services, such as An Post Money and BOI 365, which do not utilise chatbots, second-person pronouns are still adopted to create a more direct sense of communication, simulating a two-way conversation.

While apps are adopting a conversational style to increase user engagement, there is a significant gap between in-app communication and external links. Using T&C documents as an example, all apps provide links to their full T&C documents externally, either as a web page or a downloadable PDF. However, the majority fail to extend the user-centred or user-friendly tone to these external documents. Instead, they are presented as lengthy legal documents, typically 30 to 50 pages long, filled with financial specialised terminology. This makes them difficult to read for most users (Seeger et al., 2021; Kodongo, 2018). Only Revolut has chosen to present its T&C in a

question-and-answer (Q&A) (see *Image 5-13* above) format, which, compared to other T&C documents, is easier to read, shorter in relative terms, and includes design breaks with questions acting as headings (Lee, 2020). Adopting a more user-friendly format does not necessarily hinder the legally binding functions of these documents but is rather a choice made by the service provider. At this phase of analysis, it can be assumed that this decision may either reflect the service provider's desire to maintain the formal tone associated with banking services or be an unconscious decision as they may not have considered customising the format of their T&C documents as part of the user experience (UX) design. This will be further investigated in interviews with experts.

The second issue concerns ambiguities between in-app communication and other communication channels. With the increasing popularity of digital payments, fraud has become a growing concern, as attackers can easily impersonate service providers by sending phishing emails or requests for account information to gain access to users' bank accounts. As a result, many banks have implemented fraud-prevention measures to alert users to be cautious of third-party messages and to contact their bank only through verified channels (e.g., in-app chat and official customer service phone lines). However, while apps often display notification banners warning users not to trust external links or emails requesting information, all banks continue to communicate and interact with their users via emails and external weblinks when they deem it appropriate. This inconsistency could lead to confusion and undermine the clarity of fraud-prevention efforts. For instance, while digital banks offer insurance services to compete with traditional financial service providers, their insurance services are often handled by third-party providers. The initial sign-up is typically completed during account opening as a benefit for users. However, when users need to make a claim, they are directed via in-app customer service chat to submit their information through a third-party web form or even the external email of the insurance provider. Similarly, for chargeback concerns related to suspicious payments, due to the involvement of payment networks such as Visa and Mastercard, traditional banks can request that customers visit a branch to complete the chargeback process and provide updates via post—a well-recognised method for handling legal and financial documentation. In contrast, digital banks rely on pop-up web pages.

Although digital banks can enhance security settings to protect users when accessing these external pages, there is potential for confusion. Users may be unsure

whether they should trust external links or submit information via email, as banks—both neobanks and pillar banks with digital services—have repeatedly assured and warned users that they would never request information via email or third-party links. To address this issue, BOI has implemented an email and mobile ‘check this for me’ service for its users. If a user receives a suspicious email or text, they can forward the message to a designated email address or phone number with the command ‘check’ or ‘check this for me’ to ask BOI to verify its authenticity. However, the issue with this service lies in users’ awareness of its availability. During four years of regular use of BOI and BOI 365, this service was never directly communicated to the researcher as a general user. The researcher discovered the service through a detailed review of the BOI website as part of the walkthrough for ‘anticipated use’ and noticed a brief mention of it on the webpage. The researcher later tested the service during the walkthrough, and it functioned as intended. However, while the walkthrough was conducted from a user perspective, the researcher possesses more extensive knowledge of both digital technology and personal finance than the average user and has thoroughly examined all the sampled apps. Therefore, it is unrealistic to expect this level of knowledge from all users (Grohmann, Klühs and Menkhoff, 2018), including awareness of support channels that service providers may have but fail to communicate effectively. This issue will be further explored in focus groups with users. For now, it raises concerns that apps may be shifting the responsibility for successfully using the apps and the banking services they provide, as well as improving user experiences, onto the users themselves during their engagement and interaction with these services. This issue will be further addressed in the next section.

5.3 The Responsibilisation of Users

Drawing on the concept of the digital divide (van Dijk, 2019), this section focuses in particular on the second-level divide, which concerns disparities in skills, confidence and the capacity to navigate digital systems. Introducing Hargittai’s (2021) work on digital skills and differentiated online competencies, this divide highlights how everyday users without specialised technological or financial knowledge (Livingstone, 2004; Jenkins, Itō and boyd, 2016) may be disproportionately disadvantaged when essential services are migrated onto digital platforms. Drawing on literature from risk (Frankenfeld, 1992), critical data studies (Gillespie, 2018; Dencik and

Sanchez-Monedero, 2022), platform studies (Livingstone, 2019; van Dijck, Nieborg and Poell, 2019; Srnicek, 2019) and appification (van der Vlist et al., 2023), this section introduces the concept of responsibilisation in the design and operation of digital payment apps. It broadens the discourse on the digital divide beyond mere issues of accessibility and skills to encompass the influence of platforms on those who can connect and use digital payment services. This discussion also addresses the increasing involvement of user labour and the ambiguity in how risks are presented and managed. These risks include those associated with adopting digital banking account ownership, particularly with neobanks that may be unclear about the extent of their banking licences, as well as risks related to personal data security in the everyday use of these banking services. Additionally, it explores the shifting responsibilities that accompany the use of digital banking apps, especially those that are born-digital and incorporate integrated social functions. This thesis frames this automation of tasks in the app as responsibilisation. Responsibilisation refers to the shifting of institutional responsibilities—such as identity verification, data consent management, or error reporting—onto individual users through the design of digital systems (Livingstone, 2004; van Dijck, 2019). In banking apps, users are expected to perform tasks once handled by financial staff, including interpreting documentation requirements, verifying their own compliance, and resolving technical or service issues via digital tools. This shift illustrates how apps embed an assumption that users can and should take on responsibilities central to accessing essential financial services.

5.3.1 The Appified Ecosystem

With the advancement of a new generation of smartphones and 5G internet connectivity, apps now incorporate more complex functions, often integrating multiple services into a single platform. For example, under the *Transactional Imaginary*, there are payment apps with social functions and social networking apps incorporating ‘wallet’ features. This trend is known as appification (van der Vlist et al., 2023). Under appification, multiple previously separate functions—communication, payment, shopping, mobility—are incrementally consolidated within single applications. In some cases, this consolidation develops into what are commonly referred to as ‘super apps’, platforms that ‘do everything’ (Steinberg et al., 2022). Users may form latent communities and identities through their app use, transferring interactions from other services into the

centralised app when possible, which fosters the development of ‘super apps’ (Kavitha, Uma Maheswari and Sujatha, 2023). Originating in Asia, a super app is defined as a single app that integrates multiple services and functionalities, such as finance, social networking, and e-commerce, which were previously provided through separate apps (Fasnacht, 2021; Chai and Amaral, 2022). Super apps are therefore not a separate phenomenon but an intensified form of appification. They illustrate how everyday activities, from service access and interpersonal communication to work, entertainment, and media consumption, become organised within a single, app-centric environment. This reflects an ‘appified ecosystem’ (Morris and Murray, 2018) in which diverse services are accessed through one platform or a tightly connected network of platforms. In such ecosystems, the centralisation of services reshapes how users interact, moving everyday social and financial practices into platform-mediated environments (van Dijck, Poell, and de Waal, 2018). In appified ecosystems, the expansion of functions within a single platform also shifts the demands placed on users. As services become increasingly consolidated, users are required to navigate more complex interface environments, manage multiple forms of identification and consent, and interpret automated prompts without interpersonal guidance. This intensifies what van Dijk (2019) describes as second-order digital divides, where inequalities arise not simply from access, but from differences in skills, literacy, and capacity to manage digital systems. It is within this setting that responsibilisation emerges most clearly: users must assume tasks previously undertaken by institutional staff, becoming responsible for verifying identity, maintaining account security, resolving errors, and managing data privacy within the platform itself. Therefore, using such apps creates a self-contained digital ecosystem that fosters user dependency, with the app assuming a central role in users’ everyday lives. Although apps in this ecosystem are designed to offer more functionality, users are required to possess a higher level of digital literacy to utilise the advanced functions. These functions include interacting with non-human agents such as chatbots, self-verifying essential documents, and navigating GDPR-compliant data consent. This complexity raises social concerns about the challenges users face when navigating these app ecosystems.

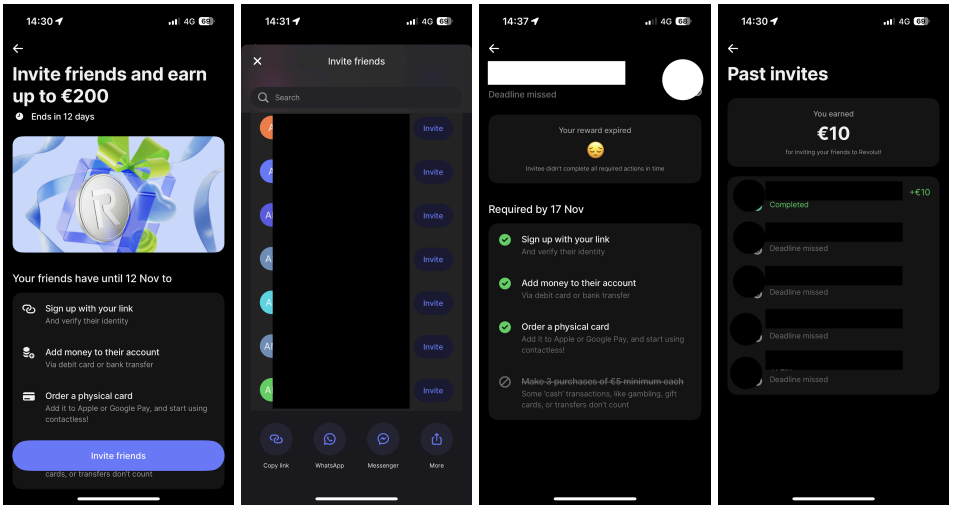
In the appified ecosystem, by engaging with digital banking apps, bank customers take on an additional layer of identity as ‘app users’. For traditional banks, their banking app serves to support selected functions, while there remains an opportunity to opt out of using the apps (Chan et al., 2022). The app user identity, while

promoted, is an additional layer complementing the traditional bank customer role. However, for born-digital banking apps, the service cannot operate independently outside the app ecosystem (Sakas, Giannakopoulos and Trivellas, 2023). Therefore, users who open bank accounts through these apps become both bank customers and active participants in a self-sustaining digital banking network. Unlike traditional bank customers, they lack multi-channel support, which limits their service options. Within this framework, digital banking app users participate in an ecosystem where they can make payments to each other directly, bypassing the SWIFT network or third-party payment systems like Visa and Mastercard. From the service provider's perspective, this initiative is part of creating a decentralised system that facilitates instant transfers without relying on any external networks (Meager, 2019). It also reflects the convergence of the digital and transactional imaginaries that utilise advanced digital technologies, namely blockchain and cryptocurrency technology. These innovations replace traditional institution-based networks to facilitate more direct, user-to-user transactions.

While direct user-to-user services can simplify personal transactions and benefit daily activities, such as splitting bills within the appified ecosystem, they have limitations. Firstly, they emphasise the app environment, thereby promoting the identity of the app user over that of a traditional bank customer. For example, the widely advertised 'seamless service', which sets born-digital banks apart from traditional banking, is only available if all participants are already using the same app. To enable this, born-digital banks often request access to phone contacts or other social networks to identify and display existing users who have adopted the service. They then use this contact information to encourage existing users to prompt their contacts to join through interpersonal communication, such as text messages and in-person conversations. This reliance on users for growth suggests that these platforms are not entirely self-contained ecosystems but rather depend on users' external social networks to drive customer expansion. Moveover, they often offer 'cash rewards' as an incentive that can be claimed through the use of personalised sharing links or codes. After new users complete their verification and authentication during the initial signup, they are prompted to perform a series of small tasks to demonstrate active engagement with the service, such as ordering a physical card, making a first purchase, or depositing at least 15 euros (see *Image 5-15* below). The existing user who shared their personalised code

then receives a referral bonus ranging from 30 euros to a chance of 200 euros[25]. This offer can also be accumulated, allowing users to send multiple invitations to their social network to earn multiple rewards, effectively turning digital banking app users into part of the apps' sale and promotion teams.

Image 5-15: Referral tasks in Revolut



(Screenshot by researcher, updated 2024)

The reliance on users' social networks to promote digital banking apps creates ambiguity in constructing trust and recognising trustworthiness, especially for digital banking services. Signing up for a financial service requires a high level of trust. This traditionally depended on institutional trust in state institutions (e.g., national banks), public services (e.g., postal services), and deposit insurance guarantees provided by regulated financial providers, such as central banks and other regulatory bodies, to protect account holders in the event of a bank failure. In Ireland, for customers of pillar banks such as BOI and AIB, deposit insurance is provided by the Deposit Guarantee Scheme (DGS), which is separate from a bank's licensing. This scheme 'protects depositors in the event of a bank, building society, or credit union authorised by the Central Bank of Ireland being unable to repay deposits.' It covers up to €100,000 per person, per institution, for current accounts, deposit accounts, and share accounts (Deposit Guarantee Ireland, 2024). Although risks and potential mistrust may exist among parties, from customers to service providers, the liability is clearly identified on the service provider's side. Moreover, bank customers could suffer consequences from a

[25] a seasonal offer to selected users.

bank crash and other financial crises (Thorhallsson and Kirby, 2012), as banks may hold a banking licence without being fully covered by the DGS, potentially leaving its customers at risk. But they are not the responsible party to blame.

With the introduction of referral links and codes, the source of trust becomes blurred for new users, as they may be influenced by their personal connection with the person from whom they receive a referral request. They might also transfer the trust in an individual, who does not associate with the app apart from being a user, to the trust of the service. This transfer and potentially misleading trustworthiness are somewhat analogous to advertising in the mass media era (Soh, Reid and King, 2007). By sponsoring advertisements on known trustworthy channels, such as national news channels and newspapers, advertisers could leverage the existing channel trustworthiness for their own products or services (Eisend and Knoll, 2012; Kiousis, 2001). Yet, in the case of mass media, the responsibility remains with the media outlets and advertisers who are clearly informed and understand their responsibilities and risks. These features illustrate how responsibilisation extends beyond regulatory compliance into the social dimensions of digital finance. Referral systems, for example, enlist users to act as promoters and guarantors of trust for financial services, mobilising their personal networks in ways that blur the line between consumer and intermediary. Trust, which historically rested on institutional guarantees and state regulatory oversight, is reconfigured as something that circulates through user-to-user interactions, with the risks of misinformation or exclusion borne by individuals rather than institutions.

In digital banking services, individuals who share their referral links and codes may not fully understand the impact of referring potential users from their personal networks and their role in creating trust in commercial services. Unlike public advertising channels such as newspapers, these individuals are not responsible for scrutinising the services they promote. Furthermore, they are typically unaware of any negative consequences that may arise from their referrals, as they are only shown the potential cash rewards. Users engaging with referral links in digital banking apps are expected to understand how these links work, track task completion by referrals, and navigate potential liabilities, requiring digital, financial, and even legal literacy. The service provider accesses their social contacts with minimal explanation regarding the use and storage of this data. As a result, users inadvertently become part of the process of constructing trust and trustworthiness for the apps they use. Moreover, while the apps fail to explicitly inform users who share referrals about the responsibilities involved, the

associated risks are left for users to understand and manage. This suggests that service providers implicitly expect users to grasp these responsibilities, which often exceed the average knowledge and experience of everyday users without specialised skills in digital finance. This raises concerns about the burden of user labour and the responsibilities imposed on users, which will be discussed in depth in the following T&Cs.

5.3.2 Automation, User Tasks and Responsibilisation

The walkthrough analysis shows that digital banking apps increasingly integrate automated workflows while simultaneously requiring users to carry out tasks that were previously managed by in-person staff. Users are often expected to possess a certain level of skills, knowledge, and initiative when engaging with digital services (van Dijck, 2009). However, digital banking apps require an advanced level of both digital and financial literacy that exceeds what is typically expected when accessing an essential service. In this sense, users are required to 'do more' than would normally be involved in everyday app use. Existing literature conceptualises such additional effort as user labour, understood as the unpaid and uncompensated work performed by users as part of their interaction with digital platforms. This concept has been developed largely in relation to social media, where users generate value through constant engagement, data production and self-management (van Dijck, 2009; Jarrett, 2022). This framing, however, has predominantly focused on user-generated content, where labour is visible and often monetisable (for example, producing posts or creative outputs).
In the context of digital banking apps, the tasks required from users are of a different kind. They involve performing procedural, technical, and interpretive work that was previously undertaken by institutional staff. This work does not produce content and is not directly monetised. Instead, it reflects a transfer of responsibility onto users, where access to essential financial services is contingent upon their ability to navigate automated systems 'at their own risk'. In this way, responsibilisation is embedded in the design of digital banking apps, normalising the expectation that users must independently manage compliance, verification, troubleshooting, and decision-making processes that underpin everyday banking.

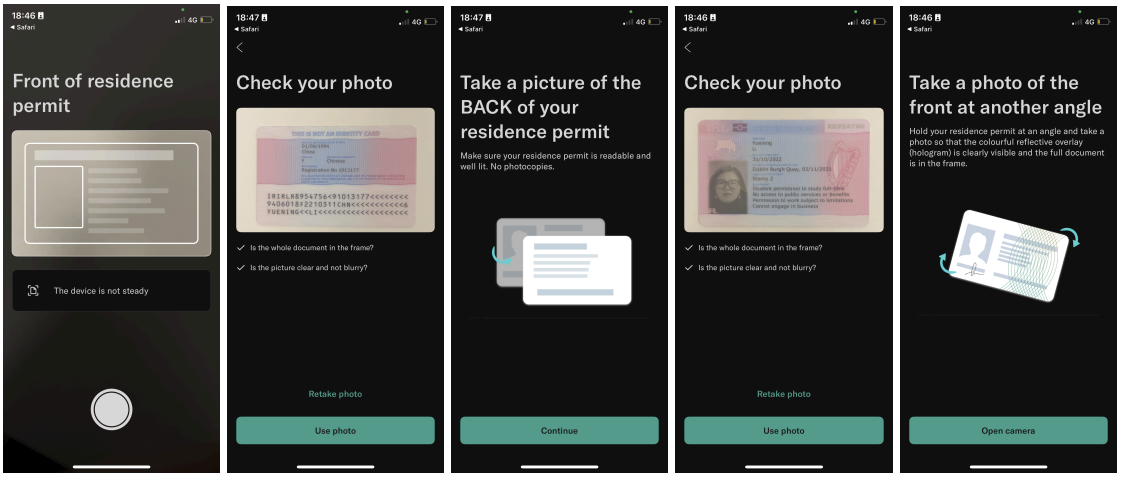
The embedded responsibilities discussed here arise from how automation is implemented in the design of mobile banking apps. As outlined in *Chapter 3*,

automation refers to processes delegated to algorithmic and interface-driven systems, whereas responsibilisation refers to the expectation that users complete, monitor, and validate the steps required to access and maintain banking services. These two dynamics work together to form a hybrid model of service provision in which users are positioned not only as consumers, but as active agents required to facilitate the operation of the service itself. Identity verification provides a clear example. While identity verification is a legal requirement for opening a bank account, the manner in which verification is carried out in digital banking apps shifts interpretive and procedural responsibility onto users. Across the apps examined, users were required to upload passports, residence permits, and additional supporting documents, often without clear guidance or acknowledgement of the complexities experienced by certain groups, such as migrants or international students. Users needed to determine which documents were required, as in the case of non-EU residents who must provide both a passport and an Irish Residence Permit, even when this was not explicitly stated in the user interface. During the walkthroughs of all banking apps, I experienced this directly. As a non-EU long-term migrant on a yearly renewing Irish Residence Permit (IRP), I had to decide for myself when to provide my passport, my IRP, or both, even though the apps only requested a 'legal ID'. Moreover, in Ireland the IRP is not legally recognised as an official form of identification, a point printed on the physical card. This placed the burden on users, including myself, to recognise this discrepancy and navigate the contradiction within the onboarding process. In practice, this often meant trying one document first and then another, ruling out all possible options, or eventually waiting for human assistance. This example illustrates that users were also responsible for adjusting technical conditions, such as camera angles, lighting, or including a date-stamped object, when automated verification systems failed to authenticate their documents.

The tasks required to be performed by users are embedded within automated verification pipelines that presume a high level of digital literacy, bureaucratic awareness, and problem-solving capacity. Rather than replacing labour, automation redistributes it: the app performs the procedural check, but the user must perform the work of preparing, correcting, and re-submitting documentation until it satisfies the automated system. In this way, responsibilisation becomes a condition of access, particularly affecting those whose identities, documents, or life circumstances do not neatly align with the assumptions built into automated verification workflows. Such

tasks are illustrative of the responsibilisation of users. What would traditionally be managed by a bank clerk—reviewing documents, clarifying requirements, and providing judgement on validity—is now embedded in automated infrastructures that shift the interpretive burden to users. Responsibility is reframed as a condition of access: users are made accountable not only for providing authentic documents, as required by law, but also for ensuring that their submission is technically and procedurally acceptable to the automated system. Failure to do so may result in account rejection or suspension, even if the legal documentation is valid. This highlights how apps blur the distinction between institutional requirements and platform-specific demands, responsibilising users managing both dimensions simultaneously.

Image 5-16: Procedures to upload photo ID in N26

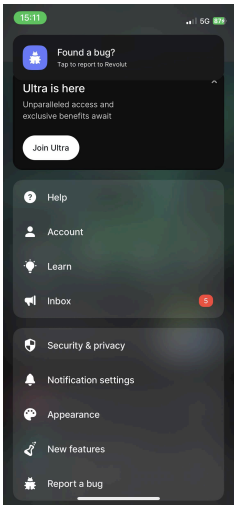


(Screenshot by researcher, 2022)

Another example is the expectation that users act as quality assurance agents. Revolut, for instance, prompts users with a banner—'Found a bug? Tap to report'—whenever they take a screenshot within the app. Although framed as an optional and user-friendly feature, the repeated prompt normalises the idea that users should identify, categorise, and report technical issues. Tasks that would previously belong to professional developers or customer service teams are now reframed as routine aspects of user interaction. This is not merely the outsourcing of labour but a redistribution of responsibilities onto users, facilitated by automation. Similar patterns appear in chatbot-mediated support, where users are expected to phrase questions in precise ways, select categories from dropdown menus, or iteratively refine their queries to achieve

resolution. Automation sets the boundaries of possible interactions, while responsibilisation requires users to adapt their communication to suit machine-readable formats.

Image 5-17: 'Found a bug? Tap to report to Revolut'



(Screenshot by researcher, 2024)

Similarly, in-app chatbot-mediated support often requires users to select the precise option. This can be in the form of a dropdown menu when they are already experiencing difficulties or to 'type a concise question' when seeking support (Naaman, 2022). These apps now require users to take the responsibility to communicate with the service and the platforms themselves, in this context, the apps, and improve their own user experiences (see *Image 5-13* in the above section). By designing the apps in this way, they link users' experiences to varying levels of digital and financial literacy, providing better services to those who can adapt to the app ecosystem, such as faster customer service. Similarly, during the consent process, users need digital and financial literacy to grasp their consent fully, as the apps provide minimal guidance beyond lengthy legal terms. Additionally, users must differentiate between app registration and banking service enrolment, even when these processes appear integrated in the user interface. However, users should not bear the responsibility of adjusting their behaviour and presenting it in a machine-understandable way as the sole means of improving their app experience, particularly in banking services, which are considered critical and should be accessible to all (Avignone et al., 2021).

These design patterns create a layered expectation that users will not only complete required tasks but also monitor, interpret, and correct issues without

institutional assistance. Such expectations become problematic when combined with the essential nature of banking services. As discussed in *Chapter 2*, payments are a fundamental part of everyday social life (Simmel, 2011). Banking therefore holds a public utility function (Avignone et al., 2021). However, as physical branches close and services migrate to digital platforms, the ability to access and use banking effectively increasingly depends on the user's digital and financial literacy. This means that a lack of proficiency does not simply result in inconvenience but may lead to meaningful exclusion. The walkthrough findings show that users who cannot meet platform expectations may be unable to open an account, complete transactions, or resolve service disruptions. This intersects with broader inequalities. Certain groups are disproportionately affected, namely, migrants, those in precarious employment, individuals with non-standard documentation, and users with lower digital literacy. In several cases, eligibility requirements were not disclosed until deep within the onboarding workflow. For example, Starling Bank UK and Chase UK presented themselves as open to Irish users but accepted only specific identification documents, such as Irish passports, effectively excluding legally resident non-EU migrants. The burden of discovering this exclusion fell to the user, who expended time and effort before encountering a system-imposed limit. This highlights how responsibilisation is not only a matter of completing tasks; it is also about determining one's own eligibility within opaque institutional boundaries.

These patterns link directly back to the theories presented in *Chapter 3* that platformisation restructures service infrastructures around standardised, automated systems. As a result, access becomes conditional on the user's capacity to align themselves with platform logic. The walkthrough findings demonstrate how responsibilisation operates not only at the level of individual interaction but at the structural level of financial participation. Access to banking is shaped by how platforms define and enforce the 'ideal' user — one who has standard documentation, stable residency status, high digital literacy, and the ability to self-navigate automated workflows, which has implications for inclusion. While responsibilisation may be experienced as seamless and efficient for users who match the profile of the ideal user, it produces barriers for those whose circumstances diverge from platform assumptions. The walkthrough findings thus illustrate how automation does not remove human judgement but redistributes it, embedding institutional expectations in interface sequences and algorithmic thresholds. Users are required to interpret these expectations

and adjust their actions accordingly. Where this is not possible, exclusion occurs which may not be at the point of explicit refusal but through repeated friction, delay, or inability to complete required steps. This highlights the need for Human-Centred Design that takes into account the diversity of users' skills and knowledge levels to ensure accessibility for critical services and the responsible use of technology for social good (Lupo-Pasini, 2020; Følstad et al., 2018; Madianou, 2021).

