

Spring 5-29-2015

Mobile Banking Adoption and Diffusion: Enabling and Constraining Social or Financial Inclusion among Poor Women in Pakistan?

Atika A. Kemal

Anglia Ruskin University, atika.kemal@student.anglia.ac.uk

Lin Yan

Anglia Ruskin University, lin.yan@anglia.ac.uk

Follow this and additional works at: http://aisel.aisnet.org/ecis2015_cr

Recommended Citation

Kemal, Atika A. and Yan, Lin, "Mobile Banking Adoption and Diffusion: Enabling and Constraining Social or Financial Inclusion among Poor Women in Pakistan?" (2015). *ECIS 2015 Completed Research Papers*. Paper 96.

ISBN 978-3-00-050284-2

http://aisel.aisnet.org/ecis2015_cr/96

This material is brought to you by the ECIS 2015 Proceedings at AIS Electronic Library (AISeL). It has been accepted for inclusion in ECIS 2015 Completed Research Papers by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

MOBILE BANKING ADOPTION AND DIFFUSION: ENABLING AND CONSTRAINING SOCIAL OR FINANCIAL INCLUSION AMONG POOR WOMEN IN PAKISTAN?

Complete Research

Kemal, Atika Ahmad, Anglia Ruskin University, Chelmsford, UK, atika.kemal@anglia.ac.uk

Yan, Lin, Anglia Ruskin University, Cambridge, UK, lin.yan@anglia.ac.uk

Abstract

Whilst the adoption and diffusion of mobile banking has revolutionised the banking sector in developing countries, paucity remains on exploring the role of mobile banking for government-to-person (G2P) transfers. Through an interpretive case study of the Benazir Income Support Programme (BISP) in Pakistan, the paper investigated how the adoption of mobile phones enabled and constrained poor women for receiving G2P payments and its impact on poor households. We analysed the qualitative data collected, through semi-structured interviews, from semi-urban women users, programme designers and mobile banking providers through the structuration lens. We argued that albeit m-banking was 'socially constructed' and 'socially embedded' within the organisational context that enabled BISP designers, it imposed technological and human constraints upon women users. Our findings further revealed that the diffusion of m-banking empowered women for social inclusion, but financial inclusion was limited in providing access to a range of financial services. We contributed to the theoretical literature by contending that Orlikowski's Duality of Technology failed to address the issue of 'human poverty' through the Capabilities Approach. So unless there was a paradigm shift through which m-banking provided 'capabilities' in enabling micro-entrepreneurial development, m-banking would remain palliative for poverty 'alleviation' rather than poverty 'elimination' in Pakistan.

Keywords: mobile banking, adoption, diffusion, government-to-person payments (G2P), poor women, social inclusion, financial inclusion, capabilities, Pakistan

1 Introduction

Invariably, Information and Communication Technologies (ICTs) adoption and diffusion studies are based upon the premise that ICT's contribute to socio-economic development in developing countries (Tarafdar, Singh and Anekal, 2013; Heeks, Foster and Nugroho, 2014; Madon et al., 2009) aspiring to the realisation of desirable world orders, such as Sen's Capabilities Theory (Thompson, 2008; Zheng, 2009) or the United Nations Millennium Goals for eradicating poverty (Gilhooly and Ocampo, 2005). However, Heeks (2010) argues that researchers fail to analyse the impact of 'socially embedded' ICTs and place greater emphasis on ICT adoption and diffusion models. To this effect, by drawing upon the nature of the ICT innovation, social actors and the institutional context within the Systems of Innovation (SoI) framework, Foster and Heeks (2013a) identify how the diffusion of innovative technologies, such as mobile phones at the BoP (bottom-of-the-pyramid) create 'inclusive innovation', or 'pro-poor innovation' for the poor. Another study highlighted the significance of the Bottom of Pyramid (BoP) in shaping ongoing adaptive innovations throughout the scaling of ICT innovations (Foster and Heeks, 2013b). This paper is another tentative attempt along this direction in exploring the social embeddedness of ICTs for development.

Moreover, the exponential growth and diffusion of mobile technologies in the developing world has revolutionised the banking sector. The majority of people in developing economies are financially marginalised and 'unbanked', creating an inequitable economic world that impacts on individual's socio-economic standing and well-being (Duncombe and Boateng, 2009; Donner and Tellez, 2008).

Within this setting, banks exploit mobile technologies to deliver financial services, via mobile banking (m-banking), to financially excluded populations (Donner, 2007; Donner and Tellez, 2008; Porteous, 2006). Hence, m-banking provides a low-cost delivery channel for banks to increase their outreach and bridge the 'financial divide' between the rich and poor (Mas and Kumar, 2008; Cracknell, 2004). As branchless banking regulations provide an enabling environment for m-banking, banking agents act on behalf of banks and convert 'virtual money' into physical cash (Ivatury and Mas, 2008; Donner and Tellez, 2008; Ivatury and Pickens, 2006; Comminos et al., 2008). Thus, banking agents are more accessible to local communities where traditional bank branches are absent, either due to infrastructural deficits or high costs (Mas, 2009). In effect, several models of mobile banking have emerged, especially M-PESA in Kenya and Tanzania and WIZZIT in South Africa (Camner and Sjoblom, 2009; Hughes and Lonie, 2007; Omwansa, 2009; Almapay and Bala, 2010). Whilst there are studies available from Philippines (SmartMoney and G-Cash), India (Eko) and Bangladesh (bKash and Dutch Bangla Mobile) (Ndiwalana and Popov, 2008; Mishra and Bisht, 2013; Chen, 2012) we find that there is sparse research from Pakistan in exploring how m-banking adoption and diffusion increases financial access for poor households.

Most studies from practitioners provide valuable insight into the actual usage of current m-banking practices. As m-banking includes a wide variety of banking practices, ranging from person-to-person (P2P), person-to-business (P2B), government-to-person (G2P) payments, m-savings and m-credit/m-insurance, we distinguish that the terms m-finance, m-money or m-banking are interchangeably used in most studies (Donner and Tellez, 2008). The literature from Kenya, Tanzania and Philippines reflects that the majority of m-banking practices pertain to mobile transfers, or P2P payments (Heyer and Mas, 2009; Morwaczynski, 2008, 2009, 2011; Alampay and Bala, 2010; Jack and Suri, 2010). However, in Latin America, particularly Brazil, and in South Asia, such as Pakistan and Bangladesh, over the counter P2P and P2B transfers are exclusive amongst majority of male users. In recent years, there has been significant increase in the outflow of G2P payments, via digital tools including mobile phones. However, there is still scant research available that evaluates social cash transfer programmes at national levels (Mas, 2009; Chen, 2012; Bold, 2011).

Of relevance to the ICT innovation in emerging economies, many governments are leveraging on digital inclusive tools, such as mobile phones, for delivering G2P payments as vehicle to extend financial inclusion to improve the welfare of poor populations (Rotman, 2011; Pickens, Porteous and Rotman, 2009; Medhi, Ratan and Toyama, 2009; Lochan et al., 2010). Although latest research from CGAP provides critical insights from middle income countries; Brazil, Columbia, Mexico and South Africa, in evaluating the cost to governments, recipients' usage of accounts and the business case for financial providers, however, the potential for G2P payments as a vehicle to increase financial access yet remains largely untapped in current studies (Pickens, Porteous and Rotman, 2009). Hence, the paper aims to critically analyse the role m-banking, within a social cash programme in Pakistan, a country with established m-banking programmes that have been largely under researched to-date. Through a structuration lens, the paper aims to investigate how m-banking adoption 'enables' and 'constrains' poor women users to access G2P payments and the impact of its diffusion on households for social and financial inclusion.

In what follows, we will first review the m-banking adoption and diffusion literature in developing countries that highlights the theoretical and empirical gaps. This justifies our choice of using Orlikowski's structuration (1992) framework as a theoretical lens to guide the study. We then introduce our methodology, an interpretive case study of the Benazir Income Support Programme (BISP) in Pakistan, and its relevance within the G2P context to frame our research question. After data collection using qualitative methods, we analyse the data using hybrid thematic analysis. We proceed to discuss our findings within Orlikowski's structuration lens, but as new themes emerge from the findings, we extend this framework using the Capabilities Approach (Sen, 1999). In the end, we conclude by summarising the critical issues pertaining to m-banking adoption and diffusion for increasing financial access for poverty alleviation, and the theoretical/practical contributions and implications of the study within the ICT for development literature.

2 Theoretical Framework- Adoption and Diffusion of M-banking

2.1 Technological Deterministic Perspective

The adoption and diffusion model of Information Systems (IS) practices from developed countries into developing economies is primarily technologically deterministic, as the focus on local needs of local communities is discounted by international development agencies (Avgerou, 2010; Kyem, 2012). Development theorists look at ICT transfer and diffusion as actions, entangled with conflicting interests and power relations, in contemporary global and national politics (Thompson, 2008; Avgerou, 2010). Hence, the ICT adoption and diffusion literature aims to converge the development agenda with ICT development studies in order to transfer the ‘best practice’ into developing countries, but without infusing ‘technocratic practices’ that may otherwise create ‘technological optimism’ (Thompson, 2008; Sahay and Avgerou, 2002; Heeks, 2008, 2010).

However, the field of research is still disparate as principally, the m-banking literature is constructed around policy and organisational reports prepared for donors, governments, or regulators that act as an ‘enabling environment’ (Porteous, 2006; Lyman, Pickens and Porteous, 2008). As the technological-deterministic perspective captures the upstream perception of m-banking providers (mobile operators, banks and MFIs) and intermediaries (retailers/banking agents) within the m-banking ecosystem, ICT innovation may not logically ‘fit’ with users expectations (Mas and Ng’weno, 2010; Mas and Morawczynski, 2009; Jenkins, 2008). Hence, current research is heavily biased towards m-banking adoption, like the **Technology Acceptance Model (TAM)** that relates to a set of behavioural constructs enabling adoption (Venkatesh and Davis, 2000; Tobbin, 2012; Mbogo, 2010; Ngugi, Pelowski and Ogembo, 2010). Other scholars have applied Rogers’ **Diffusion of Innovations Theory** (Rogers, 1962, 2004) that reflects upon the S-shaped pattern of IS innovations, with the importance of creating awareness, as a critical first step, to drive m-banking adoption and usage (Sivapragasm, Aguero, and de Silva, 2011).

2.2 Socio-Technical Perspective

A socio-technical perspective on m-banking adoption and diffusion perceives ICT innovation to be ‘socially embedded’, based upon the ‘situated’ approach that considers ICT innovation to be socially constructed and enacted by social actors (Avgerou, 2001, 2002). Few studies examine the intersections of financial and socio-economic networks, in identifying the key questions of trust that emerge, and how m-banking behaviour patterns alter socio-economic relationships between low-income individuals and households (Hayes and Westrup, 2012; Medhi, Ratan and Toyama, 2009; Kareer-Rueedi and Trueb, 2011; Tobbin, 2012; Morawczynski and Miscione, 2008). Whilst **Adaptive Structuration Theory** evaluates how m-banking ‘amplifies’ social structures rather than ‘transforming’ them in India (Donner and Tellez, 2008; Donner, 2007), studies from Kenya reveal that urban-rural transfers ‘transform’ financial practices for the cultivation of livelihood strategies (Morawczynski, 2009, 2011; Morawczynski and Pickens, 2009). However, there is a gap in the current theoretical literature that analyses both m-banking adoption and diffusion through the lens of Orlikowski’s Duality of Technology.

2.2.1 Orlikowski’s Duality of Technology

Orlikowski’s Duality of Technology (1992) directs an interpretive and social constructionist view in examining the adoption and diffusion of m-banking for delivering G2P practices within the social and institutional context of households in Pakistan. By reconceptualising the scope and use of technological innovation (m-banking) and its relationship with social agents (women/designers) and institutions (households), structuration research, through a socio-technical lens, provides deep insight to investigate how the social construction of m-banking ‘enables and constrains’ women users and technology designers. Also, it provides an ‘interpretive technological frame’ to study how this ‘dual effect’ of technology impacts on the socio-economic dynamics of household structures for social and financial inclusion in Pakistan.

In the structuration model (Orlikowski, 1992), there are four key influences operating continuously and simultaneously in the interaction between technology, people and organisations (refer to Figure 1). The first influence is, **‘Technology is a product of human action’ (process a)**. By reinforcing the ontological stance of ‘social constructionism’ it illustrates how designers capture their social beliefs and objectives into the design of technology. M-banking is enacted by social actors, who through continuous use and interaction, may attach different meanings to it. This gives rise to the notion of m-banking being ‘interpretively flexible’. Hence, technology is created, sustained and improvised by human action through on-going use, so technology ‘evolves’ (Orlikowski, 1992, 2000).

Within the second influence, **‘Technology is a medium of human action’ (process b)** Orlikowski (1992) postulates that technology, enacted through human agency, cannot ‘determine’ but only ‘condition’ human practices. Hence, while ‘conditioning’ social practices, technology may ‘enable’, or ‘constrain’, or do both. Thus the ‘duality of technology’ assumes that while being a product of human action, technology has a ‘dual effect’ on users, unless users ‘choose to act otherwise’. This relationship situates the research question, **‘how does the adoption of m-banking enable and constrain women users to access G2P payments?’**

The third influence, **‘Institutional impact of technology on structures’ (process c)** draws a relationship between technology and institutions, or how m-banking diffusion within structures, affect the socio-economic properties of households for structural change. Hence, the structuration model defines the manner in which m-banking practices become reified and institutionalised in households, either by reinforcing practices or transforming them. So while an innovation may be adopted or improvised because of its acquired legitimacy, technology’s construction and use is conditioned by an organisation’s structure of significance, domination and legitimation (Orlikowski, 1992, 2000). This relationship proposes the question, **‘how does m-banking affect the socio-economic properties for social and financial inclusion of poor households in Pakistan?’**

However, the final relationship, **‘Institutional impact of technology on agents’ (process d)** or the role of external and internal institutional forces in influencing the construction and design of m-banking lies outside the scope of this paper. Furthermore, Orlikowski’s framework failed to establish the role of technology in enhancing ‘human capabilities’ and ‘financial capabilities’ for financial inclusion. Hence, we integrate Sen’s Capability Approach in our discussion section, as this theme ‘emerged’ from the data analysis.

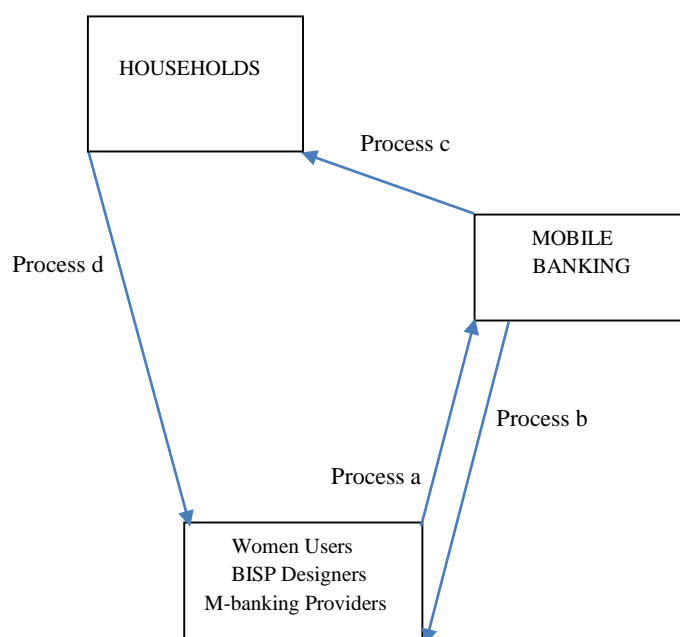


Figure 1: Relationship between the Research Questions and Orlikowski’s Duality of Technology adapted from Orlikowski’s Duality of Technology (1992).

3 Methodology and Data Analysis

Our methodology is an interpretivist case study investigating the phenomenon of m-banking within the context of the G2P payments sector in Pakistan (Yin, 2009; Stake, 2005). We chose a social cash transfer programme that was utilising m-banking for delivering G2P payments to poor households. Our case study design was single and embedded drawing perspectives from providers and users; women recipients within households, BISP officials and m-banking providers. The unit of analysis from individual users within the framework shifted to the organizational level of households.

3.1 Context of Mobile Banking within the G2P Sector

Pakistan, a developing country with a population exceeding 180 million, boasts of a high mobile phone penetration of 74 percent¹ with 88 percent² of the population being unbanked. As penetration of formal financial services remains low, this problem is particularly prevalent for 63 percent³ of the population residing in rural areas. Therefore, majority of population is financially marginalised creating an economic divide between the rich and poor. Hence, there is consensus amongst policy makers around the world to improve access to financial services through m-banking for steering the financial inclusion agenda (Anwar, 2013). Currently five established m-banking models provide a range of mobile financial services in Pakistan; Easypaisa, UBL-Omni, Mobicash, Timepey and U-fone. Moreover, m-banking initiatives have been supported by branchless banking regulations, issued in 2008 by the State Bank of Pakistan (SBP) (CGAP, 2011, 2012). Branchless banking regulations have enabled the government sector to digitise a large share of government flows to people. This aims to move the country towards a digital financially inclusive system, via digital tools, such as smart cards, debit cards, mobile phones and ATMs. So m-banking can potentially become a vehicle for promoting financial inclusion (Rotman, Kumar and Prada, 2013). However, current academic research lags behind in the G2P sector as highlighted in a CGAP (2009) publication, *'More vigorous research is needed to track how G2P recipients use financial services when connected to the financial system and whether it encourages any form of entrepreneurial development'*.