The appified system transforms bank customers into app users or at least adds the app user identity to their existing role as bank customers. While doing this, they only highlight the benefits of the apps without increasing users' awareness of their new roles as app users. However, the walkthrough identifies issues related to the increasing demand for user labour and the expectation of skills and knowledge not clearly demonstrated during the initial sign-up stage. To illustrate, users are offered banking services with the promise that they can bank anywhere, anytime using apps available on various operating systems and devices. There is no explicit mention of additional skills beyond those required for using any other app. Nonetheless, with continued use of these apps, users encounter functionalities that would be more accessible if they had a higher level of digital literacy (Healey, 2019). For example, to benefit from a referral link, users are expected to understand how referral links work and are required to check the task list to ensure their referrals complete the tasks on time to gain the rewards. This is a responsibility typically not imposed on users. Another example is during the consent stage, users are expected to possess knowledge in both digital and financial literacy to understand their own consent. Apps as service providers offer no additional guidance beyond the lengthy legal discourse of the T&Cs documents. Building on the concept of the digital divide, the disadvantage caused by digital technology is not merely a matter of connectivity, even when focusing solely on technological factors (van Dijck, 2019). Accessibility and availability of services can vary greatly depending on a user's level of digital literacy, financial literacy (Chan et al., 2022; Kodongo, 2018), and sometimes even media literacy (Ng, 2012; Livingstone, 2015). This means that while users might connect to the most basic services, such as signing up and adopting account ownership, they may face barriers and exclusions in their continued use of the apps. In the complex design of apps with growing functionality, different levels and types of literacy may be required that differ from the general requirements to access the app services as a whole.

Building on the findings concerning automated processes, opacity in T&Cs, and labour, responsibilities, labour, and risks, this section conceptualises these changes and

issues using the concept of responsibilisation (Valverde, 1996). Responsibilisation refers to the transfer of accountability from institutions to individuals through legal and bureaucratic mechanisms, such as licensing and consent (Trnka and Trundle, 2014; Brown and Baker, 2012). This research extends the concept into the platform context by showing how sectoral platforms, like banking apps, responsibilise users through both interface design and procedural flows. Responsibilisation is not only a legal procedure but a design logic. Throughout the modified steps, in particular, step (c) Terms and Condition, (d) Registration, verification, and authentication, and (e) Customer service, users are consistently positioned as self-governing actors expected to navigate complex legal, technological, and procedural environments without assistance. Consent processes are emblematic of this shift and obscures the threshold between user agreement and platform access, particularly when sensitive data such as legal identification and income statements are involved. Moreover, consent management rests with the user. Options to modify, reject, or withdraw consent are hidden or fragmented across multiple app layers, and often only apply to marketing preferences. Broader data collection and processing agreements are non-negotiable, resulting in 'simulated consent' (Cohen, 2013). This refers to formal consent obtained without meaningful user comprehension. These mechanisms uphold legal compliance but undermine user autonomy, especially for those with limited financial or digital literacy (Rink, Walle and Klasen, 2021; Healey, 2019).

Responsibilisation also manifests in how platforms shift labour and risk onto users. In step (d) Registration, verification, and authentication, if these automated checks fail, users are presented with a disclaimer stating that the burden of failure lies with them, even when platform standards are not fully disclosed. Similarly, in step (e) customer service, when users are routed through FAQ pages and chatbot systems, human assistance is often obscured behind escalation layers. These changes cause users to perform essential onboarding labour without remuneration, while these platforms benefit from reduced operational costs.

The effects of responsibilisation are not evenly distributed. During the walkthroughs, these burdens were most visible in cases where I did not hold documentation that aligned neatly with the automated verification expectations of the apps. For example, in apps such as N26, Revolut IE, and Chase UK, the system interface assumes that the user holds a single, nationally issued identity document that is easily machine-readable. In practice, however, many legally resident users in Ireland,

including international students, work permit holders, and long-term migrants, must provide two or more documents (e.g., passport plus Irish Residence Permit) to demonstrate legal status. The apps did not consistently specify this requirement in advance, meaning that users needed to diagnose failed verification outcomes themselves and determine which additional documentation was required to proceed. In several walkthroughs, automated checks repeatedly failed to recognise the Irish Residence Permit due to glare, background colour, or edge detection constraints, prompting repeated re-submission attempts and additional proof steps (see Figure 5-16). In these instances, the burden placed on the user is not simply technical but interpretive: the apps delegate to the user the responsibility to understand why verification failed and how to resolve it. This demonstrates how responsibilisation intersects with existing forms of financial and bureaucratic discrimination. While the walkthroughs cannot directly establish patterns of exclusion on its own, they clearly show that those with more complex documentation arrangements face more prolonged and uncertain onboarding processes. This observation is further explored and verified with both expert insights and user experiences in *Chapter 6* and *7*, where several participants describe encountering similar challenges and frustrations. In this way, the walkthrough findings provide an empirical basis for understanding responsibilisation not as a uniform expectation, but as a practice that disproportionately impacts users whose identities fall outside the standardised assumptions embedded in automated verification systems.

Conclusion

To conclude, this chapter presents *Phase 1* findings derived from the modified walkthroughs of seven mobile banking apps widely used in Ireland. These findings directly address the first research question by identifying three dominant social imaginaries of money, payment, and banking that are encoded in app design and interaction flows as (a) the Institutional Imaginary, (b) the Transactional Imaginary, and (c) the Digital Imaginary. The analysis shows how broader imaginaries of money, discussed in Chapter 2, are operationalised into platform logics and interface choices in mobile banking environments. Institutional imaginaries are most evident in state-linked or legacy services such as BOI 365 and An Post Money; Transactional imaginaries are most evident in neobanks like N26 and Revolut, which foreground interpersonal transfers and everyday payment circulation; and Digital imaginaries appeared in

dematerialised, data-driven features such as cryptocurrency investing and pay-later models in Revolut and Klarna.

The chapter also contributes to answering the second research question by examining the barriers to access and use that emerge through app design, particularly during the modified walkthrough steps relating to registration, identity verification, consent, and customer support. While the findings cannot answer the second research question fully, it identified legal, financial and digital barriers from a user perspective that were used to inform expert interviews and user interviews for both *Phase 2* and *3*. The analysis showed how responsibilisation is embedded into these workflows, requiring users to complete tasks once carried out by bank staff and to interpret requirements that are not always transparently communicated. These processes presume high levels of digital and financial literacy and place greater burdens on users with non-standard documentation or more complex legal and financial circumstances. In this way, app design shapes differential experiences of accessibility and can reinforce existing inequalities rather than resolve them.

Overall, *Chapter 5* demonstrates how collective understandings of money, payment, and banking become tangible in digital banking interfaces, and how these same designs redistribute responsibility to users in ways that can produce new forms of exclusion. These findings provide the conceptual and empirical foundation for the next two chapters. *Chapter 6* examines how industry and regulatory actors understand and justify these design practices, while *Chapter 7* explores how users encounter and negotiate these imaginaries and responsibilities in everyday banking situations.

Chapter 6 Re-classification of Banks: Changes, Cost, and Convergence

Introduction

The findings from *Chapter 5* demonstrated how mobile banking apps embed particular social imaginaries of money and payment into their platform design and governance, and how automated processes increasingly responsibilise users to independently navigate eligibility, verification, consent, and problem-solving. These findings highlight that digital banking services are not neutral technological tools but institutional arrangements that shape who can access banking, under what conditions, and with what burdens of interpretation and self-management. *Chapter 6* extends this analysis by examining how the banking industry understands digital banking infrastructures, user groups, and institutional priorities, thereby illuminating how the imaginaries identified in *Chapter 5* are articulated and operationalised at the organisational level.

This chapter presents the findings and discussion of the interview data collected from twenty-one experts across four categories: regulators, developers and designers, management (internal and external), and branch workers. The interview schedule was organised into four sections as (a) digital banking apps, (b) design and affordance, expected user groups and skills, and (d) social impact. The interviews were informed by the findings from *Chapter 5*. The questions posed to experts therefore addressed these concerns from the perspective of those who design, regulate, or provide banking services in practice. The modified app walkthroughs of seven digital banking apps in the Irish market (see *Chapter 5*) enabled an examination of digital banking services from the researcher/user perspective, revealing three dominant imaginaries of payment as *Institutional, Transactional*, and *Digital*. These imaginaries illustrate how collective understandings of money and banking are translated into platform design and governance. While analytically distinct, these imaginaries converge and overlap within particular banking services, influencing how banks construct assumptions about their expected users. The expert interviews provide insight into how banking institutions understand this convergence, how they imagine their current and future user base, and how these imaginaries are translated into practice through organisational

decision-making, channel restructuring, compliance processes, and digital product development.

The interview findings reveal a reclassification of bank types in the contemporary banking market. This reclassification is not a descriptive mapping but a conceptual contribution of this thesis, clarifying how banking institutions now differentiate themselves in relation to platformisation, regulatory obligations, infrastructural capacities, and client or customer segmentation. These distinctions are therefore presented and analysed as part of the findings, rather than as background description. This chapter is divided into three sections. *Section 6.1* clarifies and revises the categorisation of bank types in the context of digitalisation, addressing the continued influence of postcolonial institutional legacies, the restructuring of services under platform logics, and the partial incorporation of decentralised finance models. *Section 6.2* examines industry strategies identified in the interviews, including cost management, the consolidation of access channels, the deployment of chatbots and hybrid branch models, and the definition of intended user groups. This section foregrounds the industry's construction of an 'ideal user'—a technologically fluent, bureaucratically legible, and continuously reachable individual—which implicitly shapes assumptions about who banking services are designed for. *Section 6.3* compares these industry assumptions with the patterns of exclusion emerging in user experiences, which are further elaborated in *Chapter 7*.

This chapter directly answers the third research question: Are there policies, strategies, or solutions in place to make banking services more socially inclusive in Ireland? It examines how social imaginaries of money and payment, identified in *Chapter 5*, are implemented, justified, and institutionalised within the banking sector, and how these imaginaries shape decisions about service delivery and access. In doing so, the chapter also responds to the broader concern of exclusion. By analysing how experts conceptualise users and justify these structures, this chapter traces how exclusion is not incidental but embedded in institutional logics of digital banking service design .

6.1 Defining Contemporary Banks in Ireland

This section develops a revised classification of contemporary banking types in the Irish context based on the expert interview findings with reference to the walkthrough findings from *Chapter 5*. Rather than adopting pre-existing categories from industry or academic literature, the (re)classification presented reflects and represents the development of banking service in the digital context, in particular, as sectoral platforms, which constitutes an analytical contribution of the thesis. As discussed in *Chapter 3*, digitalisation and platformisation have not simply introduced new technological features. They have reshaped the organisation of banking services, the expectations placed on users, and the social imaginaries that underpin what banking is understood to be. These changes are layered onto a banking system already shaped by postcolonial regulatory legacies, the 2008 financial crisis, and ongoing restructuring of physical branch networks. As a result, terms such as 'pillar bank', 'national bank', and 'challenger bank' now circulate with multiple and sometimes contradictory meanings across regulatory, industry, and everyday registers.

The analysis of expert interviews demonstrates that these terms are not neutral. They carry assumptions about who banks are for, which services are considered essential, and what forms of access (branch, app, call centre) are treated as standard. As these assumptions structure eligibility, documentation requirements, and modes of interaction, the classification of bank types is directly tied to exclusion in practice. This section therefore clarifies how banking institutions are currently differentiated in Ireland and examines how these differentiations intersect with user access, digital literacy, and legal status. The interviews highlight that banking categories in Ireland cannot be understood without acknowledging the regulatory and historical foundations that shape the banking system. For this reason, the section begins with the Central Bank of Ireland as the institutional anchor through which all other bank types are authorised, differentiated, and governed.

6.1.1 The Central Bank of Ireland

Ireland has a rich banking history and complex legacy banking systems, shaped by British colonisation and significantly impacted by the 2008 banking crash (Thorhallsson and Kirby, 2012). With the increasing influence of digitalisation and platformisation in

banking (see *Chapter 3*), existing terminologies for bank categorisation require revision to reflect these transformations. The introduction of app-based interfaces, automated verification processes, and data-driven service delivery has reshaped how banks operate and how users access them. Seven experts highlight that, traditionally, banks were divided into commercial banks that served business clients and retail banks that provided services to individual customers. However, this binary framework no longer fully captures the range of institutional forms and service models present in the contemporary Irish banking landscape, particularly as digital platforms blur distinctions between organisational types and user groups.

Commercial banks historically centred their services around business clients, meaning that individuals without commercial activities had limited reason or opportunity to interact with them. Since this thesis examines everyday access to banking for individual users, commercial banks fall outside the scope of the empirical analysis. Over time, banking institutions began to differentiate their services to address the distinct needs of commercial clients and individual consumers, leading to the early division between commercial banking and retail banking that structures the modern banking landscape. For retail bank services, this division prioritised 'high-net-worth' customers, as they were frequently also business customers or landowners with estate accounts with the bank (Rajan and Ramcharan, 2011). This prioritisation is a preserved function from early banking infrastructure which primarily served the high-income class. However, the social function of banks shifted with contemporary economic development. Since industrialisation, income sources have become more diverse across different professions, increasing the need for individual banking and motivating the advancement of retail banking (Chan, 2024; Molyneux, 2017). Public access to banking services became crucial as people began receiving their salaries and social welfare payments directly into their bank accounts (Claessens, 2006). Accordingly, the emerging demand for retail banking services challenged the existing banking infrastructure, leading to the development of new banking types and reformation of existing banking types.

In their interviews, four experts suggest that the regulatory framework in Ireland has undergone multiple major changes. It contains traces of colonial legacy, aligns with European Union (EU) economic policy, and represents national identity. The Central Bank of Ireland (CBI) serves as the primary regulatory authority for financial institutions in Ireland. Established in 1943 under the Central Bank Act 1942, the CBI

underwent significant restructuring with the enactment of the Central Bank Reform Act 2010. This legislation transformed the CBI into a 'single unitary body' (CBI, 2024), consolidating its functions and replacing the previous dual regulatory framework that mirrored the structure in the United Kingdom (UK).

> '[The Central Bank of Ireland] was founded to issue the Irish pounds. Before that, it was the sterling [pounds], so inherently we mirrored the Bank of England. But we don't want that association [with British infrastructure]. The Bank of Ireland was something new at the time, and since then, there have been a lot of changes to become this bank now. In the 1920s, we were on the British dual regulation system, but now we are the only regulator for financial institutions in Ireland.' (R3, 2024)

In the UK, the Bank of England (BoE) operates as the national central bank and co-regulates the financial sector alongside the Financial Conduct Authority (FCA) through the Prudential Regulation Authority (PRA) (BoE Memorandum of Understanding, 2023). Under this system, banking licences are co-issued and dual-regulated by the FCA and the PRA, the latter functioning under the BoE (ibid). The difference in regulatory frameworks also leads to different uses of the term 'national bank'. In the UK's dual-regulatory framework, to differentiate from the FCA, the BoE is sometimes recognised as 'the national bank'. In contrast, in Ireland, with the CBI operating as the 'single unitary body', as its name suggests, it is more commonly recognised as 'the central bank', leaving the term 'national banks' to carry a different meaning in Ireland. This distinction is not simply terminological but reflects different organisational histories, regulatory expectations, and forms of public recognition that shape how banks position themselves and how users understand their role. Regulatory design is not distributionally neutral. The interviews indicate that ID and eligibility pathways tied to specific documents depending on citizenships may indirectly exclude legally resident non-citizens who hold alternative documentation (e.g., IRP), while centralised licensing and passporting simplify market entry for providers but do not guarantee inclusive onboarding for all residents.

6.1.2 Pillar banks and National Banks

The early function and division frameworks have been preserved in contemporary banking without sufficient adaptation to changing markets and the evolving social roles of banking (Richards, 2012). As the literature on the institutionalisation of banking indicates (see *Chapter 2*), early banks were initially established locally as decentralised regional commercial establishments. Later they became centralised to enhance state regulation and to respond to increasing international banking demands driven by globalisation and international trade. However, banks have not always fully adapted to emerging demands, and each reformation may carry legacy effects from existing banking charters that may now be outdated. This creates confusion regarding banking terms and gaps between regulatory definitions, official banking terminology, and public perceptions of these terms, highlighting the need for clarification.

The expert interviews show that 'pillar bank' and 'national bank' are frequently used interchangeably in public discourse, yet they refer to analytically distinct formations in Ireland. This distinction matters, because it signals different expectations regarding stability, cultural representation, geographical access, and social responsibility. In the context of digitalisation and ongoing branch closures, these expectations determine who is able to access face-to-face banking and who is instead redirected into app-based or self-service channels. Clarifying these categories therefore reveals not only institutional structure, but also emerging forms of exclusion tied to the withdrawal or reconfiguration of physical banking infrastructure. To define national banks and pillar banks in the context of contemporary Ireland, it is essential to acknowledge the unique service composition of the current Irish banking market and historical banking terms that may have been revised or abandoned yet still hold legacy significance in the contemporary context. *Table 6-1: Comparison of national, pillar, challenger, and neo- banks in Ireland* presents a comparison of banking terms used to describe current banking services in Ireland as understood by academia, the banking industry, media, and the public. These terms are often vaguely defined by the latter two groups, causing confusion and misunderstandings among the diverse groups of users. Based on insights extracted from expert interviews and references to existing literature, this section clarifies these terms using five characteristics: (a) symbolic cultural meaning, (b) ownership, (c) regulation, (d) banking function (commercial and retail), and (e) accessibility regarding service coverage.

Table 6-1: Comparison of pillar, national, challenger, and neo- banks in Ireland

Bank Type	Presentation	Ownership	Regulation	Banking Functions	Access	Examples
Pillar Bank	Any	Any	Regulated by CBI. May also hold other licences for other regions of operation.	Commercial and retail	In-person and digital, could be regional	Ulster Bank, Barclays
National Bank (a subset of pillar bank)	Represents Irish identity through name, use of cultural symbols, and partnerships with local merchants (e.g., BOI Aer Lingus credit card)	Partially, historically, or perceived as owned by the state, or established and owned as an Irish bank	Regulated by CBI	Some commercial business but not essential, primarily retail	In-person and digital, covers nationwide, including rural areas	Bank of Ireland, Allied Irish Banks, Permanent TSB (retail)
Challenger Bank	Any	Any	Any EU level banking licence; sometimes not fully licensed and relying on partnerships with licensed financial institutions	Retail	Some have physical branches but not necessary, could be regional, digital	An Post Money
Neobank (a subset of challenger bank)	Any	Likely owned by a FinTech company or equivalent	Any EU level banking licence	Retail, with emerging expansion to include some business accounts	Digital only	Revolut, N26

Pillar banks are the most common type of bank for everyday banking. They are likely to be long-established and have a stable customer base. However, the definition of pillar banks and national banks can change depending on the geographical and service context. For example, before its withdrawal, Ulster Bank operated as a pillar bank with full commercial and retail services in Ireland. It was also regulated by the CBI. However, given its parent company's ownership by NatWest and its initial establishment under British infrastructure in Northern Ireland, it is not recognised as a national bank.

> 'For example, you will call Bank of Ireland a national bank, but you won't call it like that for Ulster Bank. They are Scottish[26].' (C2, 2024)

There are also pillar banks operating with partial business in Ireland and cannot be considered as a pillar bank in the Irish context.

> 'Barclay's is in Ireland, but you don't see them much, because they are commercial [-only in Ireland]. […] A good number of companies, international mostly, use Barclay's for their business in Ireland. This is important [for regulators and other banks when evaluating their development strategies].' (M2, 2024)

With this clarification of pillar banks in Ireland, national banks are recognised as a subset of pillar banks. The term 'national bank' is not a regulatory designation but is widely used by banks, particularly in media presentations, and by the public. Historically, national bank has carried two meanings. In one sense, it can refer to regulatory bodies, such as central banks, a usage more common in countries where the central bank is not explicitly termed a 'central bank' but rather a bank of the nation (see *6.1.1*). In the other sense, it is used to describe banks that either operate nationwide and/or strongly represent the nation. Although both meanings appear in public reports and banking studies, the expert interviews indicate that in Ireland national banks align with the latter definition and are specially defined as a subset of pillar banks. Moreover, they must be 'native' to Ireland to distinguish them from international banks operating

[26] Ulster Bank was founded in Belfast, Northern Ireland. Its parent company, NatWest Bank, was founded in Edinburgh, Scotland. The expert was likely referring to the parent company being Scottish.

nationwide, such as Ulster Bank before its withdrawal in 2022. Thus, a national bank is a type of pillar bank—a long-established financial institution with a large customer base that provides both commercial and retail services and is typically funded or partially owned by the state.

6.1.3 Challenger Banks and Neobanks

Challenger banks were established as retail banks to serve specialised purposes and meet the increasing banking needs of people, such as housing and mortgage services or catering to regional customers in less-banked areas. The definition of a challenger bank sometimes overlaps with that of credit unions, depending on whether those credit unions are regulated and have a banking licence. In the Irish context, when Permanent TSB was initially founded as The Irish Temperance Permanent Benefit Building Society in 1884, it was recognised as a challenger bank with a focus on banking services related to housing. However, during its later development, the business expanded beyond a building society to encompass all retail banking purposes, including deposits, credit, and insurance. It also began offering commercial banking services, particularly for commercial mortgages. After acquiring the loan book of Ulster Bank following its withdrawal in 2022, Permanent TSB is now more widely recognised as both a pillar bank and a national bank in Ireland, rather than a challenger bank.

In contrast, the category of ‘challenger banks’ has expanded significantly in recent years and now encompasses institutions with very different organisational models, regulatory positions, and user assumptions. The expert interviews indicate that the term is often used flexibly or strategically rather than descriptively. Because of this, the section distinguishes between three forms of challenger banks based on how they operate in Ireland: (a) cooperative and regional retail banks (including credit-union–based services), (b) international banks operating through EU passporting or shared regulatory frameworks, and (c) born-digital, app-only banks commonly referred to as neobanks. Importantly, these are not merely market categories. Each implies different infrastructures of access, eligibility, and verification, which in turn shape which users are supported and which are excluded. Since digitalisation, the term challenger bank is sometimes described using terms such as ‘digital banks’, ‘people’s banks’, and ‘neobanks’ by some emerging banking research (Maurer, 2014; Schepinin and Bataev, 2019; Monis and Pai, 2023). The choice of terminology varies over time,

even when referring to a single bank, depending on advertising purposes and branding statements. For example, Monzo, a digital bank similar to Revolut IE but primarily operating in the UK, adjusts its terminology based on context. It refers to itself as a digital bank when emphasising instant digital services to the public. In contrast, it describes itself as a challenger bank at technology expos to highlight its achievements as an emerging alternative banking service compared to pillar banks (Anil, 2024). This example illustrates how these terms are loosely defined and highly context-dependent within the current banking industry and its presentation to the public. These terms cannot be used without clarification. This chapter argues that in contemporary Irish banking, 'challenger bank' is a legacy term encompassing three types of banks:

1. Small, regional retail banks that are often cooperatives[27], such as credit unions that gain a banking licence through partnerships and provide alternative banking options beyond credit services for their customers. This type of banks are also referred to as novelty banks in this thesis.
2. International banks that operate in Ireland under a valid banking licence issued by regulators other than the CBI, providing banking services to Irish individuals.
3. Digital banks that provide banking services in Ireland purely online, sometimes referred to as neobanks.

The term challenger bank will be used as an umbrella term for these three forms of banks. Since 2014 the launch of Starling Bank UK (SBUK), innovations have predominantly occurred within retail banking, making the term 'challenger bank' and 'retail bank' too broad to encompass the diverse and emerging types of banking services within this category and call for a new term of 'neobanks' to define new digital native and digital only banks.

> '[The innovative] banks are calling themselves names. Sometimes they are a new type [of bank], and sometimes they are for marketing purposes, like people

[27] Some small regional retail banks operate as cooperatives, often organised around a 'common bond', such as shared locality, employer, or professional background. These institutions offer community-based alternatives to commercial banking and may obtain banking licences through partnerships or federated structures.

> banks. Then those names may become official names [of that type of banks], as they are all very new, and we might not have a term [for them] yet.' (R2, 2024)

Neobank is an evolving term that emerged in the mid-2010s, particularly with the launch of Starling Bank UK (SBUK). It was initially used to signal a qualitative shift in how banking services were offered and experienced. As discussed in *Chapter 3*, this shift is not merely digitisation or a service digitalisation of converting existing banking processes into electronic form. Neobanks are platformed by design, which reorganise banking as a platform-based service ecosystem. Neobanks differentiate themselves not only through technical design but through the reconfiguration of regulatory and operational arrangements. They typically operate with high reliance on automated infrastructures, mobile interfaces, and cross-border licensing frameworks, and often without physical branches The term neobank signals two combined innovations. First, neobanks presume a centrality of app-based service delivery and data-driven user management. Second, neobanks initially reflect a more decentralised, 'state less', or disembedded imaginary of regulatory and organisational structure compared to pillar banks. This is why early neobanks, such as Starling Bank UK, N26, and Revolut, actively adopted the term in their own branding, presenting themselves not simply as 'digital banks' but as a new category of financial institution. In that sense, calling back to Chapter 5, the new categorisation of neobank reflects both the Transactional and Digital Imaginary. By promoting peer-to-peer transfers and real-time currency exchange, neobanks emphasise their advanced technology for everyday financial transactions. Meanwhile, they also build on understanding money as data that is algorithmically traceable, and payment as an informational flow rather than a socially embedded transaction, which would situate them within the digital imaginary. As a result, neobanks often display a convergence of functionality of pillar banks and FinTech innovations, becoming the platform hosting formal banking activities while still having crypto trading features. In sum, the category of neobank is not only a descriptive label but a site where broader socio-technical transformations of banking can be observed. Neobanks illustrate how platformisation reshapes financial services, how regulatory authority becomes distributed across national and European bodies, and how imaginaries of money shift from material to informational forms. Their evolution reflects both technological innovation and the reworking of the social imaginary of finance institutions and authorities. However, as *Chapter 5* demonstrated, the

operationalisation of the Transactional and Digital Imaginary in neobanks both assume stable documentation, digital proficiency, and reliable online access, which means that these services are more readily accessible to some user groups than others and therefore require consideration in relation to the digital divide and exclusion.