Hence, the paper justifies promising research in Pakistan as the growing mobile industry, coupled with the novelty of the m-banking infrastructure offers a unique landscape for evaluating the impact of G2P practices on poor households. Based on the Duality of Technology framework, we propose the following research question, *'How does the adoption of m-banking (G2P payments) enable and constrain poor women users and impact on households for social and financial inclusion in Pakistan?'*

3.2 Case of Benazir Income Support Programme (BISP)

Our focus for m-banking is the Benazir Income Support Programme (BISP) in Pakistan, launched in 2008 by the former Pakistan People's Party Government. This programme is one of the poverty reduction strategies adopted by the Government for the United Nations developmental agenda of MDGs. The main aim of the programme is to cushion the effects of chronic poverty and mitigate the impacts of rampant inflation of food and fuel prices faced by poor households. Over the years it has successively become the country's main safety net programme, providing unconditional cash transfers of value PKR 1200 (around \$11.4 per month) to approximately 5.3 million⁴ low-income households (BISP Report, 2014). So the timescale and large volume of payments make BISP a unique case study to evaluate, as recent data suggests that one-third of households in Pakistan are falling below the poverty line, and 21% are severely poor. The poverty score card survey, adopted by BISP in 2009, is the first

¹ www.pta.gov.pk/

² Yaseen Anwar, Governor of the State Bank of Pakistan at the 6th International Conference on 'Mobile Banking in Pakistan', Karachi, 14 March 2013

³ <http://www.data.worldbank.org/>

⁴ www.bisp.gov.pk/

of its kind in South Asia that enabled BISP to identify 7.7 million households out of a total of 27 million households that were the 'poorest of the poor'. It was developed with financial and technical support from the World Bank and Department for International Development (DFID), through a proxy means test (PMT) to determine the welfare status of the household, containing indicators related to household size, asset ownership and education of household members. BISP targets women specifically, and households, with a monthly income less than PKR 6000 (\$57). The programme covers all four provinces; Sindh, Punjab, Baluchistan and Khyber Pakhtoonkhwa. Also, other regions including Federally Administered Tribal Areas (FATA), Azad Jammu and Kashmir (AJK), Gilgit Baltistan (GB) and Islamabad Capital Territory (BISP, 2014).

BISP, primarily funded by the Government of Pakistan, has disbursed an amount of 46 billion to-date that is expected to cross RS. 70 billion by the end of the fiscal year 2013-14. However, it also receives unprecedented support from the World Bank and DFID that provide technical and monetary assistance in supporting digital payment mechanisms. Previously, social cash was 'handed-out' to women beneficiaries, via local politicians and postmen. After escalating pressure from donors and banks, BISP converted cash-based payments to digital payments. In addition to other G2P digital tools, smart cards and debit cards, mobile phone banking was rolled out in five districts; Layyah, Larkana, Battagram, Islamabad and Rawalpindi (BISP Report, 2014).

3.3 Data Collection and Analysis

For primary and secondary data collection, based on the interpretive epistemology, we principally used a qualitative approach (Walsham, 2006). We drew on social actors, that is, those involved in the construction and design of m-banking (BISP officials), transfer of G2P payments (bankers and mobile operators) and women users (BISP beneficiaries). We also took advantage of the growing secondary evidence available from BISP reports, official publications and media sources. The geographical location of the study was Rawalpindi and Islamabad, Pakistan- one of the regions where m-banking was implemented, and where the head offices of BISP and mobile operators were located.

In terms of primary data, 33 semi-structured interviews were conducted from March to April 2014. These interviews helped construct multiple perspectives from all stakeholders that were directly involved with G2P transfers. We interviewed 16 women beneficiaries at the Islamabad Tehsil Office, the customer service site for women beneficiaries residing in the semi-urban clusters around Rawalpindi and Islamabad. Women beneficiaries, who visited the office, were purposively sampled on the basis of possessing mobile phones and receiving payments since 18 months. The questions explored m-banking in enabling and constraining their access to G2P payments, and its impact on their socio-economic livelihoods. In addition, 17 semi-structured interviews were held with other stakeholders; senior management at BISP (strategic, management and operational level staff), m-banking providers and agents (Easypaisa/ U-fone) and bankers (United Bank Limited, Alfalah Bank and Summit Bank). This helped us construct multiple 'interpretive' frames in order to triangulate the data sources for enhancing the credibility, trustworthiness and reliability of the qualitative data. On average, interviews lasted between 30-45 minutes with each participant, and were mainly conducted in the local language, Urdu. The interviews were translated from Urdu to English and transcriptions were uploaded into the software NVivo for thematic analysis (Boyatzis, 1998; Taylor and Usher, 2001; Braun and Clark, 2008). Primary and secondary coding identified 'existing' and 'new themes'. Axial coding grouped similar themes together into categories, and finally, relationships were drawn between the categories (Boyatzis, 1998).

Although the interview template was theory-led, drawing on concepts from Orlikowski's structuration framework (m-banking design, enabling, constraining, social and financial inclusion), however, through an inductive approach, other emergent themes (capabilities, poverty graduation) were also analysed. The hybrid approach constructed new ideas so we integrated Sen's Capabilities Approach into the existing framework (Strauss and Corbin, 1999; Charmaz, 2009, 2011; Boyatzis, 1998). Thus, although structuration theory guided our initial data collection, it was not restricted to a 'passive' approach that merely 'discovered' pre-existing themes (Taylor and Usher, 2001). Our case study methodology was driven by structuration, but through an inductive approach, we introduced the 'capabilities' theme that

established the relationship between technology and ‘capabilities development’ for financial inclusion (see figure 2, page 12).

4 Findings and Discussion

After analysing the data in the light of the research question, we discuss our findings in two sections. In the first section, we highlight how m-banking ‘enabled’ and ‘constrained’ women users and BISP officials (process b). In the next section, we evaluate the impact of m-banking on household structures for ‘inclusion’ within the Duality of Technology framework (process c). However, later as concepts of ‘capabilities and poverty elimination’ emerged, we integrate Sen’s Capability model to extend the initial framework.

4.1 Enabling and Constraining Women Users

		Human	Technological	Socio-economic/Institutional	Infrastructural
Constrains/ Enablers		<i>Technical/ financial illiteracy Absence of skills and training Inability to use mobile phone features Technophobia Mobile phones hijacked by others Technophobia</i>	<i>Gender unfriendly technology Mobile phones lost, damaged or sold SIM blocked or lost Mobile account not registered with name IVR not receive Notification via SMS</i>	<i>High social and travel costs Agent fraud Limited agent networks Agent trust vs. dependency Convenience and ease of payment Full payment received Agent trust Agent trouble shoots problems</i>	<i>Weak signal coverage Power outages Handset charging problems</i>

Table. Themes for enabling and constraining women users
Socio-economic, human and infrastructural constrains

Whilst examining how mobile phone adoption ‘enabled’ and ‘constrained’ women, our findings revealed that m-banking enabled women to receive the full amount of payment, as they no longer had to pay ‘*bakhsheesh*’, or bribes, to the local politician or postmen for delivering the money at home. However, beneficiaries complained of the high travel costs they incurred when travelling to banking agents for cashing-out their money. Due to the nature of the bank-led m-banking model, agent network was poor in remote communities that defeated the purpose of m-banking in increasing financial access for women. Many women, therefore, preferred to travel in groups in order to share the travel costs. Although women were seen to trust their agents, who predominantly ‘handed out’ the full amount, some angrily protested that they had been fooled by dishonest agents who ‘pocketed’ their money. However, the complex issue that emerged was that due to absence of ‘human capabilities’, such as lack of technical and financial literacy, women were still dependant on male family members, or friends, to read the text message, containing the personal identification number (PIN) that was necessary for receiving their money. Since they were unable to use their mobile phones independently, even for voice communication, their handsets were hijacked by other family members especially husbands, who perceived mobile phones as symbolic tools for empowerment. Hence, within structuration theory, we argue that m-banking did not completely ‘remove’ the human interface, but ‘replaced’ or ‘substituted’ previous human intermediaries (local politician or postman) now with banking agents and other male members. Thus, m-banking ‘created’ new structures of power and dependency at the institutional level.