These observations raise questions that could not be answered by the walkthrough but could be addressed in the expert interviews. Experts were asked to describe the types of banks they work for. When faced with this question, some experts provided confident answers when their banking institution clearly fits into one category. For example:

> 'Definitely a pillar bank. We are the Bank of Ireland.' (M1, 2024)

For digital banks, the expert from N26 states:

> 'It is a pretty straight forward answer for this one. N26 is a digital bank. […] [A] neobank I would say. It's online. There is no national branding, and [it] operates worldwide.' (D3, 2024)

N26is registered in Germany and regulated by the European Central Bank (ECB) and the German Federal Financial Supervisory Authority (BaFin[28]), but when an expert was asked could it be considered a German bank, D3 argues:

> 'N26 is fully licensed [by German authorities]. You can check the website. […] But I wouldn't call it a German bank. The headquarter is in Germany but this doesn't make it a German bank for me. […] if I have to say [a location range], it is a European bank'. (D3, 2024)

Within the framework of EU economic policy, central banks from other EU member states can be legally recognised to operate in Ireland through regulatory equivalence and passporting arrangements. This allows digital banking services to function under a decentralised cross-national licensing model, while still operating within a formally

[28] BaFin is the official short form for the German Federal Financial Supervisory Authority. It is derived from the full German name Bundesanstalt für Finanzdienstleistungsaufsicht.

regulated framework. The sample of walkthroughs illustrates this type of decentralisation in banking services within the Irish market. For example, N26, while its Irish services are fully licensed and legal, does not hold a banking licence issued by the CBI and represents the neobank category within the challenger bank framework. However, not all sampled banks are as clearly defined as this, especially under the challenger bank type.

With the three types of challenger banks explained above, each type could be represented by an app in our sample, although with some differences. The first type could be represented by An Post Money. While it is neither regional, nor a credit union, and relies on an established national postal institution, it could be considered as a more cooperative form of banking compared to pillar banks in Ireland. Reacting to the question, 'What type of bank would you consider An Post Money to be? For example, is it a pillar bank or a neobank?', an expert from An Post Money suggests:

> 'Neither. […] We are not an exact pillar bank like the three main banks in Ireland, and I am not sure how you would use [the term of] neobank. It is not in our vocabulary as far as I would know. But if this is saying digital banking, then we have a pretty good digital service with the An Post Money app, but obviously we also have the post offices. We are not a digital bank. […] People can come to any post office and bank there. In fact, we are probably more accessible in real life than the pillar banks.' (D6, 2024)

An Post Money exemplifies a convergence of the postal industry and the banking industry, as well as adoption of digital technology and the banking sector. With a long history of offering 'travel money' exchange services through the post office, An Post launched An Post Money as its retail banking service in 2017, providing access to current accounts. The service later expanded to cover most individual banking needs, including credit cards, mortgages, and personal loans, by 2019.

> 'It makes sense [for An Post to have a banking service] as it has already been doing it. People come to the post office to exchange money, deposit money, collect cash if they are on unemployment [benefit]. There is money everywhere

> in the post office service and with all the banks closing down, we are the one gives people access [to cash][29].' (D6, 2024)

An Post offers a unique retail banking service tailored to the Irish banking market, particularly considering rural regions with limited access to bank branches. This qualifies An Post Money as a challenger bank. While it fits the 'small or regional' description typical of cooperative challenger bank types, An Post Money carries a social responsibility to ensure access to banking services in Ireland. This demonstrates its deep connection to communities and people, which is consistent with the perspective of the other experts.

> 'There is access to cash legislation being introduced this year, which puts the responsibilities on the three main banks, Bank of Ireland, AIB, and Permanent TSB, to ensure every community has reasonable access to banking services. […] In that sense, that we have that agreement with the post office. So, if there is a post office in the locality that has bank riding from their responsibilities [for providing access to cash service required by the Central Bank of Ireland].' (M1, 2024)

The second type of challenger bank is international banks, which may operate as pillar banks in some countries but provide a separate division of services in Ireland for retail banking. The distinction between the second and third types of challenger banks is increasingly blurred. In the digital era, some international banks may choose to operate as digital-only in specific regions, qualifying themselves in that particular locality as a neobank, though not for all their services. This is exemplified by Chase UK and Revolut IE. Chase UK is not officially open to the Irish market but remains accessible to Irish citizens, similar to SBUK (see *Section 5.1*). The Irish passport is accepted by Chase UK for account opening, but an Irish Residence Permit (IRP), held by legal non-citizen residents in Ireland, is not accepted. This situation is tied to the legacy infrastructure of British colonisation. While the Central Bank Reform Act 2010 removed British banking

[29] Access to cash is also legislated in Ireland, as part of the Retail Banking Review 2022, through the Access to Cash Bill. This act aims to establish a framework to ensure that any future evolution of the cash infrastructure, including ATM availability and public access to deposit, withdraw, and exchange cash and coins, is maintained (gov.ie, 2024)

influence at an institutional and infrastructural level, the long history of colonisation continues to exert legacy influence in various aspects of present-day Ireland. Chase UK, as its name suggests, focuses on the UK market but is fully accessible to Irish citizens, who are included as UK customers due to postcolonial legacy infrastructure linked to the UK.

> 'People can definitely use their Irish passport to open a Chase UK account, and we accept billing addresses in Ireland. It is a kind of particular type of bank for people [who] know the JPMorgan name. […] it certainly means something for anyone [who] works in finance and that attracts customers.' (D4. 2024)

This illustrates a form of exclusion for non-citizens living in Ireland and reflects the postcolonial influences embedded in banking services for Irish users. KYC templates continue to recognise the legacy framework whereby Irish passports are accepted as legal identification for opening bank accounts in the UK, while equivalent digital onboarding is not directly available in Ireland. This highlights a gap in inclusion. SBUK and Chase UK, as British banks, remain accessible to Irish citizens but are not regulated by Irish or EU authorities. As a result, users face uncertainty regarding their eligibility for these services, with access ultimately determined on a case by case basis rather than transparent regulatory guidance. When asking to allocate a bank type for Chase UK, D4 (2024) explains that it is difficult as it is location dependent.

> 'If I have to put a name to it then I'd say Chase UK is a neobank but that is just for Chase UK. For Chase in the US, from what you just explained, it is more or less like a pillar bank or maybe it is a challenger bank. I guess you can look it up and decide. […] All I can say is that it is nationwide, well recognised, have both personal[30] and commercial services[31], and has a decent network of physical branches in the US'.

[30] Personal meaning retail here. The expert is a developer who does not work directly with bank customers, so they are using personal banking referring to retail banking in their interview.
[31] Chase Connect is the division for commercial banking in the US. depending on how accessible Chase Connect is and the extent of commercial service they provide, Chase US could either be a pillar bank or a challenger bank. But the classification of Chase US is beyond the reach of this PhD thesis focusing on the Irish banking market.

D4 (2024) explains that Chase UK operates as a neobank in the UK and Ireland. This, however, is not the primary market for the entire Chase Bank group. Chase Bank is established and operates as a fully functional bank for both commercial and retail business in the US, with physical branches in many major cities. Chase UK could be considered a separate business, similar to an expansion into the broader international market. D4 (2024) also emphasises that even with the new service expansion of Chase UK, which is currently considered a neobank, it could fall into a different bank category depending on its organisational development strategy in the UK.

> 'In here maybe a neobank, as least for now, I guess. If I have to decide in between pillar or neo. This could be very different in a few years depending on how it goes.'

D4 (2024) explains that, as Chase UK is currently in the early stages of its business, operating as a digital bank for retail services is a more feasible approach. However, considering the more pillar bank-like services of Chase US, it is possible that Chase UK could fall into a different bank category depending on future developments. This also aligns with the findings from the walkthrough as, while each imaginary has its distinct features, they can be co-represented by the same banking apps and may overlap with each other. The classification of bank types is evolving with the development of the banking industry. Meanwhile, individual banks can cross banking categories over time and vary by countries and regions, as exemplified by the term 'challenger banks'.

Another example presenting a convergence within the challenger bank types and social imaginaries of payment design is Revolut. To clarify, depending on the region (within Europe)[32], the most used version is Revolut EU, which has operated with a banking licence from the Central Bank of Lithuania in European Union countries since 2020. It emerged after Brexit to cater to the EU market, leaving the original Revolut service to remain in the UK as Revolut GB. This is the oldest Revolut service. While Revolut GB applies for a banking licence every year, it only obtained one from the FCA in the UK in July 2024, where it continues to be regulated as an 'e-money institution'. The newest Revolut service is Revolut IE, launched in March 2023,

[32] Revolut was originally launched in the UK then grew to an international business. For the relevance of this PhD research, it focuses on the European part of service, excluding Revolut US and business in various Asian countries.

specifically for the Irish market and regulated by the Central Bank of Ireland. This means that in Ireland, although Revolut has been available since 2018 for Irish customers to register a bank account, it has evolved from Revolut GB to Revolut EU, and finally to Revolut IE. As a result there was a change in corresponding International Bank Account Numbers (IBAN) from GB (Great Britain) to LT (Lithuania), and now IE (Ireland). With reference to this path, this researcher asked experts to categorise what type of bank Revolut is in Ireland.

> 'Revolut is definitely a digital bank[33]. There is no doubt of that. And it will probably remain as a digital bank in the future. I don't see the need to suddenly open any physical branches anywhere for Revolut, especially now the bank is already established, and the service is growing just fine. […] So yes, it is a digital bank, always was intended as one and will remain as one in the future. So this, from what you describe, I can totally agree Revolut is a neobank.' (D3, 2024)

When questioned on the development of Revolut IE and the social meanings of the changes to IBAN and the symbolic representation of Irishness, D3 (2024) responds:

> 'I can see where you are coming from, and you are probably right. I think that is the decision of the marketing and branding teams rather than what we do here [as the developers and programmers for Revolut]. I understand you are seeing Revolut being more Irish with Revolut IE. This is correct, but it doesn't change the fact that Revolut, as you said, Revolut IE, is still a mobile app, so a digital bank. Honestly, this doesn't change how I categorise Revolut as a bank and how we work here.'

Meanwhile, the same question was answered differently by experts from different occupational backgrounds. One of the experts, R2, with public relations experience, agrees that the recent developments of Revolut reflect how they position themselves in Ireland.

[33] As the question was asking D3 to choose between pillar and neobanks. This 'digital bank' here could be a misspoken of neobank.

> ‘Revolut is changing and becoming more regulated in Ireland. For me, only when it became Revolut IE did it officially enter the Irish market. Before that, it was an international banking service available in Ireland. It was really popular regardless, but you couldn’t use it to pay bills. It is an app card, so you still needed an Irish bank account to get the money in and out. It was dependent.’ (R2, 2024)

R2 uses a particular term ‘app card,’ which is not commonly used by experts or within the banking industry in their marketing or media. This term, unique to the context of this interview, captures the early operations of Revolut in Ireland as a foreign-regulated bank advertised its superior app functionality compared to existing Irish banking apps provided by BOI and AIB to attract users. Prior to the launch of Revolut IE, the emphasis within Revolut GB and EU on streamlined, feature-rich app design appears to have influenced the development of the An Post Money app, which was positioned as a more efficient and user-friendly alternative to the BOI and AIB applications (see *Section 5.1*). R2 further explains that the shift in Revolut’s regulatory status directly altered how it functions in everyday financial life in Ireland. Before the establishment of Revolut IE, users typically linked their Revolut accounts to an existing Irish bank account in order to receive salaries, pay bills, or convert funds. The service operated as an additional account layered on top of a pillar bank account. Once Revolut became regulated by the Central Bank of Ireland and began issuing IE IBANs, it could be used as a primary bank account in its own right, enabling users to receive income and make payments without relying on an external Irish bank.

> And before that, as you mentioned, Revolut GB, it was not a bank because it was not regulated, so your money was not safe there. So how I see it, from the types we discussed, Revolut was not a bank, so there is no type, then a dependent bank, I guess a challenger bank because it wasn’t really challenging anything. It provided a new service that did not exist before. Then now, I see it as a challenger bank because it does pose a challenge to our native banks in Ireland. People get their IE IBAN, and they don’t need an Irish bank account anymore because they’ve already got one [with Revolut IE].’ (R2, 2024)

Another expert working in a pillar bank in Ireland also highlight that people in Ireland use Revolut as an additional account to their main bank account:

> ‘What we’re still finding is a huge amount of our customers would be what we would call multi-bank users. So, they have a Revolut account and their main bank account. So, there’s still a big reluctance there for people to get their salary paid in or have all of their savings with the likes of Revolut or any of the online digital banks. […] It’s generally kind of low level, or a low portion of that person’s overall banking structure or banking system. They’re using it to pay bills or pass money over and back between friends or something like that. Very quick and easy way to do that but we’re not seeing it in terms of people using it as their main banking facility.’ (M1, 2024)

The expert explains that the reason that Revolut and other neobanks are not considered at the same level as pillar banks, even with their increased level of regulation and inclusion of Irish cultural symbols, is the lack of physical access to the bank. M1 (2024) agrees that:

> ‘Because, still, we’re in a society or an environment where, if something goes wrong, somebody wants to be able to walk in the door and speak to somebody. So, we’re not seeing so any money leaving bank and to go to Revolut.’

Therefore, the findings from experts of diverse backgrounds regarding Revolut is that its categorisation as a neobank - and the neobank definition itself as a born-digital challenger bank- has not changed. As long as Revolut and other similar banks remain digital-only, this bank type remains consistent. However, the social meaning of a neobank is evolving, reflecting different social imaginaries of payment through the addition or removal of designs and functions. This evolution could be exemplified by the development of Revolut IE. The initial service of Revolut was clearly focused on quick transactions between users and instant currency exchange with real-time exchange rates. These services were not offered by pillar banks due to the more in-depth review processes required for higher levels of regulation. It was designed similarly to an e-wallet to manage payments from existing bank accounts, reflecting a transactional imaginary. However, as Revolut’s user base grew and its services

expanded, the company sought recognition as a bank rather than a supplementary payment platform. This re-categorisation required further regulation to obtain a banking licence.

In a way, this shift is contradictory to its initial purpose, as the simplified account opening procedure and real-time transactions relied on reduced review processes compared to pillar banks. To obtain a banking licence, Revolut needed to comply with necessary banking standards, which required longer account opening procedures and additional documentation. For example, existing users were required to provide tax information and verification of legal residency, in addition to standard identification documents. While these steps are completed through the mobile app, and therefore Revolut remains digital, they introduce new social meanings and functions for neobanks like Revolut, particularly regarding trust and responsibilities, leading to the institutionalisation of neobanks. This means that neobanks, with the increasing level of digitalisation in banking (Maurer, 2014; Tanda and Schena, 2019, Yacoubian, 2019), are now seeking recognition as part of the state banking institution, where they are fully licensed and no longer dependent on other banks to provide services. This also means that neobanks are moving in the direction of becoming a distinct banking type at the same level as pillar banks, rather than remaining an equivalent that offers partial services of the latter.

6.2 Human Cost and Exclusions by Design in Banking Apps

Section 6.1 clarified bank types in the digital context in Ireland. It addressed the changes occurring in the process of digitalisation by pillar banks or the choice of different types of challenger banks (e.g., Revolut IE and Chase UK) to become and remain purely digital. This section follows with a discussion on the strategy of digitalisation, investigating the reasons and progress to digitalise banking services from the expert perspective. As shown in *Chapters 2* and *3*, some literature argues that the closure of bank branches is primarily to reduce costs. This leads to the assumption that switching to digital or hybrid services could be motivated by cost concerns. To investigate this argument empirically, experts were asked to explain the reasons for and progress of the digitalisation of services based on their occupational roles and relevant professional experiences. A question that was asked in fourteen interviews was are digital services cheaper than traditional in-person services? This section addresses three

core findings from the expert interviews. Firstly, digital services are not always cheaper. The cost-effectiveness depends on an organisation's overall digital engagement strategy. For more traditional banking services, i.e., pillar banks, the initial setup for digital service often increases the overall operating cost. Secondly, digital options do not always replace non-digital options. Thirdly, there is a human cost in the digitalisation process (Couldry and Mejias, 2019). Crucially, these cost configurations also reallocate effort and risk to end-users, which in practice disadvantages users with low digital/financial literacy, assistive-technology needs, unstable device/data access, or limited English.

6.2.1 Digital Banking Beyond the Apps

While one aspect of this research focuses on the design of mobile banking apps to examine social inclusion and exclusion within digital banking services, it is important to acknowledge that digital services extend beyond mobile apps, particularly in the case of pillar banks. M3 draws on the context of the development of digital services for BOI, which has a history of over twenty years, as the BOI 365 online service was launched in 1997 and telephone banking even before that in 1996 (BOI, accessed 2025). The expert emphasised the history of developing digital services for BOI, particularly referencing the use of the 'actual phone' with 'actual people'. This prompted further questions. M3 was subsequently asked to elaborate on whether 'actual people' referred specifically to human agents, in contrast to the chatbots[34] now available in the BOI 365 web and mobile app services.

> 'What I was thinking was back in time, if you called Bank of Ireland and someone answered your call, they knew what to do. They work for the bank, and they would tell you what to do or do the thing you need for you, the same as if you were going to any bank, but you were on the phone. This is what we called phone banking then. But now, if you call Bank of Ireland, you listen and select with the buttons. They go on and on, then go to the call centre, and those people don't work in the Bank of Ireland. […] Like they don't work for Bank of Ireland

[34] At the time of this interview, BOI uses chatbots but not AI-supported chatbots. These chatbots are similar to the early pedagogical agents (as discussed in 3.4).

> in the way we did. They work for the call centre, and they tell you to go on the banks or the apps like you said. They don't fix [the problem] for you.'

This reflects the findings from the walkthrough discussed in *Section 5.3*, which highlights how current mobile banking apps transfer labour and responsibilities onto users by designing the user interface (UI) to expect users to self-navigate before being guided by a branch or a call centre worker. M3 also highlights that for pillar banks, the digitalisation process involves more than just the development and maintenance of mobile app services. Unlike neobanks that rely almost solely on the mobile app, pillar banks and other non-digital native banks develop multiple-channel digital services to coexist with their in-person services. Drawing on the framework of the Social Construction of Technology (SCOT) (Bijker, Hughes and Pinch, 2012), the introduction of digital technologies into banking is understood as historically contingent and shaped by the negotiation of meanings among relevant social groups. Rather than being the outcome of technological inevitability, digitalisation in banking reflects the particular institutional conditions, regulatory arrangements, and everyday practices that characterise specific periods and contexts. For example, when the initial digitalisation began with BOI, the telephone was considered a digital technology. As a result, for pillar banks and other banking services with similar establishments, they may have a longer history of digitalisation leading to retained legacy systems that cost more to digitalise in the current app service. Therefore, the development of new app services would be considered an additional cost added onto their regular budget rather than a cheaper option.

> '[The] digital [option] is not cheaper. In short, this is the answer. Maybe in the long run, someday, [the cost] will balance out, but at present, this is an additional budget cost compared to just running things as they are. We are looking into digitising An Post Money. This means developing the app, possibly hiring more people, and there are advertisements. We have the post office [to advertise the new digital service], but even that costs additional money. […] At the same time, we are not reducing any costs anywhere. The post office is running, and now we also have to train everyone who works on the till on the An Post Money apps because they can't turn down any customers. They need to

help the customer when needed. That is also money. You can see there is a lot [of money being spent].' (D6, 2024)

The development of digital options is considered an additional cost for banks with established services. This includes the cost of developing digital technology and the associated human costs, which were overlooked in the walkthroughs discussed in Chapter 5. The walkthroughs allow the researcher to examine the apps from a user perspective and record any encountered issues, barriers, and exclusions. However, a limitation of the walkthroughs is that the everyday use of the apps is confined to the app interface itself, whereas not all sampled apps are designed to operate exclusively in this manner. For pillar banks, the digital app service is only one part of the overall service portfolio. It is not designed to function solely or independently. While the apps include features to operate and fulfil customer needs, they also allow access to external channels beyond the apps when the app cannot perform as required. This includes scenarios where the designed app features are limited, such as services that cannot currently be accomplished solely through the app, like applying for a mortgage. It also covers instances where users lack the necessary skills to navigate the app successfully. For the latter, customers can physically visit a bank to use the app in-branch with the assistance of a staff member. See *Image 6-1*.

Image 6-1: Digital Banking Area in BOI Branch, Grand Canal Branch

(BOI Press Image, accessed 2025)

> ‘You are saying hybrid branch like it is a negative thing, and it is not just you, a lot of customers do. They hear the word hybrid, and they are scared of it, thinking there will be all machines, and they don’t want to come in anymore. But the reality is that they really just don’t know what we do here. Hybrid branch in the Bank of Ireland means a place [where] you can still have the normal banking experience with your account managers, and it is a place you can come in to do your digital banking as well. We have the space. You can do it on the apps, and you can use the phones [to call on the hotline] as well. We’ve lost access to something in the digital service, but this doesn’t mean we cannot help the customer. They should still come in for help, and we can be on the phone for the customer to talk with the hotline operatives even.’ (M3, 2024)

Another expert from BOI further emphasises the designated digital banking space and the role of branch staff in assisting with digital services in the branch, highlighting the educational aspect for the branch staff members.

> ‘I think one of the things that we try and encourage our own staff to do is be very familiar with using the app themselves. So, if a customer comes in looking to complete a particular task that can be done on the app, the staff would be familiar by using the app themselves, or through training that we provide, so they can help with that, and that’s just a familiarity piece. So, the next time that customer needs to complete the same task, they know how to do it themselves. There’s a big education piece there for people who are less familiar with using the app, or less familiar with the variety of services that are available on the app. […] You’re teaching them how to work with the app, and you are hoping to build their knowledge on how to use the app in the future, so they would have fewer issues.’ (M1, 2024)

While hybrid spaces mitigate some of the barriers introduced by digitalisation, their benefits are unevenly distributed. Where in-person services are limited, scheduled, or geographically distant, users with reduced mobility, those living in rural areas, or those with inflexible work hours may still be excluded. In these cases, the shift toward hybrid provision does not remove barriers but redistributes them, concentrating access among those already able to navigate digital and spatial requirements. Corresponding to D6’s statement above on training branch workers to use the An Post Money app, M1 confirmed that similar requirements also apply to Bank of Ireland. This indicates that both pillar banks and the post office, which acts as an alternative banking service when access to banks is limited, view their in-person and digital services as integrated rather than competing or replacing each other. This aligns with the conceptualisation in *Chapters 2* and *3* that banking is a critical social service. As argued in *Chapter 5*, digital banking apps often responsibilise users by requiring them to navigate identity verification, troubleshooting, and consent processes independently. In contrast, the availability of in-person assistance in hybrid branches redistributes part of this responsibility back to the institution. It does not remove the tasks themselves, but it changes who is expected to perform and interpret them. However, the interviews also indicate a gap in users’ awareness of these support channels. Even when in-person assistance is available, users may not know how to access it or may assume that services are exclusively app-based. This disconnect means that support exists in principle but is not always available in practice. This issue will be examined further in *Phase 3 (User)* through focus groups and interviews and discussed in *Chapter 7*.

6.2.2 App Natives

Building on the notion of 'digital natives' (Prensky, 2004; Bennett, Maton, and Kervin, 2008), which describes individuals who have grown up in the information age and are therefore native to the use of digital technology (addressed in *Chapter 3*), this subsection proposes to delineate a concept of 'app natives' as an emerging idea within the broader digital native framework. As suggested in *Subsection 6.2.1*, digital banking services include options that are digital but not necessarily enabled by mobile banking apps. This reflects the evolution of digital technology prior to the advent of apps, such as webpages and telecommunications. In contrast, neobanks, which emerged during the age of smartphones, have been developed as natively digital institutions with a core focus on mobile apps. Some neobanks may also offer additional web-based services. However, these are often launched after the mobile apps as supplementary support channels. They sometimes feature restricted access, limited services, or requirements for two-factor authentication through the app, highlighting the dependency of web-based solutions on their app counterparts. The Revolut web app[35], which launched in 2020 following the international success of the Revolut mobile app, exemplifies this approach. This differs from the path taken by pillar banks and post office money services, which experienced the transition to digital by adding online services to their existing in-person services through physical branches. For instance, BOI launched its online banking service BO1 365 service through early web portals in 1997[36] before introducing the current BOI mobile app. The two distinct paths indicate different design strategies and reflect varying imaginaries of digital technology usage in banking. While neobank strategies, as examined through the walkthrough method and discussed within the appified ecosystem, highlight their initial launch and sustained presence as exclusively digital services via mobile apps, this subsection proposes defining neobanks as app-native services.

[35] also known as the Revolut Desktop.

[36] The exact launch dates of the BOI 365 website and the original BOI mobile app are not specified in any available online sources. However, the current BOI mobile app is a newer version that replaced the older mobile and tablet apps in 2021, which was the app version used for the walkthrough. This updated version introduced more advanced security features and an expanded range of services, making it more similar to neobank apps sampled for the walkthrough and allowing better comparison among the apps.

Unlike the steps taken to digitalise by BOI, AIB, and An Post Money, the concept of a 'digitalisation process' does not apply to app-native services like N26 and Revolut. These services are defined by their inception through mobile apps and their continued operation exclusively within digital environments. Consequently, when experts from neobanks respond to questions regarding whether digital options are cheaper, they often compare their services to the non-digital offerings of other organisations, without considering legacy costs or human costs.