‘We have to travel long distances and are not allowed to travel alone so go in groups....It costs us a lot of time and money and when we come back home at the end of the day, we are still expected to do the housework and cook...it’s not fair!’ (BISP beneficiary)

Technological and infrastructural constraints

Other technological constraints regarding mobile phone usage was that there were many reported cases of handsets being damaged or lost. However, due to high replacement costs, banks or mobile operators were unable to fund any replacement costs as providing phones to millions of women initially had been very expensive as well. This was one of the prime reasons why m-banking could not be ‘scaled up’ from the pilot stage. Frequently, SIM or mobile accounts got blocked owing to a wrong number identified against the computerised national identity card (CNIC). Moreover, it was revealed that women were not receiving the interactive voice recording (IVR) which they were supposed to receive in the local language, Urdu, in addition to the text message for payment notification. Besides these, infrastructural problems concerned poor network coverage, or signal issues resulting in the SMS not being received. Women, especially those residing in semi-urban or rural remote clusters, complained of frequent power outages that led to handset charging problems. However, it was further disclosed that the m-banking interface was not ‘gender friendly’ for women users, so the need to adopt a bottom-up approach to match women capabilities whilst designing m-banking programmes targeted at women at the BoP.

‘But you have to keep in mind that our beneficiaries are basically women and technology is more male friendly!’ (Director Payments, BISP)

Enabling transparency, visibility, efficiency and reconciliation of G2P payments

However, m-banking adoption by BISP staff ‘enabled’ them to achieve transparency, visibility and efficiency in disbursing G2P payments over secure digital platforms. M-banking provided BISP management access to real-time information on payment status, and facilitated the reconciliation of large scale payments further enabling efficient complaint redress. Hence, m-banking reduced massive corruption or ‘leakage’ by governments as payments were directly made into user’s mobile accounts eliminating previous human ‘intermediaries’- politicians and postmen. However, through the structuration lens, we divulge how m-banking introduced new ‘intermediary’ structures, banks at the institutional level, who were now ‘intermediaries’ between BISP management and women beneficiaries.

‘Primary objective of shifting to m-banking was transparency because there were transparency issues in making payments through Pakistan Post. We were getting news that postmen were involved in corruption, so we implemented technology-based systems, or m-banking, hoping that deserving beneficiaries will get the total amount.’ (Director General Cash Transfers, BISP)

We debate that although financial inclusion has become a general policy goal as governments switch from cash to digital G2P channels in developing countries (Porteous, 2012), however in the case of BISP we saw that it was the secondary agenda. Donors were primarily concerned with transparency in the targeting and delivery of payments. Furthermore, we found that the cost of funding handsets by banks or mobile operators was expensive for m-banking to be sustainable over the long term. Other security issues; fraudulent payments, terrorist financing and network shutdowns in times of political turbulence were other political reasons why m-banking could not be ‘scaled up-’ and hence was being gradually replaced by the Benazir Debit Card in all regions. However, the reasons why m-banking was not ‘scalable’ nation-wide lies outside the scope of analysis of this paper.

By revisiting the ‘Duality of Technology’ framework (Orlikowski, 1992), we highlight that the social construction of m-banking, influenced by external and institutional forces, primarily served BISP’s objectives by ‘conditioning’ G2P practices around technology. Hence, m-banking design was a function of management’s institutional context, but clashed with women user’s capabilities and their social context (Pinch and Bijker, 1984, 1987; Bijker, 1987; Bijker and Law, 1992; Mackenzie and Wajcman, 1999). So we argue that m-banking, being ‘socially embedded’ within BISP, ‘enabled’ BISP officials,

but being technologically-deterministic for women users, it 'constrained' them. Furthermore, we observed that technology-in-practice (Orlikowski, 2000) allowed women users to improvise mobile phone services, as there was a significant increase in social communication patterns that cemented social and personal bonds of kinship amongst women users (Donner, 2006, 2007; Molony, 2006; Smith, Spence and Rashid, 2011; Donner and Escobari, 2010).

4.2 Impact of Mobile Banking Diffusion on Household Structures

Within structuration theory, Orlikowski (1992) drew a relationship between m-banking and institutions, linked to user's recurrent engagement with technology that constituted and reconstituted emergent structures and practices resulting from m-banking usage. Our level of analysis shifted from the individual to the household level that analysed the impact of m-banking on re-structuring household dynamics. As households possess authoritative, established rule-like procedures with a self-sustaining character, or 'those social patterns that when chronically reproduced, owe their survival to relatively self-activating social processes', they shared similar structural traits with institutions and are classified as 'social organisations' (Avgerou, 2002).

According to the poverty score card survey, data from 27 million households identified 7.7 million households that were the poorest of the poor and eligible to receive social cash (BISP, 2014). On the basis of women's socio-economic profile and demographic data obtained from 16 households, we found that 62% of households comprised of nuclear families, with an average family size of 9 members, including an average of 5 children per family. Majority of women were dependent upon husband's income as 87% were unemployed. Mostly their husbands were self-employed as rickshaw drivers, builders or fruit and vegetable hawkers, drawing an average monthly household income of PKR 9800 (US\$96). Therefore, the value of women's agency was typically confined to domestic and reproductive responsibilities rather than seeking work in capital and labour markets. Women participant's average age was 40, and an overwhelmingly majority of 56% were completely illiterate and un-skilled, 38% had received some level of primary education, while a 6% minority had attended secondary school with a qualification equivalent to GCSE.

4.2.1 Limited Financial Inclusion

Negligible savings and asset investment

The research showed that access to G2P payments, via m-banking, brought immense economic benefits so were highly 'valued' by beneficiaries. The grants supplemented household incomes, and hence, 'cushioned' the effect of poverty and providing financial security. Poor women further disclosed that G2P payments had raised their standard of living. The extra cash was primarily spent on the basic needs of the household; food, clothing and medicines. Since they had become highly dependent upon the money, 90% of beneficiaries withdrew the money within 2-3 days after it was transferred into their mobile accounts. However, still many complained that the amount was meagre to make ends meet and so were unable to save.

'They use the money to buy food, medicines and clothes, and if you actually go into areas of rural Sindh, like Sukkur and Larkana, you will be surprised and shocked to see that some women even don't have sandals on their feet in the scorching sun...you cannot imagine but this is the level of poverty!' (Director Operations, BISP)

Furthermore, few beneficiaries could afford to send their children to primary school and cover the educational expenses; school fees, books, uniforms and stationery. Education was not perceived as an 'emergency' for the poor as compared to hunger. Although BISP had introduced *Waseela Taleem*, an education programme enrolling children into primary education, however, the scheme had limited national roll-out. Negligible savings explained why beneficiaries were unable to invest in 'physical assets', such as agricultural machinery, or livestock for participating in micro-entrepreneurial activities. Also, women were unable to take out loans from banks. Several beneficiaries were gravely concerned

that if they stopped receiving the grant, they would be hard-pressed, and would have to struggle to maintain their household budgets. So although G2P payments improved the economic well-being of households, any significant economic change was seen to be ‘marginal’, as m-banking failed to restructure households in making them self-sustainable. So in contrast to the market-oriented approach by Tarafdar, Singh and Anekal (2013), ICTs did not reduce spatial separations for market development at the BoP.

To-date unfortunately there aren't any key successes...we've just kept beneficiaries on a begging bowl! The last management on paper did train fifty seven thousand beneficiaries but there is no record, neither was there a plan of handling them after the training programme, and they've just been left on the streets without jobs!’ (Chairman, BISP)

Limited access and usage of financial services

Whilst the biggest financial reward of m-banking for marginalised communities is ‘financial inclusion’, however, we disagree with Porteous’ (2007) argument of m-banking being ‘transformative’ at this stage in Pakistan. Financial inclusion referred to how m-banking ‘absorbed’ the unbanked population by connecting users to banks. However, Morawczynski et al. (2010) measures financial inclusion success by not only focussing on financial access alone, but also the usage of accounts that propel economic activities at the BoP.

The most important thing is that we do not have any provision in our agreement with banks that virtual accounts maybe used for any other purpose. Even if some of the beneficiaries do not withdraw their money for a long time, banks don't provide any interest on their money, so this limits financial inclusion!’ (Outreach Manager, BISP)

According to CGAP (2009) report, “Banking the Poor via G2P Payments”, ‘G2P payments promote a higher degree of financial inclusion with greater social impact’. However, in this case study, G2P payments promoted a ‘lower degree’ of financial inclusion. We showcased this after investigating what type of mobile accounts were provided to users, as financial inclusion entails providing access to a wider array of financial services (Ehrbeck, 2010; Bold, Porteous and Rotman, 2012). Although m-banking successfully connected millions of women to the banking system, however, the provision of bank accounts is not enough for the financial inclusion drive. We revealed that users were provided with ‘limited purpose’ accounts that were conduit accounts and confined to withdrawals. As these accounts were not fully ‘financially inclusive’ bank accounts, they handicapped women in executing a broader spectrum of financial transactions; transferring funds, depositing savings and accessing micro-credit and insurance to instigate local economic activity.

Initially, m-banking is a way towards financial inclusion, but it is not completely serving the purpose of financial inclusion because beneficiaries have limited purpose bank accounts to receive the payments. In fact, these are rather conduit accounts because they are not allowed to carry out other transactions; they cannot receive or deposit money in that fund or account. So strictly speaking, it is not financial inclusion because we cannot talk about savings!’ (Director Payments, BISP)

Although the m-banking infrastructure permitted a front-end access to banking services, via agents, however, the bank-led model was restrictive in terms of cost and proximity to agents in rural areas. Thus, financial inclusion *per se* was rather ‘limited’ to achieve ‘progressive transformation’ within households (Avgerou, 2010). So realistically speaking, financial inclusion was still in the ‘infancy’ stage to transform the micro-economic landscape for the poor and marginalised communities in Pakistan. Hence, within the structuration model, m-banking diffusion was reified and institutionalised within households to ‘alleviate’ poverty. So, m-banking failed to ‘structurally’ transform households for participating in economic activities in order to ‘eliminate’ poverty.

Financial awareness and learning

Furthermore, through the lens of BISP officials, ‘financial inclusion’ was reinterpreted as ‘social inclusion’ of marginalised women. Although majority of women lacked the financial/technical knowledge for handling complex m-banking procedures independently, however, m-banking fostered some basic awareness and learning in using mobile phones for receiving G2P payments. These were positive indicators and a first step towards attaining financial inclusion (Morawczynski et al., 2010).

‘Financial inclusion is a little far ahead! Beneficiaries are mostly illiterate, so cannot use their mobile phone. But she will make an effort to use technology and since they are determined to get their money, they will eventually learn. They have innovative minds....this is financial inclusion for us! Not that she can independently do financial transactions, but she is developing the financial capabilities or capacity to read numeric data and use the PIN. This is the first stage of financial inclusion. The second stage involves being able to use the banking system independently!’ (Director General Cash Transfers, BISP).

Hence, through Orlikowski’s practice lens (2000), women user’s constant engagement with technology and financial structures, helped reform financial practices within socio-economic structures. Further, as there was a steep rise in women’s learning curve, as they gradually learnt how to manage their household finances independently, financial inclusion was evident at the basic social level. So in order to enhance individual capabilities, we highlight that training and formal financial education needs to be included within the financial inclusion drive. We noted that training was not provided as management did not have the institutional or financial capacity to offer training. Furthermore, as the literature provides evidence that mobile technologies support micro-entrepreneurial development for accessing information within socio-economic networks (Jenson, 2007; Aker, 2008), replacement of mobile phones with debit cards will have serious implications in creating an ‘information society’ for transforming into ‘knowledge economies’ in future (Carmody, 2013).

‘We did not have the capacity to provide any training, honestly we did not have the facilities. What we did was that we provided brochures, leaflets to the beneficiaries which had pictorial manifestation of the process, but if you specifically mean training, it wasn’t there!’ (Director Payments, BISP)

4.2.2 Social and Political Inclusion

Empowerment, state citizenship and political identity

Furthermore, ‘social inclusion’ mainly referred to the ‘psychological’ empowerment of poor women by gaining access to a bank or ATM that instilled a strong sense of personal pride in most beneficiaries. Women for the very first time, were issued the computerised national identity card (CNIC) that established their personal and state identity granting them the right to vote and make their political ‘voices’ heard. This led to political inclusion, enabling them to access other government services as well. Therefore, within the context of ‘social poverty’, m-banking led to ‘progressive transformation’ within socio-political structures (Avgerou, 2010).

‘I would say about eighty five to ninety percent of the time we still see women, even in tribal area as well, who actually step out of home, come here and stand in lines at the agent locations and withdraw their own money...so that I think is a significant social change that is happening!’ (Executive Vice President, UBL)

Self-reliance, independence and freedom

Social inclusion enhanced women beneficiaries’ confidence, self-respect, self-esteem and personal freedoms within their households. Many beneficiaries expressed that they were allowed to spend the money they received independently that increased their ‘choices’. Also, they had become self-sufficient to a certain degree, and were not completely dependent upon husband’s income. Surprisingly, against the general norm of patriarchal households, some men felt relieved of being ‘freed’ of their financial responsibilities, easing off the stress and burden of finding additional work. So m-banking had considerably reduced rural-migrate to cities to seek employment (Baro and Endouware, 2013).

‘For the first time in my life, I saw and ever held a thousand rupee note in my hands... it has raised my self-esteem, so I don’t have to ask family for money....I am self-sufficient!’ (BISP beneficiary)

On the contrary, few women in male-dominated households disclosed that they were coerced into transferring some amount of the grant to their husbands. Such men feared that their authority and control had diminished, besides damage to their male supremacy or machoism. Hence, we argue that m-banking affected familial relationships by dismantling the entrenched interests, power equilibrium and ‘status quo’ within households.

‘You know that we are still traditional in our thinking...if I don’t respect my husband, he can leave me! I fear this because in our society, it’s very difficult for a woman to live on her own. I have to be careful that I don’t upset him, so he needs to feel important enough to have the money, otherwise he will feel threatened!’(BISP Beneficiary).

Through structuration lens, we contend that m-banking diffusion was guided by the application of ‘normative sanctions’ prevalent within households. Hence, moral order was articulated and sustained through rituals, tradition and socialisation practices that ‘legitimised’ m-banking through a ‘negotiation process’, otherwise, it led to ‘disruptive transformation’ (Orlikowski, 1992, 2000; Powell, 1987; Avgerou, 2010). So although ‘unconditional transfers’ enhanced ‘personal freedoms’ and the social well-being of poor women (social inclusion) however, it failed to build human and financial capacities that enhanced women’s agency for financial freedoms and inclusion.

4.2.3 Integrating the Capabilities Approach within Structuration Theory

From hybrid analysis, ‘capabilities development’ was a new theme that emerged. We extend our discussion through Sen’s Capabilities Approach (1999). As previously ‘unconditional’ cash led to social inclusion or empowerment only, we argue how ICTs or m-technologies, can provide a vector of goods and services, or a means to achieve financial inclusion in the fight against poverty. In *Development as Freedom*, Sen (1999) uses ‘freedom’ to broadly refer to effective opportunities we reason to value. Sen argues that the deprivation of ‘freedoms’ to undertake important activities, or choices, classifies as ‘impoverished lives’. So in contrast to growth-oriented approaches that measure women’s deprivation, in terms of income gaps between female and male headed households, ‘well-being’ is assessed in terms of acquiring ‘capabilities’ to enhance capacities and freedoms within women’s agency (Sen, 1999). We integrate this framework with Orlikowski’s Duality of Technology (1992) to extend our discussion of how m-banking can provide ‘conditional’ resources for financial inclusion to eliminate poverty.

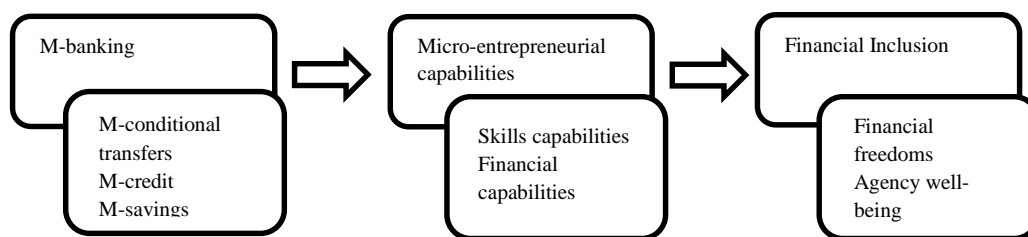


Figure 2: Relationship between m-banking and capabilities development for financial inclusion

As figure 2 illustrates, in the first stage, m-banking delivers a vector of ‘conditional’ G2P resources that provide the means to acquire entrepreneurial skills or ‘human capabilities’ for financial empowerment. Access to these resources, via m-banking, helps expand capabilities of women to determine their choices for freedom. After developing human resources, m-banking provides access to financial resources, m-credit/savings for acquiring ‘financial capabilities’ for micro-entrepreneurial development. In the second stage, human and financial capabilities both help in the ‘transformation’ to achieve ‘functionings’ or freedoms for financial inclusion. Hence, in the last stage financial inclusion enhances women’s agency for poverty elimination.