> 'I am not sure if I am the right person to answer this question. As far as I am concerned, the digital option is the only option, and I am working on this option. So, as I just told you, my job is primarily on cybersecurity, so this is all digital, like cyber, you know. So maybe, I guess you want to ask me if I think Revolut is providing this kind of service because we can save money rather than opening some banks in London. The answer is no. I am not saying it is cheaper or expensive, I actually don't know how much it costs to run a bank because I am not running a bank.' (D3, 2024)

For D3, Revolut is perceived more as a technology company than a traditional bank, despite its provision of banking services in the UK and the EU. D3 emphasises the foundational role of the underlying technology that supports the Revolut app and argues that technology may not necessarily be developed for a specific purpose, such as banking. Instead, the Revolut banking app could be interpreted as the outcome of the monetisation of an existing digital technology.

> 'Revolut is not running a bank either, not exactly. You asked about my background earlier, and like I said, really it was in computer science, so what I see is that there is a piece of technology, for algorithm, the math, the codes, and then someone saw it and thought it works for banking, so they make a bank centred on this technology, this programme, but really it could be anything. So, what I see Revolut as is a technology company with the technology. And it wants to make money. Banking makes money, so Revolut then developed a banking service off this technology. So, there is not really a digital cost. […] In your words, maybe you can call it a banking cost [for Revolut].' (D3, 2024)

Similar arguments were made by other experts from neobanks with similar backgrounds as D3. D5 highlights how differing organisational positions can significantly influence perspectives on digital costs. While working at a neobank where all service costs are related to digital operations, D5 compares the digital services of N26 with those of pillar banks. D5 argued that N26's decision to remain exclusively digital was not driven by cost-saving motives but by a distinct goal and vision for providing services that are not constrained by operating times or physical locations. Additionally, D5 suggests that while it is challenging to compare the costs of digital and offline services directly, the cost of digital technology remains high due to the constant advancements and the pursuit of innovation inherent in its nature.

> 'Yes, like you said, N26 has always been clear in advertising as a bank, and it is a bank. I am not saying it is not, but it is also very clear for us to see, like with all the regulations and advertisements, from what we do here every day, it is not the same [as pillar banks]. The goal is very clear that we are making a technologically advanced solution for our users to bank with. From the start of N26, we never wanted to be the same as those banks, so no branches, it is always digital. We do spend a lot on maintenance and developing new technology. We probably spend more than what those banks do to digitalise, just on making our app as it is, because you know, we update our app all the time, and it is really not on the same level as your regular banking apps[37]. Way better.' (D5, 2024)

The interviewed expert also addressed that, for pillar banks, there is an initial setup cost involved in digitisation efforts. This includes developing new banking apps, implementing video verification for account opening, and enabling digitally signed banking documents. For pillar banks undergoing digitalisation, these are considerable'digital costs' incurred during the conversion phase, followed by continuous costs to maintain digital services, including the older version for a period of time while financing the newly developed services. These costs align with what D5 identified as digital costs for neobanks, although for pillar banks, there are additional human costs associated with training and retraining staff members, and providing

[37] Refers to pillar bank apps.

educational channels to help customers adapt to digital services. This will be further discussed in *Chapter 7* with findings from both experts and users/customers.

The experts interviewed emphasised that for pillar banks, there is a significant initial cost associated with digitalisation. This includes developing new app infrastructures, integrating video-based identity verification, and enabling digitally signed banking documentation. These represent substantial 'digital costs' during the conversion phase, which are followed by ongoing maintenance costs to support both new digital services and legacy systems in parallel during the transition period. In addition to these technical expenses, experts highlighted the human costs borne by traditional banks: staff must be trained and retrained for hybrid service environments, and new educational channels must be provided to help customers adapt to digital interfaces (Couldry and Mejias, 2019). As will be discussed in *Chapter 7*, the availability and accessibility of these forms of support are uneven, which shapes who is able to transition smoothly and who encounters barriers.

These observations indicate that digital costs are experienced differently by neobanks and traditional financial institutions. Neobanks are digitally native; their workflows, staff training, and customer service are oriented around app-based interactions from the outset. In contrast, pillar banks must retrofit digital systems onto pre-existing organisational and infrastructural arrangements. As D4 explained, digital channels are 'cheaper' only when introduced as extensions of existing service models rather than complete replacements. In this view, digitalisation reduces costs when it supplements in-person and call-centre services, but becomes expensive when it requires the full reconstruction of legacy infrastructures. These differing cost structures also have social implications: when digitalisation is framed as cost-saving, banks may be incentivised to reduce in-person channels, potentially excluding users who rely on hybrid or branch-based support. This establishes a direct link to the broader theme of exclusion through platformisation, which is developed further in *Sections 6.3*.

> 'That is an interesting question. From my perspective, it is probably cheaper for Chase UK, and that might be one of the reasons why we did not establish physical branches here. However, it is important to note that this might not apply to other banks. […] Chase already has everything it needs as a well-established bank, so launching Chase UK was more about opening a new part of the business rather than building everything from scratch. That probably makes

> digital operations more cost-effective for us. For example, we still have a large office building in London, but without the costs of maintaining physical branches across the country, we save on things like rent, utilities, and staffing. That said, not all banks can adopt this model. Some might depend heavily on physical branches due to their customer base or the way they are structured in certain countries. It is not as simple as saying digital options are always cheaper. For Chase UK, though, the neobank approach likely helps reduce operational costs compared to what it would cost to set up and run branches here.' (D4, 2024)

In short, app-native design presumes recent smartphones, sufficient data allowances, secure private spaces for selfies and videos requested as a part of Know Your Customer verification, and biometric capability. These assumptions could by design marginalise and even exclude low-income, shared-device, and privacy-constrained households, as well as some disabled users whose assistive technologies are not fully supported by banking apps. These requirements also have implications for migrants and other non-citizen residents. In Ireland, many legally residing migrants rely on identification documents such as the Irish Residence Permit (IRP), which are not always recognised or consistently processed by automated verification systems. When app-based onboarding depends on biometric matching and automated document parsing, these users are more likely to encounter verification failures, account freezes, or prolonged review periods. As a result, the digitalisation and platformisation of banking can reproduce earlier forms of exclusion tied to citizenship status, immigration regulation, and the uneven legibility of documents within automated infrastructures. This reflects a broader pattern in which digital access is not merely a technical issue but one shaped by regulatory histories, platform design, and assumptions about who the 'ideal user' (see more in *Chapter 7*) is expected to be.

6.3 Convergence and Regulation of Platformised Banking

The previous section addressed existing literature on the cost of digitalisation and platformisation with empirical views on the cost of developing, implementing, and maintaining digital services by bank experts. According to the experts quoted above, digital options are not cheaper. This leads to further questions on the reasons to digitalise, especially for traditional banks. In *Section 6.1*, M1 believed neobanks, in this case Revolut, are not the same banking service as pillar banks and do not pose any competition. M1 emphasised the connection between pillar banks and local communities twenty years ago, highlighting that decisions were made at a local level. However, this is no longer permitted in the current banking services for either pillar banks or neobanks.

> 'Back when I first joined the bank, everybody in the local town would know who the bank manager is. Decisions might have been made locally. If a customer was looking for, say, a loan or mortgage or something like that, the local bank manager would make that decision. They would know the individual at the local level. And I think the way society has changed over the last number of years, population has increased dramatically, the area to that say bank staff have are now greater.' (M1, 2024)

The decision-making process has changed, removing any personal or community connections in pillar banks for both in-person and digital services. This shift is regulated by law and organisational policy.

> 'Now and again, because of legislation, we can't let personal relationships or personal knowledge impact any decisions that the bank might make. So, there's a thing now called arm's length lending. So, if a customer is coming into a bank, if I happen to know them because I work or live or operate in a local community—that can't necessarily influence the decision. […] So, we would present the application, and somebody somewhere else actually makes a decision on it.' (M1, 2024)

M1 suggests two significant changes in contemporary banking over the past twenty years: (a) population growth and its impact on banking relationships. The growth in population has added pressure on local banks. The relationship between bank staff, including managers and branch workers, and customers has changed. Close, personal knowledge of customers, which was once possible, has become impractical due to the increasing population in the area and the mobility of the population. And (b) changes in the regulatory framework. The regulatory framework has evolved, eliminating community-focused care and local decision-making based on intimate customer knowledge. Instead, decisions must now be made elsewhere, detached from the locality or personal relationships, even when these relationships do not influence the decision-making process. While these changes do not directly interact with digital technology, they incentivise the development of digital services for pillar banks. Digital services—initially introduced via hotlines, later expanded to websites, and now predominantly through mobile apps—facilitate centralised management and standardised training for staff. This approach removes personal connections and community ties between banking staff and customers. The concept of locality has effectively disappeared in digital banking services, particularly with the current mobile banking apps. Bank customers once had to choose a branch based on locality and primarily visit their chosen branch for banking needs. This is no longer required by BOI. Services are now provided by staff remotely, often at offsite locations inaccessible to customers. This setup also alleviates the pressures of population growth and increased mobility, as customers could sign up for and use their banking services from anywhere. Centralised service providers enable efficient service dispatching and coordination, regardless of geographic location.

Standardisation and ‘arm’s length’ policy may reduce human bias associated with staff discretion, but they also remove forms of local knowledge and flexibility that previously helped staff accommodate non-standard cases. As a result, users whose circumstances fall outside standard templates, for example, migrants with alternative documentation, workers with irregular income patterns, or speakers of languages other than English, experience longer verification delays, repeated account suspensions, or are unable to complete onboarding at all. What was once resolved through conversation at the branch now becomes a technical ‘error’ that the user must solve alone, often without knowing where the breakdown occurred or how to prove their eligibility. These two changes may also explain the emerging convergence in design identified through

the walkthrough. As the regulatory framework and the pressure of population growth have necessitated centralised decision-making and standardised services, both pillar banks and neobanks are adapting their app designs to accommodate. The walkthrough identified a convergence in the designs and features of banking apps developed by post offices, neobanks, and pillar banks. Initially, these apps reflected distinct design features: neobanks emphasised transactional imaginary, focusing on user-to-user transactions and instant responses, resembling a media and communication-led digital technology. In contrast, pillar banks and post offices utilised UI designs that mirrored familiar offline banking services, such as pin pages and representations of current and savings accounts, reflecting an institutional imaginary. Over time, these designs evolved, showing a trend of convergence. Neobanks began incorporating more institutionalised banking symbols and language, such as separating chat functions from the payment UI page, aligning them with options for transferring funds to other bank accounts. Meanwhile, pillar banks adopted biometric features of mobile phones, such as fingerprint and facial recognition for login, alongside traditional pin-based methods. They also introduced features like saved payees, which resemble neobanks' chat-based UI designs, facilitating quicker recurring payments. This evolution demonstrates a blending of the initially distinct approaches, resulting in more unified user experiences across different types of banking apps. As these design logics converge, the boundaries between the Institutional and Transactional Imaginaries become less distinctive at the interface level: pillar banks increasingly present themselves as seamless, personalised, and relational, while neobanks incorporate institutional signals of security, stability, and compliance. In practice, users encounter hybrid imaginaries rather than neatly separated ones, where trust is simultaneously communicated through institutional authority and everyday interpersonal ease.

> 'I would not use the word competition because [...] that is not what is happening here, if you really think about it. Neobanks do not think they will ever become pillar banks, and pillar banks are not thinking they can make a better, more digital app than those [neobanks], and suddenly there is only one [type of] bank left. The market has changed, and they exist for different reasons. You might think they are copying each other and trying to top up, but the reality is that might be the result, but it happened for different reasons. Neobanks, like you said, are becoming more like banks because they are now required to operate as

a bank, or no one will use them anymore. So, for protecting their business, they need to be insured and licenced. That grants certain changes.' (R2, 2024)

For pillar banks, while no expert explicitly explained their recent design shifts, insights from *Subsection 6.2.1* suggest that the digital services of pillar banks were initially designed during a period dominated by different technological standards. These designs, which may have been advanced at the time, have since evolved into legacy systems that appear outdated compared to the app-native services offered by neobanks. This observation calls for further exploration and empirical work with banking experts to confirm and deepen our understanding. However, as this finding emerged from *Phase 2 (Industry)* after the expert phase fieldwork was completed, it remains an unverified assumption. As a result, this represents a limitation of this PhD research and an area for future investigation. Design convergence around centralised flows, biometric gates, and chatbot triage led to design changes for an 'ideal user' (discussed more in *Chapter 7*). Those who deviate from the 'ideal user' incur higher search, time, and error costs, and in some cases loose access altogether.

Conclusion

To conclude, this chapter has provided a comprehensive exploration of expert perspectives, including regulators, developers, management staff, and branch workers, addressing the questions raised in *Chapter 5*. The findings clarify how banks themselves understand the ongoing digitalisation of services, and how these changes reshape bank categories, service models, and customer expectations. In doing so, this chapter directly contributes to research question 3, by identifying current strategies aimed at improving access and inclusion, such as hybrid branches, call-centre support for using banking apps, and simplified onboarding flows, while also highlighting the limits of these measures. The chapter also answers research question 2, by showing that exclusion is not evenly distributed but varies by user group. Experts consistently acknowledged that legally resident non-citizens, individuals with non-standard identification, older adults, people with disabilities, low-income users, and those with limited digital or financial literacy are more likely to experience difficulties when accessing or maintaining digital banking services, while stating there are no dedicated teams helping each of the groups but viewing them as a larger collective whole of

people who need more help These challenges are not only technical but tied to structural legacies, regulatory interpretations, and internal risk management strategies, which can constrain the flexibility needed to accommodate diverse users. The chapter also strengthens the conceptual groundwork for answering research question 1, by demonstrating that the social imaginaries identified in *Chapter 5* are not simply artefacts of interface design but actively shape operational decisions, regulatory compliance practices, and institutional self-presentation. The movement of neobanks toward institutional recognition and the adaptation of pillar banks toward more relational, app-mediated service environments illustrate how imaginaries are negotiated within and across banking sectors.

In short, the expert interviews lead the researcher to reclassify bank types to suit the unique socio-economic, cultural, and political context of Ireland. It recognises national banks as a subset of pillar banks, distinct from their meaning in the UK. It also acknowledges the increasing use of digital technology, which has contributed to the rise of challenger banks, with neobanks becoming a significant subset of challenger banks. This illustrates how the integration of digital technology, namely mobile banking apps, is driving a convergence in service design. While digital services sometimes promise greater efficiency and accessibility and are presented as a solution to current barriers, they also incur significant technological and human costs. Their implementation is deeply influenced by legacy systems and evolving regulatory frameworks. This chapter is grounded in these expert accounts to answer our core research question on how the design of banking apps reconfigures inclusion/exclusion in everyday payment, pinpointing the concrete design and regulatory mechanisms through which exclusions are produced.

The findings demonstrate that current banking terminologies require clarification to bridge the gap between academic definitions, industry discourse and public understanding (see *Chapter 7*). The expert interviews presented in Chapter 6 contribute critical insights into how digitalisation and platformisation are redefining the banking sector in Ireland. While these findings provide a robust foundation for understanding contemporary banking, they also point to areas for future research, particularly in balancing digital innovation with customer accessibility and trust. These themes will be further explored and corroborated with empirical data from users of these banking apps in *Chapter 7.*

Chapter 7 Reconceptualising Users and Understanding Barriers to Use in Contemporary Banking

Introduction

This chapter discusses empirical findings from *Phase 3 (User)* alongside existing findings from the previous two phases. It builds on *Chapter 5* which argues that the current design of mobile banking apps shifts task, responsibility and risk from banking institutions to their users, raising questions about the role and agency of users in digital banking. It further examines how different users interact with banking services in Ireland. *Chapter 7* draws on quotations from both *Phase 2* expert interviews (also discussed in *Chapter 6*) and *Phase 3* user interviews. While it was not feasible during the fieldwork to host direct conversations between service providers (i.e., the experts) and users, this chapter bridges insights from both parties to explore the 'ideal user' and those excluded due to non-ideal or less standardised statuses. It addresses and redefines 'user' in the context of contemporary banking in Ireland. While 'users' is often associated with individuals who engage with digital services, such as mobile apps, this chapter proposes to extend the term to include a broader range of ways in which people access and use banking services. It argues that in contemporary banking, where in-person services—if available—are deeply intertwined with online services, there is no clear distinction between app users and bank customers. Instead, in the first section, this chapter conceptualises 'users' as 'people who use banking services', a definition that is elaborated upon with interpretations from existing literature.

This chapter draws on empirical findings from both experts and users to explore how scholarly work, the banking industry, and users themselves conceptualise 'users.' The second section reveals the prioritisation of high-net-worth users by service providers, while all other users are treated as a single broad category, leaving them to self-navigate available services and additional assistance. The third section illustrates how users perceive their own roles in banking services and what barriers exist for different user groups. This includes the self-categorisation of users and the corresponding experiences—both positive and negative—of accessing and using banking services. Finally, the last section untangles the process through which emerging

barriers lead to persistent and new forms of social exclusion, offering insights that could inform more socially inclusive banking design in the future.

7.1 Users of Banking Services: Platforms and User Agency

The definition of 'user' evolves with the changing medium, often influenced by the technology used at the time. In this thesis, users are understood as people who engage with banking services across different channels, including mobile apps, web banking, phone support, and in-branch interactions (see *Chapter 5*). This follows the co-construction approach outlined in *Chapter 3*, in which user practices are shaped through interactions with socio-technical arrangements (Oudshoorn and Pinch, 2005; Hyysalo, Jensen and Oudshoorn, 2016). Drawing on the social construction of technology (SCOT) theories, user agency is understood as relational and co-constructed between humans and technologies (Hyysalo, Jensen & Oudshoorn, 2016; Pickering, 2010; Wajcman, 2020). In this sense, agency emerges through the interaction of people and banking apps embedded in long-established financial infrastructures, calling for a reconstitution of the term 'users' in contemporary Irish banking. This framing aligns with the walkthrough findings in Chapter 5, which illustrate how app design redistributes labour and responsibility, shaping user roles in ways that go beyond traditional banking customer relationships.

This chapter defines users as people who access banking services across multiple channels (in-app, web, phone, branch). This aligns with the social imaginaries lens identified in *Chapter 5*. Both app and branch environments are designed with underlying assumptions about who the user is, what they know, and what they are able to do, conceptualised here as the 'ideal' user. These assumptions may not be consciously articulated by service providers—including regulators, developers, and managers—but they are embedded in design choices that presume an ideal user with stable legal identification, a regular income, confidence using digital technologies, and familiarity with everyday financial practices. In practice, people may align with, adapt to, or work around these expectations in order to access banking services. The focus of this chapter is therefore on how platformised banking shifts tasks and responsibilities onto users by shaping services around this assumed ideal user. This process of responsibilisation is uneven, meaning that some groups are better positioned to meet the expectations embedded in banking systems than others. This definition aligns with the

walkthrough findings, which show how interaction with banking app functions requires users to take on tasks that were previously done in person and by bank staff, or in collaboration with bank staff. As discussed in *Section 5.3*, the shift from traditional, adviser-supported banking in branches to app-based self-service transfers labour, risk, and responsibility onto users. This shift is not uniform; it is experienced differently depending on how closely individuals align with the assumed ideal user profile.

During interviews, experts were asked to explain the differences in experience between in-person banking as a bank customer and app-based banking as a user. However, responses from the experts indicate that, from the service provider's perspective, they do not distinguish between the roles of customer and user and apply the terms interchangeably. According to M1 (2024) from a pillar bank:

> 'I am not sure if I understand [correctly] what you are asking here. The customers [of the bank] use the app, so they really are the same [as customers and app users] […] you can't become a user of the app without being a customer [of the bank].'

Similar responses were given by experts from neobanks. D4 (2024) states:

> 'From what you told me there, you think traditional banks treat people as their "customers" and we don't. I think this depends on the context. For example, if we want to say that Revolut has, say, one million customers in Ireland, it's customers because this is how things are. I actually don't know how many customers they have, but just as an example, you see. […] When I talk about them [referring to customer/user], I haven't really thought about this. Off the top of my head, I think users, I think. That is because of what I do [as a backend developer].'

As D4 suggested, he refers to people in this context as 'users' because his role is in the technical development side of the service and does not involve direct customer interaction. The organisation he works for is classified as a neobank in the UK and Ireland (see *Section 6.1*), and this organisational context and his occupational role shape how he conceptualises the people who use its services. This positionality causes him to view people using the service provided by his organisation as 'users' owing to

the lack of in-person connection and his professional role as a developer. This differs from experts from various occupational roles and bank categories. For example, in pillar banks, both M1 and M2 use the term ‘customers’ and sometimes ‘clients’. The term ‘user’ is mentioned less in that context when the researcher questions them about user engagement with the apps. The branch workers (BW1 and BW2) use a broader term, ‘people’, rather than any terminology of ‘customer’, ‘user’ or ‘client’, when discussing their work experience.

D3 (2024) provides similar response to the question:

> ‘You’ve mentioned that for neobanks [from your walkthroughs], registration comes in two parts, for the app and for the bank. So, by registering for Revolut, you open an account with Revolut, which makes you a user and a customer simultaneously. […] We don’t provide other ways [of banking] outside the apps, maybe the web, but that is technically a web app. […] So I think you are talking about the same thing [with] bank customers and app users. You can’t be one without the other.’

These responses suggest that, from a user perspective, the walkthrough compares the difference between app-based banking and in-person banking, identifying two distinct roles: banking customers and app users. While both terms are frequently used in the banking industry—including pillar banks, neobanks, and other undefined challenger banks (see *Section 6.1*)—they need to be clarified and redefined in the context of digital banking. While interaction between banks and customers has always existed, the shift to app-based banking reorganises this interaction. Tasks that were previously carried out by bank staff—such as identity verification, payment authorisation, and troubleshooting—are now completed by users themselves through digital interfaces. This redistribution of work alters what it means to be a user of banking services today.

Reflecting on van Dijck’s (2009) definition of users as ‘active internet contributors’, this thesis argues that, in the case of mobile banking apps, user activity is constrained to interactions between the user, the platform, and the service provider, rather than extending directly to other users. This is similar to how everyday use serves as a stage where a user engages with the app during their routine use after the initial registration is modified as ‘Step 5 Customer Support’ for the modified walkthrough (see

Subsection 4.1.1). For example, personalisation features in mobile banking apps are primarily available and visible to users themselves. While social functions exist—such as instant messaging—they are integrated with payment functions, including requesting and sending money or splitting a group bill. This means that only limited user information is visible to other users, even within personal networks. Moreover, as discussed in *Subsection 4.1.2*, mobile banking apps do not allow users to establish a separate persona within the app. Instead, they require the use of the user's real-world legal identity. As a result, 'mobile banking app user' is not a parallel concept to 'bank customer identity' but rather an extension of it. This does not contradict the dynamic shift discussed in *Section* 5.3, where it is argued that traditional bank customers now need to adopt a new layer of identities when using the mobile apps as users, which brings a new way of engagement different from the established social norms of banking in person. Instead, it argues that the adoption of the 'app user' role can be conceptualised as an expansion of the broader concept of 'user' in this context—from user of a mobile banking app to user of a banking service, encompassing both online and offline banking.

This chapter draws on the co-construction perspective outlined by Oudshoorn and Pinch (2005), which highlights how users and technologies are mutually shaped through use. In this context, users are not understood as redesigning or directly influencing banking platforms. Instead, they negotiate the constraints and affordances embedded in banking systems, developing ways of using, adapting to, or working around the expectations built into app and branch environments. These practices reveal how responsibility for accessing banking services is unevenly distributed across different users. This perspective entails viewing different banking methods and payment interfaces as socio-technical artefacts, while recognising that the people who use these services may be referred to differently over time (Hyysalo, Jensen and Oudshoorn, 2016). In this sense, clients or customers remain users of banking services regardless of the channel through which they engage. Calling back to the three social imaginaries of payment and banking (see *Section 5.1*), users draw on their own experiences, resources, and knowledge to interpret and make sense of the services they encounter. At the same time, platform-based banking practices also construct users through data collection, identity verification processes, and the continuous monitoring of transactions and interactions. These systems classify, profile, and assess users in ways that reinforce the ideal user assumptions embedded in design. Accordingly, users interpret and adapt

banking services, but the platforms also classify and shape users through data collection and verification processes. This process does not necessarily take place within the traditional banking setting but occurs through collective thought formation, that is, social imaginaries. These social imaginaries, in response to market demands, influence the design of banking services. .

In what follows we examine the barriers encountered by the users interviewed in *Phase 3* and how they navigate or work around them in everyday practice. The user interviews involved eleven participants who had experienced difficulties or disruptions when accessing or using banking services. These participants came from a range of financial, legal, and demographic circumstances, including older adults, recent migrants, individuals with temporary or uncertain residence status, and people with irregular or non-salaried income (as shown in *Table 4-8* in *Chapter 4*). These users develop practical and sometimes vernacular adjustments that allow them to manage or bypass difficulties. For example, some participants over the age of 65 rely on family members to operate app-based services on their behalf, while international users from non-EU countries reported the need to provide repeated documentation or to visit branches in person in order to resolve identity verification issues (See *Table 7-1* below).

Table 7-1: User in non-ideal statuses when engaging with banking app

	Age over 65	**Non-salary income**	**IRP[38] holders**	**Living in rural area**	**International students**	**Irish Citizens[39]**
Users	U-B1, U-B2, U, B3, U-F1, U-F2	All users	U-D1, U-D2, U-E	U-B2, U-F1, U-F2	U-A, U-D1, U-D2, U-E	U-B1, U-B2, U-B3, U-C1, U-C2, U-F1
Total	5	11	3	3	4	6

Participants also responded to obstacles by switching to different providers or by maintaining multiple accounts and using them selectively. These practices do not alter the underlying design of the systems, but they show how users need to adapt their behaviour to the constraints of banking services, often with uneven levels of autonomy and control. These everyday adjustments illustrate how users encounter and negotiate

[38] Irish Resident Permit
[39] Including naturalised citizens

the assumptions embedded in banking systems—particularly expectations of digital literacy, stable legal identity, and regular income.