5 Conclusions and Contribution to Knowledge

We conclude that m-banking enabled BISP designers to achieve transparency in disbursing G2P payments. However, being technologically deterministic and ‘poorly entangled’ within the household context (Orlikowski, 2007, 2010; Scott and Orlikowski, 2014), it ‘constrained’ women users with limited capacities in their interaction with technology. While we agree with Rotman (2011) that social cash transfer programmes function as a stepping stone, in the move from cash to digital, and onto fully inclusive formal financial services’, however, in our case study we revealed that technological and human constraints restricted financial inclusion. This was related to the nature of bank account provided and lack of training and financial education imparted to users. Thus, G2P payments only helped women ‘cope’ with poverty rather than ‘escape’ from poverty, as m-banking was ‘palliative’ to ‘structurally’ transform households for ‘progressive transformation’ (Avgerou, 2010). This conforms to Heeks (2008, 2009) that mobile technologies should create economic, social, political and psychological opportunities, enabling the poor from being ‘consumers’ to ‘innovators’ of technology. So unless we do not combine the capabilities approach, mobile phones will not create ‘inclusive innovation’ at the BoP (Foster and Heeks, 2013a). Further, Zheng (2009) states, ‘there is not yet evidence that investment in ICT boosts economic growth and increase standards of living in most countries, as mobile phone usage is embedded in extant social relations of cooperation and conflict’. So technological diffusion may not necessarily lead to development’ (Zheng, 2009; Thompson, 2008).

Firstly, our theoretical contribution for m-banking calls for a ‘paradigm shift’, from the narrow socio-technical focus towards a more inclusive approach in harnessing human capabilities to enhance human agency, freedom and equity through the Capabilities Approach (Sen, 1999, 2010; Zheng, 2009). Hence, m-banking design should deliver ‘human’ and ‘financial’ resources (m-credit/m-savings) for triggering the ‘asset effect’ in order to encourage the entrepreneurial spirit for financial empowerment in support of the Millennium Development Goals (Sen, 1999; Andersson, Gronlund and Wicander, 2012).

Secondly, on a practical level, regulators such as the State Bank of Pakistan (SBP) need to support a variety of m-banking models that offer greater flexibility to m-banking providers in designing access and usage of services for financially inclusive practices. The conversion of limited bank-accounts into financially inclusive accounts with access to savings, credit/insurance and money transfers would be the first step. Also, governments should leverage on the existing m-banking infrastructure with established programmes that would not only reduce costs, but would provide greater access to mobile financial services by reducing spatial distances between suppliers and innovators in m-banking markets (Tarafdar, Singh and Anekal, 2013). Furthermore, m-banking design should be ‘gender friendly’ to match capabilities and increase usage of women users in order to reduce the gender digital financial divide in Pakistan.

Thirdly, the micro-finance sector and NGO’s can learn lessons from the government and promote the financial inclusion agenda through the ‘trickle-down effect’ and ‘riding on’ the existing m-banking infrastructure in extending mobile credit to poor households. Foreign donor pressure was instrumental in m-banking innovation, as the local context was discounted so m-banking could not be ‘scaled-up’ (Foster and Heeks, 2013a). These are the lessons other governments, policy-makers and professionals can learn from this study. Hence, developmental ICTs encounter a pressing need to manage conflict of interests between government interests and private and public funding bodies. But above all, we hope that this paper would be of interest to the academic community, in particularly to scholars within the *IS Adoption and Diffusion* community at ECIS 2015 as it sheds light on the importance of ICTs in bridging the financial and digital gap inherent between rich and poor communities in developing economies. It is also important for the ICT for Development community to recognise that although m-banking provides opportunities within the G2P sector, it may not always provide the ‘silver bullet’ for financially marginalised communities. So, by highlighting the case of Pakistan, the paper provides new perceptions and dimensions within the rapidly growing body of IS knowledge that converges the ICT Development and ICT for Development literature.

6. References

- Aker, J. (2008). Does Digital Divide or Provide? The Impact of Cell Phones on Grain Markets in Niger. *Center for Global Development Working Paper*, [e-journal] (154) Available through: Google.
- Alampay, E. and Bala, G. (2010). Mobile 2.0: M-money for the BoP in the Philippines. *Information Technologies & International Development*, [e-journal] 6 (4), pp.77-92. Available through: EBSCO.
- Andersson, A., Grönlund, Å. and Wicander, G. (2012). Development as freedom—how the capability approach can be used in ICT4D research and practice. *Information Technology for Development*, 18(1), 1-4.
- Anwar, Y., ed. (2013). *Mobile Banking in Pakistan. Proceedings of sixth International Conference on 'Mobile Banking in Pakistan'* Karachi, Pakistan, March 2013.
- Avgerou, C. (2001). The Significance of Context in Information Systems and Organizational Change. *Information Systems Journal*, [e-journal] 11 (1), pp.43-63.
- Avgerou, C. (2002). The Institutional Nature of ICT and Organisational Change. C. Avgerou, ed. 2002. *Information Systems and Global Diversity*. Oxford: Oxford University Press. Chapter: 1, pp.1-38.
- Avgerou, C. (2010). Discourses on ICT and Development. *London School of Economics and Political Science*.2010_42 Available through: Primo.
- Baro, E. E., and Endouware, B. E. C. (2013). The effects of mobile phone on the socio-economic life of the rural dwellers in the Niger Delta region of Nigeria. *Information Technology for Development*, 19(3), 249-263.
- Brief on Benazir Income Support Programme (BISP): A Social Safety Net. 2014. www.bisp.gov.pk. Government of Pakistan.
- Bijker, W.E. and Law, J. (1992). *Shaping Technology/ Building Society: Studies in Socio-technical Change*. [E-book] The MIT Press. Available through: Google.
- Bijker, W.E. (1987). The Social Construction of Bakelite: Toward a Theory of Invention. W.E. Bijker, T.P. Hughes and T. Pinch, ed. 1987. *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press. Pp.159-187.
- Bold, C. (2011). *Branchless Banking in Pakistan: A Laboratory for Innovation*. CGAP. Washington DC: World Bank. Available through: Google at <https://openknowledge.worldbank.org/bitstream/handle/10986/9449/649920BRI00PUB0ctober0201100PUBLIC0.pdf?sequence=1> [Accessed 3 March 2013].
- Bold, C., Porteous, D. and Rotman, S. (2012). *Social Cash Transfers and Financial Inclusion: Evidence from Four Countries*. CGAP, Washington, D.C.
- Boyatzis, R.E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks, CA: Sage.

Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, (3), pp. 77-101.

Camner, G. and Sjöblom, E. (2009). *Can the Success of M-PESA be repeated? A Review of the Implementations in Kenya and Tanzania*. Available through: Google at: http://mobileactive.org/files/file_uploads/camner_sjoblom_differences_ke_tz.pdf [Accessed 1 March 2013].

Carmody, P. (2013). A knowledge economy or an information society in Africa? Thintegration and the mobile phone revolution. *Information Technology for Development*, 19(1), 24-39.

CGAP. (2011). *Technology Program Note Pakistan, 2011*. Washington, D.C.: CGAP, <http://www.cgap.org/sites/default/files/CGAP-Technology-Program-Country-Note-Pakistan-Apr-2011.pdf>

CGAP. (2012). *Interoperability and the Pathways towards Inclusive Retail Payments in Pakistan, 2012*. Washington, D.C.: CGAP, Bankable Frontier Associates.

Charmaz, K. (2009). Shifting the Grounds: Constructivist Grounded Theory Methods for the Twenty-first Century. J.M. Morse, P.N. Stern, J. Corbin, B. Bowers, K. Charmaz and A.E. Clarke, ed. 2009. *Developing Grounded Theory: The Second Generation*. Walnut Creek, CA: Left Coast Press. , pp.127-154.

Charmaz, K. (2011). Grounded Theory Methods in Social Justice Research. N.K. Denzin and Y.S. Lincoln, ed. 2011. *The Sage Handbook of Qualitative Research*. 4th ed. Thousand Oaks, CA: Sage. , pp.359-380.

Chen, G. (2012). The Growth of Mobile Financial Services in Bangladesh. CGAP, Washington D.C. Available at: <http://www.cgap.org/blog/growth-mobile-financial-services-bangladesh> [Accessed 17 July 2013].

Comminos, A., Esselaar, S., Ndiwalana, A. and Stork, C. (2008). *M-banking the Unbanked -Towards Evidence-based ICT Policy and Regulation Volume 1: Policy Paper 4*. Research ICT Africa. Available through: Google at: http://kcl.co.uk/sites/default/files/RIA_Mobile-banking.pdf [Accessed 2 March 2013].

Cracknell, D. (2004). Electronic Banking for the Poor Panacea, Potential and Pitfalls. *Small Enterprise Development*, [e-journal] 15 (4), pp.8-24. Available through: Google.

Donner, J. and Tellez, C.A. (2008). Mobile banking and economic development: Linking adoption, impact, and use. *Asian Journal of Communication*, [e-journal] 18 (4), pp.318-332. Available through: Google.

Donner, J. (2006). The Use of Mobile Phones by Micro-entrepreneurs in Kigali, Rwanda: Changes to Social and Business Networks. *Information Technologies and International Development*, [e-journal] 3 (2), pp.3-19. Available through: Google.

Donner, J. and Escobari, M.X. (2010). A Review of Evidence on Mobile Use by Micro and Small Enterprises in Developing Countries. *Journal of International Development*, [e-journal] 22 (5), pp.641-658. Available through: Google.

- Donner, J., ed. (2007). M-banking and M-payments Services in the Developing World: Complements or Substitutes for Trust and Social Capital Preconference on Mobile Communication. *57th Annual Conference of the Int. Communication Association* [on-line] San Francisco, California, May 2007.
- Duncombe, R. and Boateng, R. (2009). Mobile Phones and Financial Services in Developing Countries: A Review of Concepts, Methods, issues, Evidence and Future Research Directions. *Third World Quarterly*, [e-journal] 30 (7), pp.1237-1258. Available through: EBSCO.
- Ehrbeck, T. (2011). Financially Inclusive Ecosystems: The Role of Government Today. *CGAP*. Washington, D.C.
- Foster, C. and Heeks, R. (2013a). Conceptualising Inclusive Innovation: Modifying Systems of Innovation Frameworks to Understand Diffusion of New Technology to Low-Income Consumers. *European Journal of Development Research*. 25, pp. 333-355.
- Foster, C. and Heeks, R. (2013b). Innovation and Scaling of ICT for the Bottom-of-the-Pyramid. *Journal of Information Technology*. 28, pp.296-315.
- Gilhooly, D. and Ocampo, J., ed. (2005). *Creating an Enabling Environment: Toward the Millennium Development Goals* [e-book] UN Information and Communication Technologies Task Force. Available through: Google.
- Hayes, N. and Westrup, C. (2012). Context and the Processes of ICT for Development: *Information and Organization*. [E-paper]. 22 (1) pp.23-36. Available through: Science Direct.
- Heeks, R. (2008). ICT4D 2.0: The Next Phase of Applying ICT for International Development: *Computer [e-journal]*. 41 (6) pp.26-33. Available through: Primo.
- Heeks, R. (2010). Development 2.0: The IT-Enabled Transformation of International Development: *Communications of the ACM [e-journal]*. 53 (4) pp.22-24. Available through: Primo.
- Heeks, R. (2010). Do Information and Communication Technologies (ICTs) Contribute to Development? : *Journal of International Development [e-journal]*. Wiley Online Library.22 (5) pp.625-640. Available through: Primo.
- Heeks, R. (2009). Emerging Markets IT and the World's "Bottom Billion": *Communications of the ACM [e-journal]*. 52 (4) pp.22-24. Available through: Primo.
- Heeks, R., Foster, C. and Nugroho, Y. (2014). New Models of Inclusive Innovation for Development. *Innovation and Development*. 4 (2) pp. 175-185.
- Heyer, A. and Mas, I. (2009). *Seeking Fertile Grounds for Mobile Money- Draft Working Paper*. Bill and Melinda Gates Foundation. Available through: Google at: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/03/fertile_grounds_mobile_money55.pdf [Accessed 2 March 2013].
- Hughes, N. and Lonie, S. (2007). M-PESA: Mobile Money for the “Unbanked” Turning Cell-phones into 24-hour Tellers in Kenya. *Innovations: Technology, Governance, Globalization*, [e-journal] 2 (1-2), pp.63-81. Available through: Google.
- Ivatury, G. and Mas, I. (2008). *The Early Experience with Branchless Banking*. CGAP Focus Note, No. 46. Available through: Google at: <http://ssrn.com/abstract=1655257> [Accessed 28 February 2013].

- Ivatury, G. and Pickens, M. (2006). *Mobile Phones for Microfinance- CGAP Brief*. Washington DC: World Bank.
- Jack, W. and Suri, T. (2011). *Mobile Money: The Economics of M-PESA*. USA: National Bureau of Economic Research. Available through: Google at:
<http://www9.georgetown.edu/faculty/wgj/papers/Jack_Suri-Economics-of-M-PESA.pdf>
[Accessed 3 March 2013].
- Jenkins, B. (2008). Developing Mobile Money Ecosystems. *Washington, DC: International Finance Corporation and Harvard Kennedy School*, [e-journal] Available through: Google.
- Jensen, R. (2007). The Digital Divide: Information (technology), Market Performance, and Welfare in the South Indian Fisheries Sector. *The quarterly journal of economics*, [e-journal] 122 (3), pp.879-924. Available through: Google.
- Karrer-Rueedi, E. and Trueb, D. (2011). Empowering Micro-entrepreneurs and Small Businesses through Mobile Phones in Emerging Markets and Developing Countries. *ATDF Journal*, [e-journal] 8 (3/4), pp.13-18. Available through: Google.
- Kyem, P.A.K. (2012). *Is ICT the Panacea to Sub-Saharan Africa's Development Problems? Rethinking Africa's Contentious Engagement with the Global Information Society: Progress in Development Studies* [e-journal]. Sage Publications, Ltd.12 (2) pp.231-244. Available through: EBSCO.
- Lochan, R., Mas, I., Radcliffe, D., Sinha, S. and Tahilyani, N. (2010). The Benefits to Government of Connecting Low-Income Household to an E-Payment System: An Analysis in India. *Lydian Journal*. PYMNTS.com/journal.
- Lyman, T., Pickens, M. and Porteous, D. (2008). Regulating transformational branchless banking: Mobile phones and other technology to increase access to finance. *Focus Note*, [e-journal] 43 Available through: Google.
- MacKenzie, D. and Wajcman, J. (1999). *The Social Shaping of Technology*. [E-book] Open University Press. Available through: Google.
- Madon, S., Reinhard, N. and Roode, D. and Walsham, G. (2009). *Digital Inclusion Projects in Developing Countries: Processes of Institutionalisation: Information Technology for Development* [e-journal]. Taylor & Francis Ltd.15 (2) pp.95-107. Available through: EBSCO.
- Mas, I. (2009). The Economics of Branchless Banking. *Innovations: Technology, Governance, Globalization*, [e-journal] 4 (2), pp.57-75. Available through: Google.
- Mas, I. and Kumar, K. (2008). *Banking on Mobiles: Why, How, for Whom?* CGAP Focus Note -48. Available through: Google at:
<http://www.kiwanja.net/database/document/report_banking_on_mobiles_CGAP.pdf>
[Accessed 2 March 2013].
- Mas, I. and Morawczynski, O. (2009). *Designing Mobile Money Services Lessons from M-PESA*. MIT Press. Available through: Google at:
<<http://www.mitpressjournals.org/doi/pdfplus/10.1162/itgg.2009.4.2.77>> [Accessed 26 February 2013].