With the recent shift towards digital and platform-based banking in Ireland, users of digital banking services engage more directly in a dynamic process of co-construction of technology, shaping technological design, adoption and modification (Hyysalo, Jensen and Oudshoorn, 2016; van Dijck, 2009). In this context, they are increasingly defined as users in the platformisation sense. The expanded definition of users includes the 'traditional bank customers' as users in the broader sense as users of banking service, including the mobile apps, non-app digital services, and the in-person banking services. It views users not merely as users of mobile apps, i.e., one type of technology, but as individuals navigating the evolution of technology in banking services. It acknowledges human agency in adapting to, modifying, and sometimes resisting technology, which could lead to unintended barriers to use as well as disruptive uses of technology against its intended purpose (Hyysalo, Jensen, and Oudshoorn, 2016). For example, in the group interview with U-B1, U-B2 and U-B3, three women over the age of 65 from Irish and long-term EU backgrounds (over twenty years of residency in Ireland) who lived in small-town or rural settings repeatedly emphasised that they had good experiences before Covid-19, when banks closed and users were pushed towards mobile banking apps.They expressed the view that they should be able to continue their existing banking practices rather than having to learn and adapt to new app-based systems.

> 'We were just fine with the banks before all the [mobile] phones [and banking apps]' (U-B2, 2024).

This chapter argues to expand the understanding conceptualises users not only as app users but as users of banking services across all channels. It views them as active participants in the interpretation and use of technology rather than passive recipients (Oudshoorn and Pinch, 2005). In this section and *7.2* below, this perspective is combined with the findings from the walkthroughs, which identified how banking apps are designed around an assumed ideal user with stable legal identity, digital confidence, and routine financial literacy. The user interviews in *Phase 3* are then examined in relation to this ideal user assumption, highlighting where everyday practices align with, adapt to, or diverge from the expectations embedded in banking systems. For example,

the researcher's identity as a non-Irish long-term immigrant shaped her interaction with the banking apps examined, particularly when proof of address and legal residency was required. Although these requirements could be resolved by submitting additional documentation, the process was slower and less straightforward than for users who met the assumed ideal profile of stable residence and established financial history. However, the researcher's high financial and legal literacy also contributes to solving these issues quickly and confidently, which may not be shared by other immigrants facing issues proving their residency in Ireland. While such barriers can be overcome or bypassed to varying degrees, they nevertheless affect access to, and use of, banking services. These issues are examined in more detail in the following sections drawing on empirical data from both expert and user interviews.

7.2 Categorising Banking Users: Industry Perspectives from Banking Experts

As discussed in *Chapter 6*, the experts do not purposefully distinguish between people who engage with the banking services as 'bank customers' and 'app users.' Rather, they consider them collectively as 'users' of banking services, with different characteristics depending on their online or in-person interaction. This expands the conceptualisation of users in contemporary banking in Ireland but also raises new questions: how do experts categorise users? And do these user categories align with assumptions in existing literature and the findings from the walkthrough? Using the expanded definition of 'user' outlined above, this section investigates how experts categorise users and addresses gaps between existing literature, the walkthrough findings, and industry perspectives.

This thesis approaches user categorisation through the lens of co-construction of technology and social imaginaries. As discussed in *Chapter 3*, variations in digital literacy, financial literacy, and trust shape how people encounter and adopt mobile banking apps, intersecting with age, gender, and socio-economic status (SES). From this perspective, users are not passively grouped into predetermined categories but actively positioned within banking imaginaries that emphasise certain competencies while marginalising others. This framing informed the questions posed to experts regarding how users are understood and categorised within their organisations, and whether any measures are in place to support particular groups. Rather than dividing users into fixed categories based on their financial and digital literacy, experts described users in terms

of their everyday circumstances and support needs. For example, M3, a manager at a pillar bank, referred to older clients as the ‘golden years’ group for users over the age of 65, not as a separate type of user, but as customers who may require additional time, reassurance, or assistance when engaging with increasingly digitised services. These descriptions reflect the institutional imaginary of the ideal user, discussed in *Chapter 5*, by signalling where users are understood to depart from the assumed capacities embedded in banking systems.

> ‘So, we have a category, the golden years, a category that [is] over 65. They don’t have any dedicated people looking after them, but we would have, you know, maybe some one of our welcome advisors […] They try and look after those with a little bit more time or care or attention if the customer needed that.’ (M3, 2024)

M1 (2024) further explains that, in banking, there may be some groups of people—similar to the ‘golden years’ category highlighted by M3 (2024)—who require more attention. In some cases, this attention may result in tailored treatment for that user category, but service providers do not necessarily consider them as a distinct classification. M1 emphasises his extensive experience in banking and his involvement in various roles within the same pillar bank, which has given him access to different scenarios and adviser–customer dynamics.

> ‘So, 24 years working for the bank. I’ve done all the roles. I started off working on the cash desk and the customer service area, all the different advisor roles. […] We do have a dedicated space in every branch that if a customer needs a little bit of extra time, or a bit more privacy. […] We can bring them [in the dedicated space] and [have] advisors [waiting] outside. And I knew this is like, particularly, maybe, a unique category that you would think [is] interesting to share. […] But [this is] not necessary to be like a divided category or special advisory. [They are] kind of like a group of people from the experience that you think needed more attention or, like, slightly different from others.’ (M1, 2024)

M1 (2024) argues that, rather than dividing users who struggle into different user categories, it is better to consider them as a broad group of people facing various

challenges that require more assistance and attention. Given the complexity of this group, advisers (including bank managers and branch workers) can exercise their own judgment to assist individual users in a given context, rather than developing an institutional-level strategy for them. This approach from a pillar bank expert was also supported by experts from neobanks, but with different incentives and justifications. D5 (2024) explains that:

> ‘There are always people who are slower than the rest of us to adapt new technology and we have nothing against them. We are not “not wanting” anyone. I think you can understand that. […] But see if we were to make a new function or an improvement today, spending money and having a team working on it, those [referring to the slower people] are not our priority. We focus on people who (are) already using our service or want to use our service. […] It is really easy like that. [For people who want to use the service], they will use the service if we make it possible for them, but then not all of them would have a guaranteed [result] like that.’

This prioritisation could be understood in relation to the ideal user imaginary proposed in *Section 7.1*. For neobanks, which operate without physical branches and rely almost entirely on app-based interaction, users who are confident with digital tools and able to navigate automated service environments are implicitly prioritised. These users already align with the competencies assumed in the design of the service. D5 (2024) explained that while the organisation does not actively exclude those who struggle, development and support resources are directed towards users who are already able and willing to engage. Instead, digital literacy and willingness to engage function as qualifying criteria for those who are considered a priority user. Support is therefore not targeted based on demographic or structural need, but based on alignment with the service model itself. This reinforces the ideal user by investing in those who already match its assumptions, while users who require additional support are left to self-navigate assistance pathways or adapt independently. C2 (2024), speaking from an organisational strategy perspective, explained that while the service is technically open to all, development resources are directed towards users who already possess the motivation, skills and digital competencies associated with lower second-level digital divide barriers.

> ‘There are resistances that are really just beyond control and sometimes so unique to each person that we don’t even know what they are resisting, to be honest with you. And yes, if you ask me whether we eventually want them [as users], we would not oppose that, but what after? We can get them into the service, but likely they would have some troubles, and it [refers to the trouble] will only grow. So, with limited resources, as a growing company, they may put that [referring to resistant non-users and sceptics] aside for now. […] It would be counterproductive to invest everything in people who don’t want it in the first place.’

This again indicates that, in practice, digital literacy, confidence, and willingness to engage function as the qualifying criteria for who receives priority attention in service development. Rather than allocating resources to support users who face barriers, the organisation assumes that such users must first demonstrate readiness to align with the service model. This reinforces the ideal user and digital imaginary by prioritising those who already match the profile and leaving others to self-navigate available support. If resistant users and non-users do not have dedicated teams or targeted services designed for them, does this mean that banking services treat all users the same? This question was posed to experts to investigate whether there are any unique user categories that they as service providers treat differently. The answer was the ‘high-net-worth’ category. The definition of high-net-worth users/customers varies across banks, but this category receives similar treatment from both pillar banks and neobanks. According to M1 (2024):

> ‘Customer groups. I suppose, over the years, this has changed, but say at the moment, we would have what we would call our mainstream customer base. So that would be 80% of our customer base will be somebody who has an account. They get, you know, salary paid into it, or they get a payment made into a monthly basis, and they live off that account. And then we have our kind of high-net-worth customers that we would categorise as our premier customer base, so it can be divided in two different ways, or designated primary two different ways. If they’ve an income of over 100,000 [euros] or if they’ve assets or balances over 100,000 [euros] they would fall into a different category of customer.’

M3, also from a pillar bank, provides further details on high-net-worth users in pillar banks.

> ‘The high-net-worth customers would have some dedicated advisor access. They have dedicated phone lines terrain where there’s a little bit more streamlined kind of service that they can go through and on certain products. […] Just as an extra benefit or an extra bonus thing. (M3, 2024)

He also shares his personal experience, explaining that even after moving away from an advisory role for high-net-worth users, he has maintained relationships with them and, on demand, continues to handle their banking needs. This further emphasises how banks value and prioritise the needs of this category of users.

> ‘So, a few people [from the high-net-worth category I used to be their advisor] I just keep in contact with them. They will come to me rather than they will come to others or just come to the bank.’

For neobanks, while high-net-worth is not an advertised user category, a similar dedicated service is available.

> ‘We send invitations to people who have, say, reached a certain amount of assets with us. […] This is not always so accurate with these kinds of services [referring to neobanks] since we don’t always know exactly where the money is from and how it got there, like, whether this is a salary rather than the person moving it from another account [of theirs from a different bank], but you also kind of just know. […] This also all follows a system; no one is just sending invitations themselves. Our systems highlight certain accounts that fit a pattern, and then a team checks [if they are high-net-worth users].’ (D4, 2024)

Additionally, for those who are not yet recognised by the bank as high-net-worth —given that some people use a neobank as their secondary bank—there is also a paid opportunity available.

> ‘But you are talking about exceptions here, and everything has exceptions that maybe I wouldn’t even know about. But, just from what you are asking here and

> what I do know—not to say that I am involved in this in any way. There is a team dedicated to this, so it's not part of the everyday service, like what, say, I would be working. But yes, you can call Revolut if this is what you really want, not that we advertise that, and it comes with a price. […] You can get all that, instant customer service, phone calls, exclusive products, cashbacks and points, concierge, that's what they would say, Ultra, which is a paid plan and costs about, I think, 600 euros a year.' (D5, 2024)

The categorisation of users in both pillar banks and neobanks indicates that the priorities of the banking industry differ from existing scholarly perspectives on users in sociology and media studies (see *Chapter 3*). The justification offered for this broad and undifferentiated categorisation, particularly when asked about responsibilities towards users who may find it difficult to adapt to mobile banking, was that the bank already provides support to all users. From this perspective, the challenge is not the absence of assistance but users' own awareness of it. In other words, rather than proactively identifying and supporting groups who may be disadvantaged, the bank places responsibility on individuals to recognise their own needs and seek help. As M2 (2024) explained:

> 'If you look at each individual category, one of the things that is fairly apparent is not everyone knows the scope of things that the bank can actually help the customer with.'

As discussed in *Chapter 5*, this reflects a broader process of responsibilisation, in which the labour of managing access, resolving barriers, and maintaining participation in banking services is transferred from institutions to individuals. Given the uniqueness and complexity of personal finance, each user may require different assistance, leading them to engage with different services. As a result, the bank does not contact a particular user group but all users, advertising available events and additional assistance, allowing users to self-navigate to the help needed.

> 'So, it's trying to have more people we can talk to. What we do is we take them through a process. […] So, we have a full financial review process. It's about how a person is now, where they want to get to in the future, how we can help

> them get there. So, it's almost customer-by-customer at the moment. […] Every corner branch will have a series of advisors where we're proactively contacting customers of all sorts. We're ringing and we're inviting them in for a financial review. We're talking about what their long-term financial plans or financial goals are and where they are now, and like, what we can potentially help them with in terms of what's the best way to get there.' (M1, 2024)

He then provides an example of individuals who may be vulnerable to fraud:

> 'We had a group of customers here only last week where we were talking about fraud and financial fraud and financial crime. We had experts in local garda that came in. We had people from our own fraud team. I was speaking at it, where it's given how people can protect themselves in terms of potential scams. […] If they get a text message, do not click on not to fill in information, all of that type of thing. It's an educational piece there as well. So that's something that people wouldn't necessarily think that they come to a bank for help with if they get these messages and what to do about it. […] A large customer base that doesn't realise. (M1, 2024)

However, while M1—and seven additional experts—argues for the effectiveness of this approach, it reproduces the issue identified in *Chapter 5* regarding the responsibilisation of users. Experts do not maintain fine-grained demographic categories of users. Instead, interviews reveal a pragmatic two-tier logic that simplifies the diversity of banking users. On one side, a prioritised high-net-worth segment is afforded dedicated support lines, faster routing, and access to bespoke products. In pillar banks such as Bank of Ireland, this category typically refers to customers with either annual income exceeding 100,000 euro or assets/savings balances above 100,000 euro. These users receive enhanced access to advisers and streamlined service pathways, reflecting their perceived value to the institution. These users receive additional human and technological resources that enhance their overall experience. On the other side, all other users are grouped into a broad, heterogeneous category that includes older adults, migrants, and low-income individuals. This catch-all group is expected to navigate generic help options such as FAQs, chatbots, or occasional workshops, with little recognition of their differing needs or barriers. This split matters for the research

question because it demonstrates how responsibilisation is institutionalised in banking practice. The advantaged group receives dedicated attention and streamlined access, while everyone else is directed into self-help pathways that presuppose high levels of digital and financial literacy, as well as timely awareness of available support. In effect, this division reproduces structural inequalities in access to financial services, shaping the experience of social inclusion and exclusion in contemporary banking. It also reflects the institutional imaginary identified in Chapter 5, in which banks imagine an 'ideal user' as a digitally competent, resource-rich individual who fits seamlessly into platform logics, while relegating others into a residual category expected to adapt, self-educate, and assume greater responsibility for overcoming barriers.

At the same time, traces of the transactional and digital imaginaries are also visible in this two-tier categorisation. The transactional imaginary is reinforced when generic users are pushed towards self-service functions and automated systems, where their labour is reframed as efficient, seamless participation in everyday financial tasks. The digital imaginary is evident in the presumption that most users can, and should, operate comfortably within app-based ecosystems, relying on algorithmic prompts, push notifications, and chatbot-mediated support. Together, these imaginaries combine to shape institutional priorities: privileging those whose resources align with the ideal user profile, while responsibilising others to conform to the logics of digital platforms. While *Section 5.3* focuses on how the app service environment requires user labour in authentication and communication with non-human agents, carrying corresponding risks due to the expectation of certain levels of expertise, this subsection shifts the argument to the labour and responsibility of acquiring the necessary financial literacy. In response to the fraud prevention initiatives mentioned by M1 (2024), although they are framed as educational opportunities, users must first recognise their own potential vulnerability in order to actively engage with such events. This requires a level of financial literacy that vulnerable users may not possess. By presenting these events as universally available and inviting users to attend, the responsibility for recognising the need for support is shifted from the service provider to the individual. In practice, this places disproportionate pressure on groups who already face structural barriers. For immigrant users in particular, limited familiarity with the Irish banking system, uncertainty around documentation requirements, or uneven English proficiency may make it especially difficult to interpret such invitations, recognise their relevance, or feel confident participating. As a result, while the support is nominally 'open to all', its

uptake depends on the user's existing knowledge, confidence and willingness to self-identify as needing help—conditions that are not equally distributed. This creates a situation where services appear to be inclusive but remain inaccessible to some people.

7.3 From Barriers to Exclusion: User Perspectives

Unlike other platforms, such as social media or dating apps, where users can construct multiple personas and present different versions of themselves according to context, banking apps require users to operate under a single, verified legal identity. This is necessary for regulatory compliance (including KYC requirements) and means that users cannot separate their banking identity from their personal identity. As outlined in *Chapter 4*, the *Phase 3* interview sample included users over the age 65, Irish and EU users living in rural or small-town settings, and non-EU migrants with varying documentation statuses (see *Table 4-8* and *Table 7-1* above for details). For many of these participants, this requirement to engage through a single legal identity shaped both the possibilities and constraints of their banking interactions; it determined what accounts they could open, what evidence they were expected to provide, and how easily they could resolve problems when they occurred.

7.3.1 Banking Persona

While users may shift or curate aspects of their identity on other digital platforms, banking apps do not allow this flexibility. Because access to banking requires a verified legal identity, users must present themselves as the same person across all interactions and accounts. As discussed in *Chapter 4,* many participants in *Phase 3*, particularly older adults and non-EU migrants, encountered difficulties at the point where identity verification and documentation were required. The inability to separate or adjust one's 'banking identity' creates both technical and non-technical barriers to access. These constraints intersect with second-level digital divides, as challenges related to proof of address, residency status or confidence in navigating app interfaces directly affect users' capacity to access and use banking services. However, this is not accommodated in banking apps which require a higher level of security and authentication. While people can choose to dedicate a specific bank account to a particular purpose, for example, using Revolut for online shopping while keeping savings in a pillar bank account or

obtaining a mortgage account with Permanent TSB while maintaining a regular account elsewhere, these divisions do not create different user profiles of the account owners with the banks. This is because the personal identification processes are not shared across different banks. Users can choose to link accounts of different banks, for example in Revolut, external bank accounts from other providers can only be accessed with limited functions, such as checking balances. Also, the external bank account linked to Revolut only operates in one direction. For the external service provider, it is an authorisation to grant Revolut to access certain user information. All accounts remain linked to the user's full identity, which is reviewed and categorised by the service provider. In other words, as a result, establishing a dedicated persona for online banking that is separate from one's personal identity is not feasible.

Meanwhile, as explained above, banks—aside from the high-net-worth category—do not divide users into any particular category based on demographic info. Instead, they categorise them based on their banking needs. For example, a user may be labelled as a 'mortgage client' regardless of their age, digital confidence, or experience with financial administration. However, the barriers that shape access to banking services often intersect with factors that were evident in the interview sample, including age, language proficiency, and immigration or residency status (see *Chapter 4*). These characteristics influenced how easily users could understand documentation requirements, navigate app interfaces, or seek assistance when difficulties arose. As a result, while the service appears uniform, the experience of accessing and using it is uneven. This leaves users to form informal groups, creating and sharing vernacular banking knowledge in response to the lack of dedicated attention from banks. This links back to the discussion of user labour and responsibilities (see *Section 5.3*). A quotation from expert interviews was shared by the researcher in user interviews regarding whether users are aware of the help available:

> 'Banks can do all of these things [referring to additional assistance for users who need them], but not everyone would know about it.' (M1, 2024)

In response, U-B3 (2024), who falls into 'golden years' group, responded:

> '[…] And whose fault is that?'

U-B3 (2024), one of three women living in small-town or rural settings over the age of 65 interviewed together as group B explained:

> ‘I don’t know what I am [as a user category]. So, I guess I am someone but not [like] someone who gets paid if anything for knowing this sort of things. […] You won’t go around and see me in a shop not asking [the staff where things are] and no one seems to have a problem with that. Think if someone there [referring to the SuperValu near the interview site] telling you, what was it? we have everything here but not everyone knows to come to us for, say, getting milk.’

Follow this example, U-B1 (2024), an Irish woman over the age 65 living in a small town close to Dublin, argues:

> ‘They didn’t just blame people [for not knowing], they should go figure out how to let us know about this.’

Similar responses were expressed by both experts and users. Experts emphasised that support is available and that users can access assistance when needed, while seven of the eleven user interviewees argued that this effectively places responsibility on users to identify their own needs and initiate help-seeking. In their view, it should be the bank’s role to recognise who may require assistance and to provide it directly, rather than expecting users to navigate self-service channels or request support.

> ‘It is all like them machines, you know, all the work to get a statement and you probably would get it. […] if I can’t even get that [referring to the bank statement from self-service machines in hybrid branches], how would I know what kind of assistance that I would need to help me out of it? […] I know I have a problem and now, see, I can tell you about this problem. That is all good things to do, but then they should tell me the fixes.’ (U-F1, 2025)

U-F1 (2025), an Irish male citizen over the age of 65, who lives in a rural area and previously operated his own tour bus business, emphasised that users are expected to describe any issues they encounter in precise terms in order for the service provider,

often with a non-human agent such as a chatbot, to process the request. The Revolut virtual assistant, formally known as Rita from Revolut, who is now unnamed, once asked a user to 'type a concise question' (Revolut, 2023) when reporting troubleshooting use. However, the problem is that users are not necessarily at the same level of training and knowledge, nor should be expected to precisely describe their issues and questions or identify the barriers caused by them. This is precisely why they need assistance. He argues that if users were already able to identify the cause of an issue, they would not require help. He states:

> ‘I’m not asking to be difficult. […] I am difficult because these banks have made it difficult. Twenty years ago, you didn’t see me asking questions. Those banks probably never heard from me then. It is not my goal to make anyone’s life miserable, like, oh, this old guy has nothing to care about and is now just coming at us. […] Like I said, I am a simple man, not looking to be in anyone’s way. But I am just one person, while the banks have everyone working on different things, so maybe this is the first time I have this [trouble], but let’s say someone had the same issue a month ago somewhere. I don’t know this person, but they could be out there, and the banks know about this. So, when I go, they will know that this is that thing. But I don’t know, so they tell me what to do. It’s not like I tell them to give me this and that. That is not how this would work.’ (U-F1, 2024)

With these overlooked difficulties—or rather, the oversimplified solution of ‘providing a diverse range of help for all’ and leaving users to choose what they need—users have started developing their own vernacular solutions. One common approach when encountering a hard-to-resolve barrier to use is to switch to a different provider. According to U-C2 (2025), an Irish male citizen aged 35–44 with a high level of digital literacy, he had held a Permanent TSB account for a long period until an unexpected disruption[40] prevented him from accessing it. While he believed he had the ability to resolve the issue, he felt it was not worth the effort to go through the customer service process, described in the quotation below, so he switched to a different provider of the same bank type of pillar banks, Allied Irish Bank (AIB).

[40] U-C2 did not specify the type of disruption but emphasised that he could resolve it and simply chose not to do so.

> ‘I have the Irish Permanent TSB, one that I can’t access because they locked me out and it’s like a one-hour phone call that I have no intention of ever sitting through. So, then I opened up an AIB one just last week and that was so easy. But anyway yeah. So, I have 3 banking apps on my phone, two of which I can use and one of which I cannot use.’ (U-C2, 2025)

U-C1 (2025), an Irish male citizen aged 18–24 with high digital literacy and moderate financial literacy, also described a similar experience when switching from a pillar bank to a neobank (Revolut):

> I just wanted my banking via my phone and the Bank of Ireland app was very, very poor. And like I said, I could probably check my balance and even with that, I think every time that I had to check my balance, I had to reference a sheet of paper I was sent when I was 14 to log in or something like that. And I was like this. There has to be a better way. […] With saying that, that account is [now] only used for my stipend because I needed an Irish account for this and at the time Revolut was Swiss based[41] or something, so they didn’t have their Irish IBAN yet. […] I do all my other daily banking through Revolut. I do literally everything through Revolut, investments, savings, the whole lot. (U-C1, 2025)

However, switching to a different service is not available to all people with banking needs in Ireland and comes with a degree of privilege. Both U-C1 and U-C2 are Irish citizens with stable incomes at the time they switched to a new service to replace one that was difficult to access or use. Their switching process was relatively easy, improved their overall banking experience and did not negatively impact their trust in banking services as a whole. This was because their poor experience with either Permanent TSB or BOI was not due to systemic barriers or belonging to a marginalised group but rather to personal issues such as a lack of specific digital skills or knowledge. In contrast, for users facing structural barriers, such as those from marginalised communities, or those with temporary citizenship rights, an inability to overcome these obstacles with initial effort could lead to different responses, potentially resulting in a

[41] At the time, Revolut in Ireland operated under Revolut EU with a banking licence from the Central Bank of Lithuania.

loss of trust in banking and a sense of withdrawal if the issue persists. This means that while some people may not actually withdraw from the service—for example, like U-C2 above, who had issues with his Permanent TSB account and no longer uses the service—he did not suspend the account, making him still a user of the service. However, he does not use the service anymore, which could be considered as a form of withdrawal while not officially withdrawing from the service.

There is greater frustration among international immigrants regarding the lack of clear information provided by banking services. According to U-D1 (2024), a non-EU national and postgraduate student, aged 18–24, who came to Ireland for a one-year master's programme and had only short-term residency, a high level of digital literacy but relatively low financial literacy- she relied on family funds:

> 'Ireland just has bad banking system or maybe they don't like me. Both. And if they don't like me, I don't like them, maybe. So, I think I have an AIB account, but there is no money. I never used it because they don't let me [transfer money from my home country to my AIB account]. They needed me to prove the money is mine and that somehow requires my parent's work letter. You know that probably you needed to do it too, but I don't want to do it anymore. My mother gave me a supplementary card of her credit card, and that works better than all Irish banks.'

Then when asked if they have tried any of the neobanks service that might be less strict than AIB, U-D2 (2024) states:

> 'No and I don't want to. I have heard about it and downloaded it even, but it asked me for my IRP[42] at the time I didn't have it. Then when it finally arrived, I was okay with the credit card, so I just don't want to do it anymore. Maybe one day if I have to use it then I will try, maybe but not really, honestly.'

This is also supported by U-B1 and U-F1 who are users over the age 65 from Ireland. Despite having accounts with Revolut, they have never used them independently.

[42] Stands for Irish Resident Permit.