- Mas, I. and Ng'weno, A. (2010). Three Keys to M-PESA's success: Branding, Channel Management and Pricing. *Journal of Payments Strategy & Systems*, [e-journal] 4 (4), pp.352-370. Available through: Google.
- Mas, I. and Radcliffe, D. (2010). *Mobile Payments Go Viral: M-PESA in Kenya*. World Bank. Available through: Google at: http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC_chpt_20.pdf [Accessed 5 March 2013].
- Mas, I. and Morawczynski, O. (2009). *Designing Mobile Money Services Lessons from M-PESA*. MIT Press.
- Mbogo, M. (2010). The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-PESA in Kenya. *Journal of Language, Technology & Entrepreneurship in Africa*, [e-journal] 2 (1), pp.182-203. Available through: Google.
- Medhi, I., Ratan, A. and Toyama, K. (2009). Mobile-banking Adoption and Usage by Low-literate, Low-income Users in the Developing World. *Internationalization, Design and Global Development*, [e-journal] pp.485-494.
- Mishra, V. and Singh Bisht, S. (2013). Mobile Banking in a Developing Economy: A Customer-centric Model for Policy Formulation. *Telecommunications Policy*, [e-journal] 37 (6-7), pp.503-514. Available through: Science Direct, <http://www.sciencedirect.com.proxy-lib.anglia.ac.uk/science/article/pii/S0308596112001826>.
- Molony, T. (2006). 'I Don't Trust the Phone; It Always Lies': Trust and Information and Communication Technologies in Tanzanian Micro-and Small Enterprises. *Information Technologies and International Development*, [e-journal] 3 (4), pp.67-83. Available through: Google.
- Morawczynski, O., Hutchful, D., Rangaswamy, N. and Cutrell, E. (2010). The Bank Account is not Enough: Examining Strategies for Financial Inclusion in India. *Proceedings from ICTD2010, December 13-15, London, UK*.
- Morawczynski, O. (2009). Exploring the Usage and Impact of "Transformational" Mobile Financial Services: The Case of M-PESA in Kenya. *Journal of Eastern African Studies*, [e-journal] 3 (3), pp.509-525. Available through: Google.
- Morawczynski, O. (2011). *Examining the Adoption, Usage and Outcomes of Mobile Money Services: The Case of M-PESA in Kenya*. Edinburgh: The University of Edinburgh. Available through: Google at: <http://www.fsassessment.umd.edu/publications/pdfs/Kenya-MPESA-Community.pdf> [Accessed 7 March 2013].
- Morawczynski, O. and Miscione, G. (2008). Examining Trust in Mobile Banking Transactions: The Case of M-PESA in Kenya. *Social Dimensions of Information and Communication Technology Policy*, [e-journal], pp.287-298. Available through: Google, <http://propid.ischool.utoronto.ca/wp-content/uploads/2011/05/miscione.pdf> [Accessed 5 March 2013].
- Morawczynski, O. and Pickens, M. (2009). *Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-PESA*. World Bank, Washington, DC. Available through: Google at:

<https://openknowledge.worldbank.org/bitstream/handle/10986/9492/503060BRI0Box31MPESA1Brief01PUBLIC1.pdf?sequence=1> [Accessed 26 February].

- Morawczynski, O., ed. (2008). *Surviving in the Dual System, 'How M-PESA is Fostering Urban-to-rural Remittances in a Kenyan Slum- Towards an ICT Research Agenda for African Development Proceedings of the IFIP WG 9.4, Pretoria* [on-line] South Africa, August 2008, Available at <Surviving in the_ dual system ‘: How M-PESA is fostering urban-to-rural remittances in a Kenyan Slum,|| in> [Accessed 1 March 2013].
- Ndiwalana, A. and Popov, O., eds. (2008). *Mobile Payments: A Comparison Between Philippine and Ugandan Contexts IST-Africa 2008 Conference Proceedings* [on-line] Africa, International Information Management Corporation. Available at <http://urn.kb.se/resolve?urn=urn:nbn:se:miun:diva-8241> [Accessed 6 March 2013].
- Ngugi, B., Pelowski, M. and Ogembo, J.G. (2010). M-PESA: A Case Study of the Critical Early Adopters' Role in the Rapid Adoption of Mobile Money Banking in Kenya. *The Electronic Journal of Information Systems in Developing Countries*, [e-journal] 43 (3), pp.1-16. Available through: Google.
- Omwansa, T. (2009). *M-PESA: Progress and Prospects*. Mobile World Congress. Available through: Google at: <http://www.strathmore.edu/pdf/innov-gsma-omwansa.pdf> [Accessed 6 March 2013].
- Orlikowski, W. J. (2010). The Sociomateriality of Organisational Life: Considering Technology in Management Research. *Cambridge Journal of Economics*, 34(1), pp. 125-141.
- Orlikowski, W.J. (1992). The Duality of Technology: Rethinking the Concept of Technology in Organisations: *Organization Science, Focused Issue: Management of Technology*.3 (3) pp.398-427.
- Orlikowski, W.J. (2000). Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, [e-journal] 11 (4), pp.404-428. Available through: Google.
- Orlikowski, W.J. (2007). Sociomaterial Practices: Exploring Technology at Work. *Organisation Studies*, 28(9), 1435-1448.
- Pickens, M, Porteous, D. and Rotman, S. (2009). *Banking the Poor via G2P Payments*. CGAP, Washington, D.C.
- Pinch, T.J, and Bijker, W.E. (1987). The Social Construction of Facts and Artefacts. W.E. Bijker, T.P. Hughes and T. Pinch, ed. 1987. *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press. , pp.17-50.
- Pinch, T.J. and Bijker, W.E. (1984). The Social Construction of Facts and Artefacts: or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other. *Social Studies of Science*, (14), pp.399-441.
- Porteous, D. (2006). *The Enabling Environment for Mobile Banking in Africa*. London: DFID. Available through: Google.

- Porteous, D. (2007). *Just How Transformational is M-banking*. Fin Mark Trust. Available through: Google at: <http://www.finscope.co.za/documents/2007/transformational_mbanking.pdf> [Accessed 1 March 2013].
- Porteous, D. (2012). *Is there is a Business Case for Offering Services to G2P Recipients?* Washington, D.C., CGAP.
- Rogers, E.M. (2004). A Prospective and Retrospective Look at the Diffusion Model. *Journal of Health Communication*, [e-journal] 9 (S1), pp.13-19. Available through: Google.
- Rogers, E.M. ([1962] 1995) *Diffusion of Innovations*, New York: Free Press.
- Rotman, S. (2011). *So Where Are We in the Link Between G2P and Financial Services?* CGAP, Washington, D.C.
- Rotman, S., Kumar, K. and Parada, M. (2013). *An Overview of the G2P Sector Payments in Pakistan*. CGAP, Washington, D.C.
- Scott, S.V. and Orlikowski, W.J. (2014). Entanglements in Practice: Performing Anonymity through Social Media. *MIS Quarterly*, 38 (3), 873-893.
- Sivapragasam, N., Agüero, A. and de Silva, H. (2011). The Potential of Mobile Remittances for the Bottom of the Pyramid: Findings from Emerging Asia. *Info*, [e-journal] 13 (3), pp.91-109. Available through: Google.
- Sahay, S. and Avgerou, C. (2002). *Introducing the Special Issue on Information and Communication Technologies in Developing Countries: The Information Society* [e-journal]. 18 (2) pp.73-76. Available through: Google.
- Sen, A. (2010). *The Mobile and the World: Information Technologies & International Development* [e-journal]. University of Southern California, USC Annenberg Press.6 (Special Edition) pp.1-3. Available through: EBSCO.
- Sen, A. (1999). *Development as Freedom*. Oxford: Oxford University Press.
- Smith, M.L., Spence, R. and Rashid, A.T. (2011). Mobile Phones and Expanding Human Capabilities. *Information Technologies & International Development*, [e-journal] 7 (3), pp.77-88. Available through: EBSCO.
- Stake, R.E. (2005). Qualitative Case Studies. In N.K. Denzin & Y.S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research (3rd Ed.)* Thousand Oaks, CA: Sage.
- Strauss, A. and Corbin, J. (1999). *Basics of Qualitative Research*. 2nd ed. Thousand Oaks, CA: Sage.
- Tarafdar, M., Singh, R. and Anekal, P. (2013). Impact of ICT-enabled Product and Process Innovations at the Bottom of the Pyramid: A Market Separations Perspective. *Journal of Information Technology*, 28, pp. 279-295.
- Taylor, G.W. and Ussher, J.M. (2001). Making Sense of S&M: A Discourse Analytic Account. *Sexualities*, (4), pp. 293-314.

- Thompson, M. (2008). *ICT and Development Studies: Towards Development 2.0*: Journal of International Development [e-journal]. Chichester, UK: 20 pp.821-835. Available through: Primo.
- Tobbin, P. (2012). Towards a Model of Adoption in Mobile Banking by the Unbanked: A Qualitative Study. *Info*, [e-journal] 14 (5), pp.74-88. Available through: Primo.
- Venkatesh, V. and Davis, F.D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, [e-journal] 46 (2), pp.186-204. Available through: Google.
- Walsham, G. (2006). Doing Interpretive Research. *European Journal of Information Systems*, 15, pp.320-330.
- Walsham, G. and Sahay, S. (2006). Research on Information Systems in Developing Countries: Current Landscape and Future Prospects: *Information Technology for Development* [e-journal]. Taylor & Francis Ltd.12 (1) pp.7-24. Available through: Primo.
- Walsham, G. and Robey, D. and Sahay, S. (2007). Forward: Special Issue on Information Systems in Developing Countries: *MIS Quarterly* [e-journal]. 31 (2) pp.317-327. Available through: Primo.
- Yin, R.K. (2009). *Case Study Research: Design and Methods*. 5th Edition. Thousand Oaks, CA: Sage.
- Zheng, Y. (2009). *Different Spaces For E-development: What Can We Learn from the Capability Approach?* : Information Technology for Development [e-journal]. Taylor & Francis Ltd.15 (2) pp.66-82. Available through: EBSCO.