> ‘My granddaughter uses it, and she downloaded it on my phone. I don’t even look at that thing and when she comes, she does something there and tells me about it. So, she set up money to go in there and to hers. That is all I have it for. I don’t want her to teach me. I don’t want anyone to teach me. I don’t want you to teach me. It is fine.’ (U-F1, 2024)

> ‘They [refer to the banks] think we are going to die anyway so they really just stopped bothering. And I am not even saying that they are wrong. I am going to die, soon enough [for banks to improve their service for someone like me]. Everyone really. So, I don’t know, maybe it is more important to look after those [users] who are going to stick awhile longer than us, and let’s see how that’s going to end.’ (U-B1, 2024)

They explain that they have no need for new accounts, as their existing accounts—while difficult for them to use—are already set up for automated actions, such as direct debits. Their daily banking needs are relatively simple, allowing them to withdraw cash from their bank and continue using a more traditional form of banking. This means there is little incentive for them to adopt new technology. Similar to U-C2, while their current banking services may not offer full functionality or ease of access, they still meet their everyday needs and are therefore considered an acceptable option. However, negative experiences with banking services can lead to a loss of faith and trust in banking institutions, further discouraging users from engaging with new services that might benefit them in the future. When asked directly about the educational events described by banking expert M1, none of the *Phase 3* participants reported having heard of them. When subsequently asked whether they would attend such events if they were made aware of them, U-B1, U-B2, U-B3, U-D1, and U-D2 expressed hesitation, describing uncertainty about how to sign up, discomfort asking for assistance, or a lack of confidence in participating. In these cases, the barrier was not the absence of support, but the difficulty of recognising support as relevant and accessible. As a result, these examples demonstrate that barriers to banking access arise at the level of everyday practice.Users over the age of 65, referred to by Bank of Ireland as “golden age” users, often encounter difficulties in verifying their identity. Similar challenges arise for users with uncertain residency status, including those with temporary visas or short-term residence permits. These difficulties extend to communicating banking problems and

initiating contact with support services. The experience of the assistance pathway is complex, and requires a level of financial and digital confidence that is not evenly distributed across users. Thereby, treating these users as part of a broad group expected to seek assistance independently does not adequately address the structural conditions shaping their experiences. The banking industry needs to revise its current approach to user categorisation and develop more proactive forms of support that do not rely on users first identifying and articulating their own needs.

7.3.2 The Ideal User and User Experiences

The concept of the 'ideal user' was not explicitly mentioned by any users and was denied by experts. D2 (2024), as one of the banking app developers, states that:

> 'We don't have an "ideal user". Our app does not favour or discriminate against anyone. People don't spend this much money developing something only for a small group of people. Our app is intended to suit everyone who wishes to use it.'

This was a response to the researcher's assumption, informed by the walkthrough findings, that there might be a particular ideal type of user that aligns to the design of contemporary banking apps more than others. From the walkthrough, the researcher observed that the service appears to be designed for individuals who possess four key characteristics: 1) a widely recognised legal identity with the necessary documentation, 2) have a common source of income, such as a salary or government stipend from Ireland, and 3) exhibit a good level of financial and 4) digital literacy. While some interviewees met some of these criteria, few met all of them. Interviewees who were more closely aligned with the 'ideal user' imaginary reported a significantly more positive attitude towards banking services in Ireland than those with a lower level of alignment. This suggests that a digital and financial divide exists and that access to and ease of use of banking services in Ireland are influenced by an individual's proximity to the assumed ideal user profile.

U-C1, U-C2, and U-E—all of whom have third-level educational degrees and high digital literacy—reported positive experiences with chatbot-based customer support. This contrasts with existing scholarly work, which identifies risks such as

misunderstandings between users and automated systems, difficulties escalating queries to a human agent, and reduced transparency in decision-making processes (Zamora, 2017; Przegalinska et al., 2019; Powell, 2019). While U-C1 and U-C2 are Irish citizens in the age groups 18–24 and 35–44 respectively, they described similar experiences, suggesting that high digital literacy enabled them to navigate these automated interactions with confidence.

> If I do have an issue that I think is worth contacting them [refer to the bank] about, I've most likely read the FAQs[43]. So, I know exactly what they're talking about, and I know that I'm in a niche area that isn't responded by a blog post, and so I generally just need to pick "speak to a human", but I like I if somebody offers me a chatbot to resolve my problem, I will more than likely try that. And [in case of the chatbot failing to solve my problem], I can scour the Internet for a phone number, an email if it's really an issue' (U-C1, 2025)

> 'Never used customer support in Revolut, I don't think so. […] Yes, so far not really any problem with Revolut yet. I can't remember, but if there were some problems, I have it sorted with FAQs or just report it in the app. It is pretty good.' (U-F, 2024)

The mentions of FAQs by both U-C1 and U-F, further confirmed by U-C2's non-verbal agreement (nodding), demonstrate a high level of digital literacy and confidence with technology. These users have worked closely with platform technology and possess strong problem-solving skills, navigating digital banking services with ease. This suggests that while service providers claim they do not have an 'ideal user' profile and that the term is not used internally by the banks, an idealised user is nevertheless embedded in the design of contemporary banking services. The apps are structured around users who possess stable legal identification, a regular source of income within Ireland, and high levels of digital and financial literacy. Those who align most closely with this profile described seamless interactions, while others encountered barriers that required additional work, support, or workaround strategies. Those who meet these criteria report seamless interactions, whereas others face greater challenges, potentially

[43] Abbreviation for frequently asked questions

leading to lower confidence in banking and a reluctance to engage with these services. This dynamic also reflects broader concerns about the (de)construction of trust in banking services.

7.3.3 Data Trade-Off: Privacy, Security, and Protection

This section addresses the data security and privacy concerns identified in the walkthrough (see *5.2 Terms and Conditions for Mobile Banking Apps*) with empirical data from both banking experts (industry perspective) and users. In *Phase 2*, experts were asked how banks handle user data, particularly for training and operational purposes. One direct question posed to the experts was: 'Do you sell user data?' While all experts explicitly stated that their organisations do not sell user data, D6 further clarified that people may misunderstand the use of external consultancy services as sharing data with a third party, which is not the case. Additionally, some of the experts interviewed were external consultants working on projects related to the banking apps selected for this PhD research (see *4.2.2 Sampling)*. D6 (2024) states:

> 'The answer to your question is no, we don't sell user data. It is illegal. […] But yes, if you ask me whether there is anyone who is not affiliated with An Post who has been called on a project and has worked with some of (the) data you are talking about here, then yes. […] These are two completely different things, and I feel like you don't understand this. Data is not sold to anyone, and if someone works with An Post [Money] data, the data still remains with us [referring to An Post]. They are hired to work for us, and this is very common, so, everywhere.'

While responses to the question about selling data were explicit, the experts did not provide the same level of clarity in explaining how user data is used, other than referring to the existence of dedicated teams and emphasising that all data is confidential. C3 (2024) explains:

> 'When user data reaches us, or anyone who has not directly interacted with the particular person where the data comes from, it is in a dataset with millions of users' data and fully anonymised. We then look at the data and focus only on

> what we need from it, and this is after the data has already been processed for a specific goal.'

However, the explanation of how banks use user data was never discussed in detail or illustrated with real scenarios by the experts. This could be restricted by their ability and capacity to disclose such information or lack of involvement for their particular occupational roles. Regardless, this lack of clarity required further investigation with users to understand their views on data privacy and whether they had concerns about the potential misuse of their personal data. In *Phase 3*, questions were posed to users in two parts. The first part asked whether, before engaging with mobile banking apps, they were aware of the types of data collected by banks. This aimed to reflect the findings from the T&Cs analysis conducted in the walkthrough and assess whether users read and understood the terms and conditions. The second part, focusing on users' experiences after signing up for the service. It asked whether they ever suspected that banks were using their data and how they felt about it.

Regarding T&Cs, users argued that although apps request their consent, the only real option available is to agree. If they did not accept, they would not be able to use the app. As a result, some users saw no reason to read the terms and conditions. According to C2, an Irish citizen native in English and has a high level of digital literacy, he still chose not to read the T&Cs.

> 'Like they [refer to T&Cs] are not really there to be read. It's like, look, do you want to spend 3 hours or whatever doing this thing, or do you want to have access? And if you don't want to, you can just say no and you don't get access. So, you just have to say you read it. You just have to accept it. […] You've signed up to and you're just going to have to take that because there's no way you're going to read it. That's my attitude to them anyway.' (U-C2, 2025)

U-A (2024), a EU international student with a high level of digital literacy, further explains that users do not feel the T&Cs are actually provided for them to read, given how these documents are presented and phrased in lengthy legal terms. Instead, they perceive them as a means for service providers to avoid liability.

> I think I've read like one or two ever, out of pure curiosity of what actually happens. And it's like, if you're downloading the software, it's like, what actually comes here and then it's all boilerplate stuff of like, you only have the license for X number days. And this is the data collection process, blah, blah, blah, blah. […] And so, you know the agreements not taking liability for any actions.' (U-A, 2024)

Regarding their experience using mobile banking apps and their personal data, users did not express concerns about misuse and abuse that the walkthrough findings had assumed. Instead, they demonstrated a level of acceptance about the situation rather than resistance. Users interviewed saw the increasing collection of personal data, including biometric data, as a new social norm with which they need to learn to cope.

> 'Everything is collecting your personal data now, and I suppose in the beginning, people were worried, scared, like they didn't know what this was or what to do. But it has changed now. You can't think everyone is just out there to get you. […] I think when it comes to asking for personal data. Like, do I really need to provide both my email and phone number just to use an app that identifies rocks? Probably not, but this is how it is. They actually don't ask me anymore because I just use my Apple ID to log in, which I guess already has all that information. So yeah, I think this is the time we start just accepting it as it is, like, you know, a long time ago, people also thought that talking on the telephone would get you possessed, but you don't see people thinking that anywhere now.' (U-D1, 2024)

With biometric data in particular, U-E (2024) believes that it is more secure.

> 'I definitely think like using the biometric is safer than using the PIN anyway. […] Not really. No. I don't worry about that [refer to data leak regarding biometric data]. OK, well, it [refer to biometric data, for example fingerprints] still has to be on your phone. I think. I don't think you can just use your fingerprint on a different device and then like log in there and then like do that without already doing the authentication. […] I don't think it's an extra concern

> that they also have my fingerprint. At that point, they probably already have everything else so might as well.'

Moreover, similar to U-E's opinion on their biometric data, U-C2 (2025) views the intensive data collection and processing as a trade-off for better financial security, which protects their money and is therefore acceptable. During the interview, U-C2 shared an experience about when they purchased a pair of designer shoes from an outlet website that appeared on their social media feed as a targeted advertisement. Revolut was able to stop the payment before they realised the website was fraudulent. C2 states that when they were making the payment with their Revolut account, the payment was automatically blocked by the bank for two attempts and flagged as fraudulent. They then checked the domain of the website and saw that the name was carefully misspelt to pass as an authentic brand website. U-C2 (2024) explains:

> 'It was Revolut that flagged it. So, I was very grateful for Revolut because I wouldn't have copped it in time. And then you wouldn't be able to get the money back.'

Responding to a follow-up question on whether this incident raises concerns about how much data Revolut would obtain to enable them to function like this, U-C2 (2024) argues:

> 'That particular time like that they stepping in and it's like Revolut was mammy'ing me and saying no, no, no, we're making this decision for you. […] In the moment when they wouldn't let me buy them the shoes when I was, like, consumed with the desire for these. I was like, what are they doing? Who are they to tell me that I can't spend my money and then I just kind of sat back and thought, oh, no, something's going wrong here. […] then I was grateful for it.'

As U-C2 was in a group interview with U-C1, they also discussed what Revolut had done: :

> 'I think to echo a lot of what U-C2 has said, there's a few times where payments or subscriptions come through and they come through on like a dodgy name or

> something and with AIB that would just come through and the money would come out. And then Revolut would be like hey pal, do you want us to accept this transaction or no? And then you're like, nah, that's my subscription. And you're like, OK, cool. And you approve it. And so like, they do give you a heads up, I feel like there has to be some sort of scale.' (U-C1, 2025)

Since the *Phase 3* user interview sample was relatively small, it is not possible to generalise these experiences to a wider population. The quotations presented here illustrate how some users interpreted and responded to data collection and security measures, rather than indicating a uniform or representative pattern across all users. While the event shared by U-C2 was echoed by U-C1, it does not allow for further generalisation of the perception of data collection as a trade-off for better security and overall protection of their personal finances. However, this emerging finding could be explored in future research. It is especially relevant given the increasing use of AI technologies and the datafication of financial behaviour in many countries. Banks now analyse transactions, purchasing patterns, geo-location data and other behavioural data. Recent work in other national contexts has begun to examine how such practices shape risk profiling, service access and everyday financial inclusion. This growing body of research suggests that similar processes may be unfolding in Ireland and warrant closer investigation.

7.3.4 Immigrant Users and Legal-Bureaucratic Conditions

Four interviewees from *Phase 3* are immigrants, with one from the EU (U-A) and three from outside the EU (U-D1, U-D2, U-E). U-A and U-E have resided in Ireland for over one year and receive a monthly income in Ireland as part of their university scholarships. In contrast U-D1 and U-D2 came to Ireland for shorter courses without funding and relied on international money transfers from sources located outside the EU. These participants highlight how access to banking is shaped by immigration status and the administrative and geopolitical conditions attached to different nationalities. Even among international students, differences in residency documentation, proof of address, and the recognition of foreign financial histories produced distinct challenges. For EU nationals, such as U-A, banking access was disrupted mainly by administrative and verification procedures. For non-EU nationals, however, the requirements tied to

Anti-Money Laundering (AML) and KYC checks were more demanding, as their home-country banking records and funding sources did not align with the expectations of Irish banking institutions. In this way, both personal legal status and the position of one's home country within global financial regimes shaped the ease or difficulty of accessing everyday banking services.

> 'It should be easy but I can't get my stipend as they needed an Irish [bank] account but I was not here at the time because why should I. It was [during] covid. But then I was still doing my PhD and should still be paid. […] I am not going to say anything about the details, you know, but I got my card sent to a friend then I got back paid but it was a lot of work for something that shouldn't be this hard. I don't think AIB understands what a PhD student is to be fair.' (U-A, 2025)

While U-A did not provide detailed information in the interview, relevant issues can be inferred from the walkthrough findings. In Ireland, opening a bank account requires proof of both a billing address and a stated purpose for banking. Pillar banks offer 'higher education accounts' targeted at students, but these accounts often require students to demonstrate sufficient funds before approval. For a PhD student receiving a monthly stipend, the stipend did not neatly qualify as adequate proof for a higher education account, and was also insufficient to meet the criteria for a standard current account. This created a bureaucratic gap, leaving U-A in an uncertain position between the two categories.

By contrast, U-D1 and U-D2, who had no regular income in Ireland, did not strictly need Irish bank accounts for their short-term stays. Nevertheless, both attempted to register for one, as U-D1 (2024) explains:

> 'I was thinking to just use my credit card for China […] I still use it most of the time just not for supermarkets. It is my mom's [credit card] supplementary card. Like you know in China the password [referring to PIN code] is six [digits] but here is only four. So I was paying with my [credit] card but for everything over fifty Euros I have to use the passwords but they don't let me [to put the last two digits in] so it always says my password is wrong. Then you know they started thinking it was not my card and I can't pay for anything.'

U-D2 (2024), also originally from China, gives a different reason:

> ‘Everything needs bank statements. I want to travel but I need visas. For visas you need to have bank statements. Bank statements in English. So I have to get a bank account even it is more expensive [to transfer money internationally than using the credit card].’

When asked about any issues they had to obtain a bank account, U-D2 (2024) explained:

> ‘We have read a lot about this. On Xiaohongshu [a Chinese social media platform] there are bloggers making tutorials about this so you can just follow it. I don’t know some questions but I just followed [the tutorials]. Then I made an account with Revolut and I added it to Apple Pay but they blocked my card again [just shortly after granting the account] because [Revolut needed my] tax residency in China. I don’t have tax residency in China because I am a student. I didn’t even know what it is but I searched on Xiaohongshu and I found a message [to send to the customer support team in Revolut] so I did. And they gave me my account back.’

U-D1(2024) further elaborates:

> ‘And U-D2 got hers before me so she told me [about the tutorials and tax residency] but I didn’t have my IRP because there was no appointment [when I arrived]. I live in Dublin so there is only one office with a lot of people. So I tried with my entry visa but Revolut said that it was a tourism visa because of the sticker [as the visa was stuck on the passport rather than on a separate card as with IRPs]. […] I waited, then I did again when I received my IRP.’

Unlike U-A, whose EU passport was recognised on its own without further documentation for Irish banks, U-D1 and U-D2, both non-EU nationals with Chinese citizenship, encountered a two-layered identification issue. While their passports were accepted as legal identification, the Irish Residence Permit (IRP) served as proof of legal residency. The timing and availability of the IRP, which can be delayed when

someone moves to Ireland, created additional barriers. Even after successfully opening an account, U-D2 did not use her AIB card, as she was asked to provide her parent's employment letter to prove the legitimacy of funds transferred from outside the EU, a requirement she refused to meet. These examples demonstrate the mismatches for certain non Irish and non EU users between national identity requirements and platform onboarding processes, as well as the demand for extensive proof of source of funds, particularly for family remittances. The result is that eligibility itself becomes uncertain, depending not only on financial capacity but also on whether one's documentation aligns with the expectations encoded in app workflows (Kostakopoulou, 2024). As a result, seemingly routine requirements became insurmountable obstacles.

These experiences illustrate how documentation requirements intersect with the design of platform-based banking. KYC checks are legally mandated, but when carried out through digital interfaces the practical work of meeting those requirements shifts to the individual. Users are required to gather documents, interpret the instructions given, repeat identity verification steps and accept the risk of being rejected without clear explanation. This reflects the process of responsibilisation discussed in *Chapter 5*. Tasks that would previously have been supported or completed by staff in a branch are redirected to users, who must demonstrate their eligibility and resolve difficulties on their own. As U-D1 explained, the repeated effort of proving her legitimacy led her to feel that the Irish banking system did not want her as a customer. This shows how administrative and technical barriers can translate into a felt sense of exclusion. U-D1 summarised this frustration by suggesting that she felt actively disliked by the Irish banking system. Such negative experiences and feelings of exclusion represent a form of responsibilisation under unequal conditions. The responsibility for resolving eligibility uncertainties is transferred from the institution to the user, without acknowledgement of the asymmetries involved. This responsibilisation becomes a pathway from barrier to exclusion: when legal and bureaucratic frictions compound, non-citizens may disengage from banking services altogether or restrict themselves to precarious alternatives, such as relying on relatives' accounts.

Linking back to the imaginaries identified in *Chapter 5*, these immigrant experiences reveal the uneven reach of each imaginary. The Institutional Imaginary—where banking is understood as a formalised system tied to state-recognised identity—excludes migrants whose documents do not neatly fit national frameworks. The Transactional Imaginary, which emphasises seamless

payments and frictionless transfers, breaks down when KYC processes interrupt flows with repeated proof demands. Finally, the Digital Imaginary, which assumes users are empowered by mobile-first design, falters when app interfaces cannot accommodate bureaucratic exceptions, responsibilising users to solve the gaps themselves. Together, these frictions demonstrate that imaginaries, while presented as universal, are in practice stratified—serving some populations while marginalising others.

7.3.5 Lapsed Users and Withdrawals

The previous sections show how barriers arise when users' circumstances do not align with the 'ideal user' embedded in contemporary banking systems. When tasks such as identity verification, interpreting documentation requirements or locating appropriate support channels are delegated to users, those with stable legal status, digital confidence and financial familiarity can manage these demands. For others, the cumulative work required to keep access to banking services functioning becomes difficult to sustain. In these cases, users may gradually withdraw from certain services, avoid new features, or reduce their engagement. This form of withdrawal is not a matter of personal preference but reflects how institutional and digital imaginaries structure who can remain included with relative ease and who must consistently work to stay included. When platforms require users to parse terms and conditions, identify the appropriate help channel, describe problems in system-recognisable terms, or assemble complex proofs such as KYC documentation or evidence of source of funds, then tasks that were previously handled by banking staff are reassigned to users. For well-resourced users who are familiar with digital systems, this may be an inconvenience. However, for others interviewed in *Phase 3* - such as users over the age of 65, international students with limited residency histories, and recent migrants managing complex documentation requirements - these tasks may be disabling. What begins as a barrier to access can become withdrawal from, or non-use of, banking services. This dynamic directly relates to the second research question, which examines what barriers to access and use exist in mobile banking applications and for whom. The examples above illustrate how the shift to platformised banking places new responsibilities on users, and how this shift is experienced unevenly. For those who cannot easily meet the expectations embedded in platformised systems, barriers that appear minor for others could accumulate into withdrawal from or non-use of banking services. This highlights how exclusion is not

always the result of explicit restriction, but can emerge through the everyday operation of platformised banking systems, a point that connects to the broader question of how socially inclusive solutions are currently designed and communicated (Research question 3).

Drawing on the walkthrough findings (see *Section 5.3*) and both expert and user banking experiences, this section argues that the inaccessibility of banking services does not necessarily stem from a lack of available services for users. Rather, the services may exist and be advertised as 'open for all' but remain inaccessible to users. While there may not be explicit exclusions preventing access, inaccessibility emerges in practice when the assumptions embedded in platformised banking intersect with users' differing circumstances. These include age, residency status, and varying levels of digital and financial literacy. Even though banks officially categorise users only in broad terms, such as high-net-worth clients versus 'people who need more attention', the effects of these systems are unevenly distributed and can lead to withdrawal or non-use. These barriers go beyond individual difficulties to a wider systematic issue in accessing and using banking services and cause user resistance to services and withdrawal from banking. It reinforces the digital and financial divides, persistent social exclusion, and creates new forms of exclusion.

Responding to experts' claims about various service education events being held in local branches of pillar banks, U-F2 (2024), who is originally from a post-Soviet country that had not yet joined the EU[44] at the time she migrated to Ireland, states:

> 'No, I've not heard about them. […] Would you have known [about these events] if you are not doing this [research]?'

The question from U-F2 suggests that a larger scale investigation into barriers to banking use in Ireland would be useful, but this was not feasible to do in the timeframe of this PhD. However, it is possible to examine how these events are communicated to users. A thorough review of the BOI website and social media revealed minimal information about the specific type of events mentioned by M1. This finding indicates that, as these events are unique to local branches and organised locally by individual bank managers, they may not be advertised through centralised communication

[44] This country joined the EU in 2004.

channels such as post, email, SMS, or the bank's official social media. They may instead be promoted through independent social media channels of particular branches, such as BOI Tallaght on X, as well as offline channels like posters in bank branches. This means that the advertisement of these events may not be as effective as claimed. They may only be accessible to users who actively seek out such information, which does not equate to reaching the entire user base.

Additionally, U-C1 (2025) responded to questions on communication from the bank. They explained that aside from essential banking functions, such as receiving a new card or ordering a bank statement, they would not be aware of any communication from the bank in a timely manner.

> 'I use Gmail and if my bank sends me anything other than, say, a bank statement I ordered, I won't see them. Not like I don't want to check them or something but there is a folder where all ads go in Gmail, which automatically sorts my emails for me, so I don't get spams, even for like, a brand I have ordered from, or even like I have subscribed to their newsletter. It is not a junk folder but different, like maybe a muted folder and I will only go there if I am expecting an email but not receiving it then I might go there to check.' (U-C1, 2025)

As a result, a similar question arose regarding how automated communication through non-human agents (see *Section 3.3*) and digital media (see *Subsection 5.2.4*) had changed in current banking services. Digitalisation has restructured how communication is managed across banking services. Even where in-person services remain, the primary ways of directing users, providing guidance, and signalling available support now operate through digital channels. Under GDPR, users must opt in to receive certain forms of communication. Those who do not opt in may therefore miss guidance or updates that are distributed digitally. This means that banking activities remain available in physical branches, where selected services are offered by a real person—such as a bank teller or adviser—while other functions have shifted to machines with the option for human assistance. However, communication from banks, including from physical branches, has become primarily online, operating in a broadcast manner to users. This does not mean that information is 'broadcast' to users in the literal sense—i.e., via mass media transmission through television and radio (Kerr, forthcoming!)—but rather in a metaphorical sense. In this view, the dynamics between information producers (e.g.,

banks) and audiences (e.g., users) imply that users must actively seek out the information through the appropriate channel. This perspective emphasises that an active effort, along with the knowledge and willingness to access the appropriate channel, is essential. Without either of these essential conditions, users cannot obtain certain information, for example, advertisements for educational events organised by local branches (M1, 2024). Thus, while certain information may seem broadly available because there are no explicit access restrictions, actual access is contingent upon the action of users.

The overlooked users' willingness, skills, and effort to seek information corresponded with expert responses on what solutions they would implement to help people who struggle to adapt to the socio-technical changes in banking services. D2, as a developer of the mobile banking app, with lack of awareness of any 'ideal user' profiles, claims that:

> The barriers are not by design but occur with each individual use of the apps, which we cannot, as one team and one person, anticipate. So, really, I am not here to prove that we have a perfectly inclusive service for every single individual, but if this is what you meant by inclusive, then nothing is. […] So, will there be people having problems? Yes, always, but do we wish for them to have problems? No. […] However, it is a multifaceted issue, so, education, income, age, all the things you have asked me. But this is not the bank's job.' (D2, 2024)

D2 emphasises that the barriers are neither anticipated nor designed—in that while potential barriers could occur, they are not intended by the bank—and therefore the design of banking services is inclusive. This highlights a gap between the intended use of technology and its actual use by users. Moreover, some experts do not view users' lack of willingness or trust as the bank's responsibility to resolve, but rather as an individual choice made by users and thus a matter of user responsibility.

> 'If a person does not want to use it, we can't just force them. It is their choice.' (M2, 2024)

This section argues that, by framing users' lack of interest in using a banking service as an individual choice, it overlooks that users encounter banking technologies under different conditions. In this context, the digital divide refers not to access to devices (see *Chapter 3*), since all interviewees owned smartphones, but to second-, third-, and fourth-level or second-order divides (van Dijk, 2017; Hargittai, 2021), which concern differences in digital and financial literacy, confidence, and the availability of support when difficulties arise. While D2's insight acknowledges that varied experiences with banking services form a multifaceted social issue that cannot be resolved by banks alone, the experts interviewed in this study did not describe organisational efforts to actively research these issues or to establish dedicated support teams for users who face difficulties accessing and using services. Instead (see *Section 5.3*), responsibility for learning and adapting to digital banking is often framed as resting with the user. For example, providing the educational sessions are considered as the bank's responsibility, but they require users to be proactive in attending. This not only requires willingness and action on the part of users, but also that they receive the relevant information at the right time. The tasks and responsibilities that users are required to perform within banking apps are mirrored in in-person settings, where users are similarly expected to identify the appropriate service route, explain the issue clearly, and initiate the solution themselves.

The analysis above demonstrates that exclusion does not arise solely from technical difficulty or unfamiliarity with digital systems. Rather, it reflects the imaginaries embedded in the design and organisation of banking services. As discussed in *Chapters 5* and *6*, contemporary banking is shaped by three interrelated imaginaries: institutional imaginaries that define who counts as a legitimate banking subject; transactional imaginaries that presume stable income flows and predictable financial practices; and digital imaginaries that position app-based interaction as the norm? and desirable. These imaginaries converge in the construction of the 'ideal user', whose identity, financial status, and digital competence align with the expectations built into platformised banking systems. Therefore, this subsection, aligning with the expanded definition of 'users' in contemporary banking, proposes that online banking and in-person banking should be viewed as a continuum. While they may operate independently—with separate teams and different operational modes—they are influenced by each other. Users are now often told they can perform tasks via apps or self-service machines in branches. Although advisors may still assist users in physical

branches when they use online services, this approach normalises diverting users from in-person service to app-based and machine-mediated services.

Conclusion

Drawing on empirical findings from all three phases of fieldwork, this chapter argues that we need to redefine 'user' in contemporary banking in Ireland,, as people who engage with banking service in both online and in-person channels. It discusses the conceptualisation and categorisation of users and argues that users are people who use banking services, including in-person bank customers. It extends the definition of users beyond app-specific interactions to encompass a broader spectrum of banking engagements. This reflects how in-person banking has been reshaped under digital transformation and now forms part of a unified, platformised banking ecosystem. This chapter argues that exclusion in platformised banking is not produced through explicit denial of service, but through the everyday redistribution of tasks and responsibilities onto users. Tasks that were previously supported or carried out by banking staff, such as authentication, problem identification, and documentation, are now delegated to users themselves (also discussed in *Chapter 5* with app designs). For individuals who align with the ideal user profile, these shifts are manageable inconveniences. For those who do not, including users who are over the age of 65 and people in temporary or precarious residency circumstances (as listed in *Table 4-8* and *Table 7-1*), these tasks can become barriers that interrupt access, lead to stalled applications, or result in withdrawal from banking services altogether. Exclusion, in this sense, is generated through ordinary service processes and digital gates rather than through direct refusal.

Drawing on both expert and user interviews, the chapter demonstrates that the current digital shift in banking reshapes the roles and responsibilities of users. The analysis underscores how technological affordances and constraints influence user experience, access and social inclusion. The barriers encountered by interviewees reflect the institutional, transactional and digital imaginaries discussed in *Chapter 5*. Institutional imaginaries surface in KYC and residency documentation requirements. Transactional imaginaries are reflected in peer-to-peer quick and easy transfer features that presume shared app infrastructures and bank of choice. And digital imaginaries are shown in biometric verification and automated fraud detection systems. Across these examples, responsabilisation operates as the process through which design shifts tasks

and responsibilities onto users in uneven ways, placing marginalised users at greater risk of exclusion.

This chapter highlights how barriers experienced by older users over the age 65, recent migrants and those with lower levels of digital literacy could become persistent forms of social exclusion. It also reveals that banks continue to operate with a simple division of users into ‘people who need more attention’ and high-net-worth users, limiting the development of targeted support. Finally, it shows that some users understand the use of behavioural data as a trade-off for heightened financial protection. Overall, the chapter suggests that more proactive approaches to supporting users across different circumstances are required to promote socially inclusive banking in Ireland.

Chapter 8 Conclusion

Introduction

Chapter 8 brings together the theoretical and empirical contributions of the thesis and discusses the collective findings of the three phases of fieldwork. The separate discussion of phased findings (in *Chapters 5, 6* and *7*) allows for them to be explored in depth, but follows a linear progression over time. This chapter specifies how the thesis answers the research questions and the overall contributions of the thesis. As introduced in *Chapter 1* and reiterated in *Chapter 4*, the research questions of this thesis are:

1. What dominant social imaginaries of money, payment, and banking service are represented in the design of mobile banking applications in Ireland?
2. What barriers to access and use exist in mobile banking applications and for whom? Do they vary by user group?
3. Are there policies, strategies, or solutions in place to make banking services more socially inclusive in Ireland?

This chapter provides an integrated discussion of the empirical and theoretical insights developed throughout the thesis. *Section 8.1* synthesises four key findings, connecting the three research phases and highlighting how platformisation reshapes institutional, technological, and user practices. It addresses the role of the regulatory framework governing banking apps as sectoral platforms (see *Chapter 3* and *Chapter 5*), and the reclassification of banks (see *Section 6.1*). *Section 8.2* outlines the methodological contributions, focusing on the modified walkthrough method and its adaptation for secure and regulated app environments. *Section 8.3* presents the theoretical contributions to economic sociology and the sociology of technology, emphasising the conceptual link between social imaginaries, platformisation, and responsibilisation. *Section 8.4* considers implications for future research and policy, identifying directions for further investigation into the evolving relationship between regulation, technology, and social inclusion. Finally, *Section 8.5* offers concluding remarks, reflecting on the significance of this research for understanding the changing role of banking in a platform society.

As money is an evolving subject, payment methods and banking services evolve with it. As Schumpeter (1994, p.289) observes 'there is no denying that views on money are as difficult to describe as are shifting clouds'. This thesis understands money and banking as continually evolving technologies and argues that the social understanding, meanings and imaginaries of money and banking also evolve, while never becoming completely detached from their origins and past. This makes this thesis a bridge connecting established theorisations to future research, and between classical sociological theories of money and contemporary analyses of digital and platformised finance.

8.1 Findings of the Empirical Research

This section synthesises the core findings emerging from the fieldwork of *Phase 1* (*Platform* by app walkthrough*), Phase 2* (*Industry* through expert interviews) and *Phase 3* (*Users* through interviews). There are four key findings in this thesis. The first finding is the identification of three dominant social imaginaries in digital banking. These imaginaries are reflected in the designs of the sampled apps as identified in the walkthroughs. This also references the design of digital banking and payment services that are not included in the empirical studies as they are either not fully operated as an app (for example, the SWIFT[45] and the IBAN systems[46]) or they are not widely used in Ireland (for example, WeChat Pay, AliPay and M-Pesa). Although there is no walkthrough of these secondary examples, they are cited to support the imaginaries, drawing on existing literature where their designs have been studied and discussed. While this PhD focuses on digital banking services in Ireland, this implies the three imaginaries may be of value to those studying digital banking services in other markets. The three imaginaries are:

1. *The Institutional Imaginary*: This social imaginary of payment is rooted in the understanding that money is a state-made artefact for the ruling class (Knapp, Lucas and Bonar, 1973). It is therefore always associated with state regulation and control and emphasises a broader macro meaning of payment activities and a design that favours this. Both traditional pillar banks, for example BOI 365,

[45] Society for Worldwide Interbank Financial Telecommunication
[46] International Bank Account Number

and emerging challenger services such as An Post Money, reflect this imaginary by aligning themselves with familiar state institutions. National currencies are evident in their design choices, such as the inclusion of national symbols. They are also highly regulated, issued and controlled by the state. Further, the euro coins have a harp on one side to signify that they are Irish . This imaginary, continues the legacy suggested by the *State Theories* of money.The use of familiar political and cultural symbols by modern currencies and digital banking services connotes trustworthiness and stability.

2. *The Transactional Imaginary*: This imaginary suggests that the understanding of money as a social medium for all forms of social exchange, exemplified by the *Tribute Theory* of money persists. Recalling Simmel's (2011) view that money is the 'purest tool' suitable for both personal and professional exchanges regardless of the message or feeling it may convey, the *Transactional Imaginary* conceptualises money as the bearer of value and information. As a result, payment activities are a form of communication between individuals (for example, splitting bills, gifting, and debt) and between businesses (for example, purchases, refunds, and invoices). This imaginary is reflected in the design of mobile banking apps that emphasise the convenience of communication in payment exchanges, for example, in Revolut. It is also observed in non-banking digital payment services, such as WeChat Pay and M-Pesa. Additionally, the design of Revolut, with its increasing level of state regulation and switching to an Irish IBAN (IE), could be understood as the convergence of the *Institutional* and *Transactional* imaginaries.
3. *The Digital Imaginary*: This imaginary envisions technology as both the medium and solution for the future of banking. It emphasises automation, predictive analytics, and seamless user experience, positioning technological innovation as the key to progress. The Digital Imaginary promotes the idea that data-driven infrastructures can deliver speed, security, and personalisation while reducing human intervention. In practice, however, this imaginary produces a paradox that services become more efficient yet increasingly dependent on continuous data extraction, algorithmic oversight and user tasks. Although none of the sampled apps fully realises this imaginary, certain investment features in neobanks and buy-now-pay-later services illustrate how elements of this imaginary can shape design choices and user experience. Non-banking services

such as Apple Pay and Google Pay also reflect this imaginary through encryption-based transactions and predictive automation that promise both privacy and convenience. Revolut incorporates aspects of the *Digital Imaginary* in features such as automated saving, instant credit scoring, and its external payment service, Revolut Pay, which mirrors Apple Pay by allowing purchases without manual card entry. The design of central bank digital currencies (CBDCs) provides a parallel development. By combining decentralised technology but registered and regulated by state central banks , they embody a convergence between the *Institutional* and *Digital imaginaries*, resulting in a state-regulated yet fully surveilled form of digital money.

This convergence is not limited to financial technology innovations. Pillar and national banks are increasingly adopting features associated with the *Transactional* and *Digital imaginaries*, such as peer-to-peer transfers, app-based notifications, and biometric authentication to modernise their services and sustain user trust. At the same time neobanks such as Revolut are incorporating institutional markers, including Irish IBANs (IE), licensing references, and national regulatory language, to project stability and legitimacy as in the *Institutional Imaginary*. These tendencies demonstrate that the *Institutional*, *Transactional*, and *Digital* imaginaries are not separate but mutually reinforcing, shaping a hybrid model of platformised banking in Ireland that blends state authority, interpersonal exchange, and use of digital and platform technology.

The second core finding is the reclassification of banks as pillar banks (with national banks treated as a subcategory of domestic pillar banks in Ireland), neobanks, and novelty banks. This reclassification fits particularly well with the Irish retail banking landscape, which has few international banks, local credit-union–style institutions that are transitioning into formal banking functions (categorised in Chapter 6 as novelty banks), and a growing market for digitally native, app-based neobanks. This finding combines industry expert language with media vocabulary and legacy banking terminology, and adapts them to the post-colonial and platformised context of banking in Ireland. The thesis determines that the banking sector in Ireland is undergoing a dual transformation for both service providers and users. *Chapter 6* clarifies the definitions of pillar banks and neobanks, two commonly used terms by academics, industry experts, advertisers and, sometimes, users. Pillar banks are defined as long-established, fully licensed financial institutions with large customer bases that

provide both commercial and retail services. Neobanks are defined as digital-native and digital-only retail banking services, licensed by an EU regulatory body, with some expanding to include business accounts. Commonly, neobanks function as technology companies and resemble FinTech products. In the Irish context, national banks are a subset of pillar banks with strong ties in terms of ownership, history and cultural identity with the state. For example, the Bank of Ireland (BOI), although now privately owned, was once state-owned after the 2008 financial crash and, through its name, evokes a strong national identity. Therefore, BOI is considered a national bank, as well as being a pillar bank. Similarly, neobanks and challenger banks are both terms currently used to category banks in the banking sector. This new classification clarifies neobanks as one of three main types of challenger banks in the Irish context (see *Section 6.1* for details). It argues, since 2014 and the launch of SBUK, neobanks have emerged and have become an increasingly major subset of challenger banks.

The reclassification of banks cannot be separated from the regulatory frameworks that shape and constrain them. In the Irish context this refers to national, EU and international, especially SWIFT frameworks. Pillar banks remain tied to long-established licensing regimes, prudential supervision, and recapitalisation requirements introduced after the 2008 financial crisis. Neobanks, by contrast, depend on EU passporting arrangements and regulatory recognition as digital-only institutions, which not only permit their entry into the Irish market but also limit their scope of operation through strict KYC and Anti-money laundering (AML) compliance requirements. The case of An Post Money illustrates how regulation can produce ambiguities. Although marketed as a challenger bank, An Post's partial state ownership and reliance on existing regulatory infrastructures blur its classification. Thus, regulatory frameworks are not simply background conditions but active forces in defining what constitutes a pillar bank, a neobank, or an 'undefined' bank in contemporary Ireland.

This thesis offers a classification that allows for future developments and acknowledges the complexities of contemporary challenger banks in the digital context. It introduces a third category, novelty banks, to describe institutions that share features of both pillar and neobanks but do not fit neatly into either. For example, An Post Money combines the national symbolism and community reach of a state-affiliated institution with the regulatory structure and innovation profile of a challenger bank. The term novelty bank captures these hybrid arrangements, where state affiliation, licensing

conditions, and technological experimentation intersect. This classification emphasises that banks should be understood not through rigid typologies but in relation to the cultural, economic, and regulatory contexts in which they operate. In this way, novelty banks illustrate how institutional heritage and digital innovation can coexist within Ireland's evolving banking landscape.

Alongside a new classification of banks, this thesis offers a renewed conceptualisation of users in banking. The third core finding is the reconceptualisation of banking users in contemporary Ireland. This provides a new way of understanding the banking industry, carefully adapted to the Irish context by acknowledging the historical legacies of colonisation and financial crises, as well as new challenges associated with digital transformation and migration. Rather than describing a single digital divide, this thesis recognises multiple levels of difference in digital access, skills, and outcomes that shape how people engage with banking technologies. Digital banking services are therefore not entirely new but represent the gradual evolution of banking through three overlapping phases: (a) digitisation, referring to the conversion of existing records and processes into digital form, (b) digitalisation, referring to the reorganisation of services and infrastructures around digital systems; and (c) platformisation, referring to the restructuring of banking around data-driven, app-based, and interconnected service models. This layered transformation is especially visible on banking platforms in the past decade, following the launch of the first neobank, Starling Bank UK (SBUK), which marked the transition to fully platformised banking.

By bridging insights from experts and users, this thesis argues for an expansion of the 'user' terminology as the boundaries between bank customers and app users become increasingly blurred. Users engage with banking services across multiple channels, including physical branches, mobile apps and other channels such as the telephone and websites. This thesis reconceptualises users as people who use banking services and highlights the oversimplified user categorisation employed by the banking industry (see *Chapter 7*). Current classifications of users overlook the diversity and complexity of barriers to access and use for some, grouping all users who experience difficulties with their chosen banking service as 'people who need more attention'.

The fourth core finding is the overall responsibilisation of users by the banking industry, exemplified by the design of mobile banking apps in *Phase 1* and reinforced by expert insights in *Phase 2*. This shift places increasing demands on users to carry out tasks within automated banking processes that were previously performed by banking

staff. Users are not trained to undertake this work, and their capacity to do so depends heavily on their own digital and financial literacy, which varies according to personal demographics and professional background. In practice, responsibility and risk are transferred to users, producing new forms of exclusion and inequality for those with limited skills or unstable access conditions. In *Phase 2* drawing on insight from bank managers, the data suggests that banking services, while seemingly accessible, are not fully utilised by those who need them most, i.e., 'people who need more attention'. The responsibilisation of users describes a process in which individuals are expected to identify and understand the barriers that disadvantage them and to seek the appropriate assistance both in digital and in-person banking contexts. Furthermore, users are held accountable for tasks such as authentication, verification, and communication with banks, reflecting the dynamics of platformisation in which infrastructural and operational responsibilities are increasingly transferred from institutions to individuals (van Dijck, Poell and de Waal, 2018). *Chapter 5* offers an initial conceptualisation of user labour within mobile banking apps in Ireland. It highlights how users must perform various tasks that go beyond standard usage, including authentication, opting out, interacting with chatbot-mediated customer service, and managing referrals. It also identifies tasks embedded in navigating lengthy Terms and Conditions documents—often presented as multi-page PDFs written in specialised legal and technical language—which require users to interpret contractual obligations without assistance. The role of regulatory frameworks in the reclassification of banks is also closely connected to how compliance is operationalised at the user interface. The walkthrough of Terms and Conditions (T&Cs) documents revealed that regulatory compliance is translated into extensive user agreements, shifting interpretive and evidentiary burdens onto individual users. Long and technical T&C texts, often exceeding the average user's comprehension, transform legal and institutional obligations into matters of individual consent. This demonstrates how regulatory design, intended to ensure transparency and protection, could paradoxically extend the process of responsibilisation by making users accountable for understanding and accepting complex institutional requirements. These additional responsibilities impose risks and demand informed consent, effectively turning users into de facto promoters and administrators of banking services without the requisite professional training.

Across the findings, responsibilisation emerges as a defining process of platformised banking. Platform infrastructures enable the redistribution of tasks and

decision-making from institutions to users, normalising individual responsibility for actions that were once handled by professional or institutional agents. This process is consistent with broader neoliberal rationalities that valorise autonomy, efficiency, and self-management. In the context of digital banking, these rationalities are materialised in app design and regulation, which expect users to monitor their own security, interpret contractual obligations, and resolve service issues through automated channels. Thus, responsibilisation functions both as a design logic within platformisation and as a wider socio-political tendency that individualises structural risks.

Findings also highlight the impact of oversimplified user categorisation by banks which force individuals to troubleshoot their own difficulties and to self-navigate towards the appropriate support. While this expectation works for some proactive and digitally literate users, it risks polarising experiences of those who actively seek help. Users with higher digital skills and confidence tend to receive better support, while those with lower levels of digital and financial literacy are more likely to be overlooked. Such disparities could lead to the second group of users losing trust or initiative for accessing and using banking services. Some users may come to believe that they are no longer considered worthy of full support. As a result, these users are left to cope with restricted access and limited functionality of services they once accessed and used more effectively.

These findings demonstrate that digital banking technologies, while resolving issues of convenience and security, also exacerbate existing inequalities and create new ones. Evidence from the user interviews revealed that users over the age of 65 and recent migrants—both EU and non-EU nationals —frequently encountered difficulties with multi-factor authentication and verification processes. These procedures placed additional burdens on users with lower levels of digital literacy and those holding temporary or short-term residence visas, who often faced extra layers of identity checks and documentation requirements. This expands broader scholarship on the digital divide (van Dijk, 2017; Hargittai, 2022), showing that access to technology alone does not ensure equitable participation. Rather than a single divide, inequalities unfold across multiple levels: the first-level divide concerns access to devices and connectivity; the second-level divide refers to disparities in digital and informational skills; and the third-level divide captures differences in the social and economic outcomes that follow from use. Within this framework, platformisation and responsibilisation processes further individualise these inequalities by shifting accountability onto users and

compelling them to self-manage barriers that are structurally embedded in platform design. Such dynamics indicate that digitalisation and platformisation do not produce uniform benefits but instead intensify uneven outcomes along lines of age, migration status, and socio-economic position.

These four core findings answer the three main research questions. They highlight the social meanings of the digital transformation in the banking sector in Ireland in relation to social inclusion and exclusion. The digitalisation of banking services has entered a platformisation era in which the design of mobile banking apps reflects and shapes the social imaginaries of money, payment, and banking. Banking platforms (i.e. mobile banking apps) have expanded their influence beyond the app itself to encompass in-person and other digital services, such as telephone banking, and to integrate with a wider digital infrastructure of third-party providers, data processors, and networked financial technologies that support everyday transactions. Digital technology reshapes the banking industry, the users of the services, and academic knowledge of it. These findings converge to show that digital technology is being introduced as a solution to existing issues including for example, security concerns, financial record keeping, and inaccessibility of physical branches in less connected areas. However, digital technology, while on some level solving these issues, enhances existing gender, ethnic and income inequalities in the financial system and also introduces new digital barriers. This means that digital banking technology has mixed outcomes (or impacts) for people with different levels of digital and financial literacy and has also become the cause of inaccessibility. For users who do not conform to the 'ideal user', namely, migrants and some older users, they experience different outcomes from the advertised service. In these cases, the 'solutions' become emergent barriers, reinforcing legacy exclusions and new challenges. Together, they result in persistent and emerging forms of social exclusion. This requires a new way to understand banking services in Ireland, as proposed above, and suggests there is a need to design more socially inclusive services in the future.

8.2 Methodological Novelty

The first methodological novelty is the modification of the app walkthrough method. The original walkthrough method was modified to account for studying a different type of app (e.g., dating apps and social media apps) Banking apps require higher security

and legal vetting and did not allow the researcher to establish a separate persona other than her own identity. As a non-EU immigrant and a mature student, the researcher's identity is not considered to be a majority demographic in Ireland, which may hinder generalisability of the data collected based on the researcher's experiences with these apps. However, the researcher used a social constructivist ontology and experienced the barriers encountered based on her own non EU migrant identity which is not the ideal user envisaged by banking services in Ireland. This suits this thesis's objectives. Additionally, the 'user persona' in the original walkthrough method by Light, Burgess and Duguay (2018) was to accommodate the heavy user interaction and content presentation (for example, dating bios and preferences) of data apps and avoid the over exposure of the researcher, which is not an issue for banking apps. They do not involve much content creation and presentation. While chat functions are enabled for some of the apps studied, they are mostly supplementary to when payment exchanges occur, for example, sending a meme when sending, requesting and receiving a payment. Significant communication and interactions occur between human and non-human agents, or human and human customer service agents when seeking customer support. Therefore, the researcher modified the walkthrough to suit the unique challenges posed by banking apps. These modifications include adding dedicated steps for assessing multi-factor authentication, complex Terms and Conditions (T&Cs), additional security protocols and different usage patterns. This modified walkthrough could be used for future research on similar apps and serves as an example of how to modify the original walkthrough method to suit particular research subjects.

The second methodological novelty of this thesis lies in its three-phased fieldwork design, which integrates platform analysis using the modified walkthrough method (*Phase 1*), industry expertise with expert interviews (*Phase 2*), and the lived experiences of users (*Phase 3*). Each phase focuses on a different component of digital banking services and, when combined, produces a multi-perspective and triangulated account of how these services are designed, implemented and negotiated in practice. The inclusion of users in *Phase 3* is a critical part of this triangulation. Although the sample size is small and includes group interviews, it brings into view the experiences of older users and international students whose barriers could not be anticipated through the walkthrough alone or by banking experts. By connecting institutional design intentions with everyday practices, this mixed-method structure responds to the

evolving landscape of digital banking and provides an inclusive methodological framework for future research.

8.3 Contributions to Existing Literature

This thesis makes contributions to the subfields of sociology, particularly economic sociology, the sociology of technology, and the sociology of media, as well as to related literature on digital money and platform studies. It builds on and extends work by Knapp, Lucas and Bonar (1973), Menger, Bartholomew and Foley (2012), Simmel (2011), Dodd (2016), Zelizer (2017), O'Dwyer (2023), Lemieux and Dodd (2023), Swartz (2020), van Dijck, Poell and de Waal (2018). It builds a theoretical framework that coherently integrates the social construction of technology (SCOT) (Bijker, 2012) from STS with key media theories of media convergence (Jenkins, 2004; Jensen, 2022), platformisation (van Dijck, 2009; Poell, Nieborg and van Dijck, 2019), the digital divide (van Dijk, 2017), and social imaginaries (Mansell, 2012). The theoretical coherence of the thesis rests in its consistent integration of the social construction of technology (SCOT) with the concept of social imaginaries. The three dominant imaginaries identified empirically—the *Institutional*, *Transactional*, and *Digital*—are interpreted not in isolation but through this framework, which situates app design choices as products of both historical imaginaries of money and the co-construction of technology in practice. In SCOT terms, the institutional and technical forms of banking identified here represent partially stabilised artefacts, in which the meanings of money and service provision have become temporarily fixed through regulation, design, and user practice. However, the imaginaries that underpin these forms remain fluid. They are continually reinterpreted by designers, regulators, and users, reflecting ongoing negotiations over value, trust, and responsibility. This interplay between stabilisation and imagination explains how platformised banking can reproduce familiar institutional logics while simultaneously generating new uncertainties and exclusions. It demonstrates continuity between the classical theories discussed in *Chapter 2*, the conceptual refinements in *Chapter 3*, and the empirical analyses in *Chapters 5*, *6*, and *7*.

At its core, this thesis extends Simmel's (2011) conceptualisation of money into the contemporary digital and platform era, bringing classic economic sociology into dialogue with more recent developments in the sociology of money. It builds on Simmel's insight that money operates as both a social relation and a medium of

exchange, while incorporating later interpretations that emphasise institutional and relational dimensions (Ingham, 1996; Dodd, 2014; Fantacci, 2019; Zelizer, 2017). By situating these perspectives within the frameworks of the social construction of technology (SCOT) and social imaginaries, the thesis shows that contemporary digital banking is not a radical departure but an ongoing evolution of monetary mediation shaped by both historical continuities and new socio-technical configurations. At the same time, the analysis of platformisation and the digital imaginary brings new conceptual tools to the sociology of money, highlighting how digital infrastructures, data practices and platform logics reshape the ways monetary value, trust and institutional authority are mediated.

Three dominant social imaginaries of payment—the Institutional, Transactional, and Digital—are identified through the walkthrough of Irish mobile banking apps. While these imaginaries are not exhaustive of all possible interpretations, they are the most consistently reflected in design and user experience. Their articulation through SCOT highlights how app features are not neutral technical choices but embed broader imaginaries of money, authority, and communication. The analysis also clarifies the terminology of banks by differentiating between pillar banks and neobanks, identifying the 'undefined' category of hybrid cases, and demonstrating that regulatory frameworks are integral to these distinctions. The classification of banks is thus not only descriptive but also regulatory, reflecting EU licensing regimes, post-crisis recapitalisation policies, and evolving compliance standards.

The thesis further refines the definition of 'users' by drawing on the co-construction process discussed in SCOT (Oudshoorn and Pinch, 2005). It highlights that the boundaries between bank customers and app users are increasingly blurred in a platformised environment. Rather than acting as co-creators of technology, users contribute to the stabilisation and reinterpretation of banking services through their everyday interactions with digital platforms. Their ways of adopting, adapting to, or working around system constraints reveal how social meanings and technological affordances evolve together. Within this process, users are not passive recipients but active participants in sustaining and negotiating the social and technical expectations embedded in banking systems, even as they become subjects of responsibilisation. This reconceptualisation of users demonstrates how inequalities are reproduced: migrants and older users, for example, face additional barriers in authentication and verification processes, reflecting both the digital divide (van Dijk, 2017; Hargittai, 2022) and

institutional expectations of the 'ideal user'. Overall, the thesis views money, payment and banking as social institutions (Simmel, 2011; Ingham, 1996) and contributes to understanding the social meanings of money and banking in the platform society. It argues that, as money is a social institution, banking is a critical social service that should be designed inclusively for public access and use. In relation to the third research question, the findings reveal that while policies and initiatives promoting social inclusion in banking do exist—such as branch-based educational events and accessibility measures—they are limited in scope and effectiveness. These initiatives are often implemented unevenly across institutions and communicated poorly to potential participants, particularly those most affected by digital exclusion. The absence of coordinated national strategies by banking experts means that inclusion is treated as an optional, locally managed responsibility rather than a structural priority. Consequently, existing measures tend to reinforce responsibilisation by expecting users to seek out information and adapt individually, rather than addressing systemic barriers through regulatory or institutional reform.

Finally, this thesis identifies less acknowledged and less visible forms of barriers experienced by people with novel and irregular legal, residency and income statuses. These situations are increasingly common given rising global mobility, international migration (for both workers and students) and the growth of gig work. While many of these individuals are legally and financially eligible to access banking services, and some possess intermediate to high levels of digital or financial literacy, they nonetheless encounter difficulties because they cannot supply the standardised, machine-recognisable documentation required by platformised and automated banking systems. These findings extend existing work on digital divides by showing that exclusion does not only arise from first-level divides in access or second-level divides in skills and competencies (Hargittai, 2021; van Dijk, 2019). Instead, they point to an emerging and novel form of divide that operates at the intersection of digital, financial and bureaucratic infrastructures, where barriers are produced by institutional expectations rather than by users' capacities (also see *3.2*). While this thesis includes all forms of 'non-ideal users' and retains a focus on adults over the age of 65, it also demonstrates how seemingly 'ideal' users who are digitally and financially literate may still be marginalised when their identification and documentation do not align with automated verification systems. In doing so, the thesis adds nuance to existing

categories of access and exclusion by identifying new mechanisms through which platformised banking produces inequality.

In Ireland, this is particularly salient because the country has not yet established a national identity card system for its citizens, unlike most EU member states that issue the EU ID card. The only universally recognised legal ID remains the passport. Immigrants are additionally required to present their Irish Residence Permit (IRP) as part of identity verification, despite the card being clearly marked as not a legal form of ID. A similar inconsistency affects Public Services Card (PSC) holders whose primary income comes from social welfare payments: they are required to provide PSC card details for verification, even though the PSC is not recognised as a legal form of identification. These practices create confusion for users and produce unequal treatment among citizens, non-citizens and people who rely on public funds, the latter two groups already being potentially vulnerable. This pattern echoes concerns raised in data-justice research (Dencik and Sanchez-Monedero, 2022), which shows that new digital systems are often trialled first on marginalised populations before being extended to the wider public. It raises important questions for future research on similar issues in other jurisdictions and on access barriers across other essential public services such as healthcare.

8.4 Future Research

This thesis, while offering rich findings that contribute both theoretically and methodologically to existing knowledge, also provides a foundation for future investigations. First, future research could benefit from an additional phase of large-scale user experience (UX) research, perhaps employing a quantitative approach with the survey method to reach a larger sample of participants. This would add an extra layer to the existing qualitative user research that captures the nuances and depth of lived experiences for a small number of highly specific users and lead to the identification of more generalisable patterns. Second, as money and banking are constantly evolving and innovative designs emerge rapidly, the digital money and banking studies landscape changes constantly. Even with the same apps, continuous development may lead to modifications in design and functionality, affecting user adaptations and service regulations. Future research could examine these ongoing developments, recognising that some apps may cease to exist while new ones emerge.

As mentioned above, this thesis also highlights a novel form of barrier arising from non-standard documentation, including irregular sources of income and residency status. This calls for further research into how documentation regimes and identification infrastructures operate in contemporary, highly globalised contexts, and how they affect precarious workers whose employment arrangements fall outside the standard forms recognised by the financial sector, both in Ireland and internationally. Finally, the focus of this PhD is on the design of mobile banking apps in Ireland. This thesis emphasises the influence of platformisation. It was timely to investigate digital platforms as a new technology when this PhD began in 2020. Now, in 2025, looking forward, the use of artificial intelligence (AI) has become increasingly evident in banking services and may raise further barriers to access. A new study on AI in banking in Ireland has been proposed by the researcher and will investigate the adoption, design and use of AI in digital banking services.

8.5 Concluding Remarks

In conclusion, this thesis draws on theories from sociology and in particular the sub-fields of economic sociology, technology studies, and media studies, to understand contemporary money and banking as social institutions. It presents a theoretical framework that accounts for the shifting designs and forms of money and banking while identifying the fundamental characteristics of money that connect and mediate between people, organisations, and social activities. The empirical findings of this thesis map the different phases of digital transformation in banking from digitisation to digitalisation, and to platformisation, and identify three three social imaginaries: the *Institutional*, *Transactional*, and *Digital* imaginaries. This thesis proposes a reclassification of contemporary banks and a re-conceptualisation of users based on examples from Ireland. The thesis reconceptualises users by demonstrating how the boundaries between bank customers and app users are increasingly blurred in a platformised environment. It defines the labour, responsibilities, and risks imposed on users and theorises the responsibilisation of users as a core dynamic of digital banking. This contributes to a deeper understanding of how inequalities are reproduced, with institutional expectations of the ‘ideal user’ creating uneven access and outcomes across age, migration status, and socio-economic position.

Methodologically, the three-phased design provides insights into the multifaceted reality of digital banking services and enriches the analysis by incorporating subjective findings on app design, expert insights from the banking industry, and the lived experiences of select users. By returning to the concept of social imaginaries, the thesis shows that platformised banking is best understood as a continuation of long-standing debates in economic sociology rather than a radical break. It reinforces Simmel's insight that money functions as a social institution while extending this perspective into the platform era.

In short, the findings collectively reaffirm the enduring role of the state in shaping the digital transformation of banking. While platformisation has introduced new infrastructures and redistributed tasks to users, it remains deeply entangled with state-based systems of identification, regulation, and oversight. The walkthrough findings point to the growing importance of identification processes—documents, biometrics, and proof-of-residency requirements—which now anchor access to both pillar and digital-only banks. These requirements, embedded in Terms and Conditions and compliance procedures, illustrate how regulation is enacted through user verification rather than institutional mediation. At the same time, pillar banks continue to expand their digital infrastructures, and some neobanks, such as Revolut, are becoming increasingly embedded in national systems through Irish IBAN registration and EU regulatory alignment. For non-EU users, however, visa restrictions and documentation regimes continue to produce exclusionary effects, revealing that access to banking remains unevenly distributed along legal and geopolitical lines. Taken together, these dynamics demonstrate that platformised banking does not replace state authority but reconfigures it, embedding regulatory power within digital infrastructures and the everyday practices of users.

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Bank Terms and Conditions Documents

An Post Money: Terms & Conditions for An Post Money Current Accounts

Bank of Ireland: Terms and Conditions for General Personal Current Account, Golden Years Current Account, Third Level Student Current Account, Graduate Current Account Debit Card

Chase UK: General Account Terms and Conditions

Klarna: User Terms for Klarna's Shopping Service

N26: General Terms and Conditions 'N26 current account'

Revolut IE: Terms and Conditions

Starling Bank UK: Current Account Terms and Conditions General Part

Appendices

Appendix 1 Sample Consent Form

Consent Form

I……agree to participate in **Yuening Li's** research study titled the Changing Medium of Money: Towards Socially Inclusive and Sustainable Design of FinTech Platform for All.

Please tick each statement below:

The purpose and nature of the study has been explained to me verbally & in writing. I've been able to ask questions, which were answered satisfactorily.
☐

I am participating voluntarily.
☐

I give permission for my interview and/or participation in a focus group study with Yuening Li to be audio recorded
☐

I understand that I can withdraw from the study, without repercussions, at any time, whether that is before it starts or while I am participating.
☐

I understand that I can withdraw permission to use the data right up to the submission of thesis proposed in October 2024.
☐

It has been explained to me how my data will be managed and that I may access it on request. ☐

I understand the limits of confidentiality as described in the information sheet
☐

I understand that my data, in an anonymous format, may be used in further research projects and any subsequent publications

☐

if I give permission below:

I agree to quotation/publication of extracts from my interview

☐

I do not agree to quotation/publication of extracts from my interview

☐

I agree for my data to be used for further research projects

☐

I do not agree for my data to be used for further research projects

☐

Signed…….

Date…….

Participant Name in block capitals ……...

I the undersigned have taken the time to fully explain to the above participant the nature and purpose of this study in a manner that they could understand. I have explained the risks involved as well as the possible benefits. I have invited them to ask questions on any aspect of the study that concerned them.

Signed…….

Date…….

Researcher Name in block capitals ……...

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the Maynooth University Ethics Committee at research.ethics@mu.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner.

For your information the Data Controller for this research project is Maynooth University, Maynooth, Co. Kildare. Maynooth University Data Protection officer is Ann McKeon in Humanity house, room 17, who can be contacted at dataprotection@mu.ie. Maynooth University Data Privacy policies can be found at https://www.maynoothuniversity.ie/data-protection.

Two copies to be made: 1 for participant, 1 for PI

Appendix 2 *Phase 2* Information Sheet

INFORMATION SHEET FOR RESEARCH PARTICIPANTS

Purpose of the Study: I am Yuening Li, a PhD candidate in the Sociology Department at Maynooth University. My research, supervised by Prof. Aphra Kerr, is a part of the requirements for a PhD in Sociology. This project is funded by ***Science Foundation Ireland through the Centre for Research Training in Advanced Networks for Sustainable Societies.*** The focus of my study is on the digitalisation and platformisation of money, payment systems, banking, and other financial technology services in Ireland. In simpler terms, this research aims to understand the experiences of people in Ireland when using digital banking platforms.

What will the study involve? This study will conduct expert interviews to gain insights from professionals in digital finance. These experts, chosen for their varied experiences within the industry pipeline, will share their perspectives on mobile banking apps available in Ireland. The findings from these expert interviews will inform the subsequent phase of user interviews. This will encompass discussions with both active users and 'non-users' of mobile banking apps. 'Non-users' refer to individuals who choose not to use these apps. The focus of these discussions will be on their perceptions of mobile banking, particularly when compared to traditional, in-person banking services. The aim of these interviews is to explore in greater depth the personal experiences of individuals with the changing banking landscape in Ireland and to collect their views on potential improvements or changes in the sector.

Who has approved this study? This study has undergone review and has received ethical approval from the Maynooth University Research Ethics Committee. Upon request, you can be provided with a copy of this approval.

Why have you been asked to take part? You have been selected to participate in the expert interviews for your expertise and experience in the finance and banking industry in Ireland.

Do you have to take part? Please be assured that you are under no obligation to participate in this research. Your involvement is entirely voluntary, and it is completely your decision whether or not to take part.

Should you choose to participate, you will be required to sign a consent form. A copy of this form, along with an information sheet, will be provided to you for your records. Importantly, even after agreeing to participate, you retain the right to withdraw from the study at any time, without needing to provide a reason. You may also choose to withdraw your information from the study up until August 2024, when the research findings are scheduled to be submitted as a PhD thesis. Please be aware that your decision to withdraw at any point, or your decision not to participate, will in no way affect your relationship with Maynooth University or the researcher conducting this study.

What information will be collected? In the course of this research, you will be asked to provide basic demographic information including your gender, age, socio-economic status, and the duration of your residency in Ireland. Please note that we will not request any personally identifiable information, such as your name or employer. To accurately capture the discussions, interviews will be recorded. These recordings will be used solely for the purpose of transcription and analysis within the scope of this study.

Will your participation in the study be kept confidential? Rest assured that all information collected about you during this research will be kept strictly confidential. At no point will names or other identifiable details be disclosed. To ensure privacy, all personal information will be coded, anonymised, and encrypted. Physical copies of data will be securely stored in a locked cabinet at the researcher's workplace. Electronic data will be encrypted and securely stored on Maynooth University (MU) computers or servers. Access to this data will be strictly limited to myself, **Yuening Li**, and my supervisor, **Prof. Aphra Kerr**, and only after the data has been anonymised. No information will be shared with any unauthorised individuals or third parties. Additionally, if you request, the data you provide can be made available to you for your own reference.

'It must be recognised that, in some circumstances, confidentiality of research data and records may be overridden by courts in the event of litigation or in the course of investigation by lawful authority. In such circumstances the University will take all reasonable steps within law to ensure that confidentiality is maintained to the greatest possible extent.'

What will happen to the information which you give? All information you provide during this research will be securely stored at Maynooth University (MU) in a manner that ensures your anonymity. Upon the completion of the research, the data will be retained on the MU server for archival purposes. After a period of ten years, all collected data will be responsibly destroyed. The responsibility for this task will fall to either my supervisor, Prof. Aphra Kerr, or the Principal Investigator (PI). Any physical data will be confidentially shredded, while electronic data will be securely reformatted or overwritten by the PI at MU, ensuring complete data erasure.

What will happen to the results? The research will be written up and presented as a PhD thesis and may also be used for academic journal articles and presentations. A copy of the research findings will be made available to you upon request.

What are the possible disadvantages of taking part? While I do not anticipate any negative consequences arising from your participation in this research, I acknowledge that discussing your experiences with banking and mobile banking could potentially be sensitive or distressing. These discussions may touch upon personal aspects of your financial life, which can be a delicate subject. Please know that your comfort and well-being are of utmost importance to us. If at any point–before, during, or after your participation–you feel uncomfortable, you have the full right to withdraw from the research without any obligation. In such instances, we will also provide you with information about relevant support services to assist you.

What if there is a problem? After the completion of the focus group sessions and/or one-to-one interviews, I will take a moment to discuss with you your thoughts on the experience and to check on your well-being. We understand that participation in this research might bring up unexpected feelings or reactions. Should you experience any distress following your participation, or if you have any concerns or questions, please

do not hesitate to contact me, Yuening Li, at **yuening.li@mu.ie** or on my **mobile at 00 353 874659072**. Additionally, if at any point you wish to withdraw from this research, you can also contact me directly.

In the event that you have concerns about how the research has been conducted, and you feel these have not been adequately addressed, you may reach out to my supervisor, Prof. Aphra Kerr, at aphra.kerr@mu.ie or by calling 00 353 1 7086140.

Any further queries? If you require any additional information or have further questions, please feel free to contact me, Yuening Li, at the following:

Email: yuening.li@mu.ie
Postal Address: Yuening Li, PhD Student, c/o Department of Sociology, Room 2.11, 2nd Floor TSI Building, Maynooth University, Maynooth, Co. Kildare.

Should you decide to participate in this study, we kindly ask you to complete and sign the consent form overleaf.

Thank you for taking the time to read this.

Appendix 3 *Phase 3* Information Sheet

INFORMATION SHEET FOR RESEARCH PARTICIPANTS

Purpose of the Study: I am Yuening Li, a PhD candidate in the Sociology Department at Maynooth University. My research, supervised by Prof. Aphra Kerr, is a part of the requirements for a PhD in Sociology. This project is funded by ***Science Foundation Ireland through the Centre for Research Training in Advanced Networks for Sustainable Societies.*** The focus of my study is on the digitalisation and platformisation of money, payment systems, banking, and other financial technology services in Ireland. In simpler terms, this research aims to understand the experiences of people in Ireland when using digital banking platforms.

What will the study involve? This focus group aims to gain insights from everyday users and 'nonusers' of digital banking apps in Ireland. You will be asked about your personal experience with these apps (and if you are not currently using them, the reasons why you chose not to). The focus is on sharing your experiences in a group setting and discussing issues rather than simply sharing opinions.

Who has approved this study? This study has undergone review and has received ethical approval from the Maynooth University Research Ethics Committee. Upon request, you can be provided with a copy of this approval.

Why have you been asked to take part? You have been selected to participate in the focus group based on your residence in Ireland and your decision to either use or not use mobile banking applications. During the interview, you will be asked to share your personal experiences and opinions regarding current mobile banking apps available in Ireland, such as Bank of Ireland's Banking 365, An Post Money, Revolut, among others.

Do you have to take part? Please be assured that you are under no obligation to participate in this research. Your involvement is entirely voluntary, and it is completely your decision whether or not to take part.

Should you choose to participate, you will be required to sign a consent form. A copy of this form, along with an information sheet, will be provided to you for your records. Importantly, even after agreeing to participate, you retain the right to withdraw from the study at any time, without needing to provide a reason. You may also choose to withdraw your information from the study up until August 2024, when the research findings are scheduled to be submitted as a PhD thesis. Please be aware that your decision to withdraw at any point, or your decision not to participate, will in no way affect your relationship with Maynooth University or the researcher conducting this study.

What information will be collected? In the course of this research, you will be asked to provide basic demographic information including your gender, age, socio-economic status, and the duration of your residency in Ireland. Please note that we will not request any personally identifiable information, such as your name or employer. To accurately capture the discussions, interviews will be recorded. These recordings will be used solely for the purpose of transcription and analysis within the scope of this study.

Will your participation in the study be kept confidential? Rest assured that all information collected about you during this research will be kept strictly confidential. At no point will names or other identifiable details be disclosed. To ensure privacy, all personal information will be coded, anonymised, and encrypted. Physical copies of data will be securely stored in a locked cabinet at the researcher's workplace. Electronic data will be encrypted and securely stored on Maynooth University (MU) computers or servers. Access to this data will be strictly limited to myself, Yuening Li, and my supervisor, Prof. Aphra Kerr, and only after the data has been anonymised. No information will be shared with any unauthorised individuals or third parties. Additionally, if you request, the data you provide can be made available to you for your own reference.

> *'It must be recognised that, in some circumstances, confidentiality of research data and records may be overridden by courts in the event of litigation or in the course of investigation by lawful authority. In such circumstances the University will take all reasonable steps within law to ensure that confidentiality is maintained to the greatest possible extent.'*

What will happen to the information which you give? All information you provide during this research will be securely stored at Maynooth University (MU) in a manner that ensures your anonymity. Upon the completion of the research, the data will be retained on the MU server for archival purposes. After a period of ten years, all collected data will be responsibly destroyed. The responsibility for this task will fall to either my supervisor, Prof. Aphra Kerr, or the Principal Investigator (PI). Any physical data will be confidentially shredded, while electronic data will be securely reformatted or overwritten by the PI at MU, ensuring complete data erasure.

What will happen to the results? The research will be written up and presented as a PhD thesis and may also be used for academic journal articles and presentations. A copy of the research findings will be made available to you upon request.

What are the possible disadvantages of taking part? While I do not anticipate any negative consequences arising from your participation in this research, I acknowledge that discussing your experiences with banking and mobile banking could potentially be sensitive or distressing. These discussions may touch upon personal aspects of your financial life, which can be a delicate subject. Please know that your comfort and well-being are of utmost importance to us. If at any point–before, during, or after your participation–you feel uncomfortable, you have the full right to withdraw from the research without any obligation. In such instances, we will also provide you with information about relevant support services to assist you.

What if there is a problem? After the completion of the focus group sessions and/or one-to-one interviews, I will take a moment to discuss with you your thoughts on the experience and to check on your well-being. We understand that participation in this research might bring up unexpected feelings or reactions. Should you experience any distress following your participation, or if you have any concerns or questions, please do not hesitate to contact me, Yuening Li, at **yuening.li@mu.ie** or on my **mobile at 00 353 874659072**. Additionally, if at any point you wish to withdraw from this research, you can also contact me directly.

In the event that you have concerns about how the research has been conducted, and you feel these have not been adequately addressed, you may reach out to my supervisor, Prof. Aphra Kerr, at aphra.kerr@mu.ie or by calling 00 353 1 7086140.

Any further queries? If you require any additional information or have further questions, please feel free to contact me, Yuening Li, at the following:

Email: yuening.li@mu.ie
Postal Address: Yuening Li, PhD Student, c/o Department of Sociology, Room 2.11, 2nd Floor TSI Building, Maynooth University, Maynooth, Co. Kildare.

Should you decide to participate in this study, we kindly ask you to complete and sign the consent form overleaf.

Thank you for taking the time to read this.

Appendix 4 *Phase 2* Expert Interview Outline

Proposed time: 45 minutes

Introduction

- Briefly introduce the research and the purpose of expert interviews to the interviewees. (Detailed information will be sent to all interviewees one week prior to the scheduled interviews.)
- Inform the interviewees about confidentiality and consent. Check if the consent form is properly signed.
- Explain to the interviewees that they can withdraw consent at any time (now, during the interview, and after the interview) until June 2024, upon the submission of the first draft of this thesis.
- Inform the interviewees that the interview will be recorded and start recording.

Section	Core Questions	Prompt Questions
Background	Could you briefly introduce your role in your organisation?	What is your relationship with customers?
Section 1: Digital Banking and Platforms	What types of digital technologies are used in these services (e.g., mobile apps, chatbots)? Why these technologies? If customers do not want to use digital services, are there any non-digital options available? If so, what are they?	Are digital options cheaper for the organisation?
Section 2: Design and Affordance	Who designs the digital personal finance services in your organisation? What skills do you expect your customers to possess in order to use your services?	How do you maintain them? (in house, third party?) What happen when they don't have the skills? How do you ensure that they have these skills?

Section 3: Customer Service and User Experience	Do your digital finance services target specific user groups? If yes, what are the groups? What are the selection criteria? - Does feedback from users influence banking service design changes? If yes, how does it work? What customer data do you gather through mobile apps for banking? Do you **sell** customer data to other organisations?	Do you offer different digital and non-digital services to different customer groups? Or adapt them to different groups? For those not currently considered target groups, do you have strategies to include them in the future?
Section 4: Social Impact	Does your organisation engage with the public via social media? If yes, on what channels? And why these channels? How prevalent are **hybrid branches** in your network? How do you decide on the location of these branches? How has the relationship between banking services and local communities changed in Ireland?	Will the social functions of apps like Revolut pose challenges to more traditional banking apps? Are there any barriers or regulatory risks associated with adding new non-banking functions, for example, chatbots in banking apps? Do you have any concerns about employing the particular digital technology in the services your organisation provides?
Closing	What do you anticipate will be the next big thing in digital finance? Is there anything else you would like to share that we have not covered?	

Thank the expert for their time and insights. Inform them that they can withdraw consent even after this interview. If they have any questions, they can find the contact information of the interviewer and the supervisor on the consent sheet they were given prior to this research, both in a physical copy and digitally.

Appendix 5 *Phase 3* User Interview Outline

Proposed Time: 60 minutes

Introduction

- Briefly introduce the research and the purpose of the focus group to participants (Detailed information will be sent to all focus group participants one week prior to the scheduled session.)
- Inform the participants about confidentiality and consent. Check if the consent form is properly signed.
- Explain to the participants that they can withdraw consent until the beginning of the recording of this focus group.

Warm-Up

- Remind participants not to share any personal information they do not wish to disclose. While all identifiable information will be anonymised during data processing, due to the focus group setting with other participants, the moderator (i.e., the researcher) may intervene if sensitive information is shared and request the participant to revise or reconsider their statement.
- Invite each participant to introduce themselves and mention their level of use of digital payment services (e.g., purpose, frequency, etc.).

Core discussion

Depending on the discussion, the moderator may not cover all the questions. The focus group aims to address at least three of the questions listed below, with the flexibility to include off-script questions that emerge during the conversation.

Theme 1 Getting a Digital Bank Account

- When did you start using digital banking apps and why? Which apps did you use?
- Do you still use the same apps as when you start? Or have you changed to different apps? Why?—website?
- What are the difficulties for you signing up for digital banking apps?
- How often do you check your digital banking apps? And why?

Theme 2 T&C and Communication

- Do you read T&C when you sign up for the service? Tell me about it?
- Do you receive any email or postal communication by the service you use? Do you read them? What kind of information do you receive from digital banking apps?

Theme 3 Daily Use

- How do you find customer support functions for digital banking apps? Have you talked to a chatbot agent before? Do you like it?—first question always links to walkthrough
- [quest: reach to a human agent in app]
- For BOI, AIB and An Post Money, would you go to the bank if you have any issues with the apps/websites?—second question to expert interviews
- Are you worried about fraud? If so, do you do anything to prevent it?

Theme 4 Impact of Digital Payment Service—a bit broader, transition to apps

- What do you think is the most different thing about digital banking apps? And how does this influence you?

Closing Discussion

- If you could suggest one feature to add or improve in the digital payment services you use, what would it be and why?
- Allow time for any final thoughts or questions from the participants.

Wrapping up

- Thank participants for their contributions.
- Briefly discuss the group's general feelings about the discussion to gather feedback on the session.
- If they have any questions, they can find the contact information of the interviewer and the supervisor on the consent sheet they were given prior to this research.

Appendix 6 Similar Visual Designs of SBUK and N26 (UI and Colours)