Examining Mobile Banking in Developing Nations from Pro-Poor “Context, Culture, and Community” Perspective

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ABSTRACT
The mobile phone is the most widely used information and communication technology (ICT) among poor communities in developing nations. Mobile banking lies at the intersection of digital and financial inclusion of these bottom billions. Mobile banking is a social informatics phenomenon embedded in social context; its adoption and ongoing use depends on the ability of the poor to address the barriers to using mobile phones and financial services. Hence, the author critically examines the phenomenon using a pro-poor perspective. Cultural and contextual characteristics of communities significantly influence the adoption and continued usage of ICT (World Bank, 2012). To examine the challenges faced by the poor in adopting and continuing to use mobile banking services, the newly proposed pro-poor perspective focuses on three dimensions, context, culture, and communities. Qualitative analysis of studies on the adoption of mobile banking informs the interdisciplinary discussion on financial and digital inclusion in social informatics, and provides insights to researchers and practitioners for better serving the poor using mobile technologies in developing nations.

Keywords
Mobile Banking, Digital Inclusion, Financial Inclusion, Context, Culture, Poor Communities, and Developing Nations

INTRODUCTION
The first billion mobile phones took approximately 20 years to sell worldwide. The second billion were sold in 4 years. The third billion were sold in 2 years (Bhavnani et al. 2008). The fourth billion were sold in less than a year. Figure 1 compares the sharp contrast in diffusion of mobile phones against Internet and fixed-telephony. With 12 subscriptions per 100 inhabitants in the world in 2000 to 96 in 2013, the mobile phone serves as the leading ICT for digital inclusion. Digital inclusion refers to the access to and use of ICT by people who never had any access to an ICT before.

Several contextual factors play an important role in controlling the rate of digital inclusion in developing nations. For instance, in India, inexpensive mobile phone handsets ($15 per piece and above), fierce competition among mobile manufacturers and network operators, and cheap tariff rates have made mobile phones affordable even to the poor (Potnis and Deosthali, 2012). Further, collective ownership models (sharing cell phones through SIM cards and payments for air-time) and flexible payment options, such as micro-payments (up to a dollar), make mobile phones an attractive communication medium (Sinha, 2005).

MOBILE BANKING IN DEVELOPING NATIONS
The phenomenal rapid adoption of the mobile phone is also instrumental in fueling the growth of mobile banking, which is the most popular mode of financial inclusion in developing nations. Financial inclusion refers to providing access to affordable financial services (e.g., credit, savings, etc.) and products (e.g., insurance) to more than 2.5 billion poor who do not have bank accounts in the developing world (Mohan and Potnis, 2010).

Figure 1. Digital Inclusion via Mobile Telephony
Mobile banking, also known as mobile money, is defined as a broad term for the use of a mobile phone to access financial services (Pierre-Laurent Chatain et al., 2011). It allows customers to use their mobile phone as another channel for their banking services, such as deposits, withdrawals, account transfer, bill payment, and balance inquiry. Most mobile banking applications are additive in that they provide a new delivery channel to existing bank customers (Firpo, 2009). Mobile remittance and mobile payments are the two key applications of mobile banking in developing nations (Mallat et al., 2004). Mobile payments could be in the form of person-to-person, government-to-person, and business-to-business mode (Gencer, 2011).

The supply side of mobile banking consists of actors like banks, mobile network operators, mobile handset manufacturers, customer service field agents/money agents/sales force, government regulators and policy makers, whereas the demand side is influenced by the poor communities in the developing world. The mobile banking business is challenging, particularly because customer acquisition is far more sophisticated than traditional banking (GSMA, 2013). Mobile money service providers are required to recruit, train, and retain a large sales force to acquire new customers. Inadequate customer education worsens the process of acquiring new customers.

As of 2013, 123 mobile insurance, credit, and savings services were operational worldwide of which 27 were launched in 2013 alone, highlighting that there is strong interest in leveraging mobile phones to spread financial inclusion of the unbanked poor (GSMA, 2013). Sub-Saharan Africa is home to 56 mobile banking services followed by East Asia and the Pacific (20), Latin America and the Caribbean Islands (16), South Asia (13), the Developed World (11), the Middle East and North Africa (4), and Europe and Central Asia (3). M-Pesa is a poster child of mobile banking. In 2013, this seven-year old company crossed the customer base of 17 million poor worldwide, which includes 1/3rd the population of Kenya. However, the varying number of active M-Pesa accounts and the fluctuating frequency of carrying out transactions every month suggest that access to mobile banking services does not mean its ongoing use on a regular basis.

**PRO-POOR PERSPECTIVE**

The phenomenon of mobile banking adoption is studied using several theoretical top-down perspectives including but not limited to diffusion of innovation, technology adoption model, theory of planned behavior, and capability approach. In contrast, the pro-poor perspective is a bottom-up approach that does not borrow or impose any external pre-defined theoretical constructs to examine the phenomenon. This perspective is not influenced by private (e.g., mobile network operators) and public sector (e.g., government agencies) stakeholders of mobile banking but is informed by three dimensions – context, culture, and communities – which influence digital and financial inclusion of the poor in developing nations.

Access to a mobile phone does not necessarily imply its ongoing use by the poor. For instance, failure to pay bills on time or the inability to purchase a new mobile phone after losing or damaging an old device are possible reasons among many for not being able to afford to use a mobile phone. In case of banking, cultural or religious reasons (e.g., Islamic Sharia law forbids interest payments), and personal reasons like too risk-averse to borrow from banks discourage the poor from using the available financial services (Hermes and Lensink, 2011; Honohan, 2006).

With mobile banking being the marriage between digital and financial inclusion, it is very likely that the poor may not use the services ever or not continue using them on a regular basis. The initial success and ongoing usage of mobile banking heavily depends upon the poor, which led us to propose a pro-poor perspective for this study.

Mobile banking is a social informatics phenomenon where the diffusion of banking services and products are influenced by the design and use of mobile phones. The poor’s ability to use a mobile device is a pre-requisite to mobile banking. If the poor do not feel comfortable using a mobile, they are less likely to adopt or continue using a value-added service like mobile banking. Social informatics examines common conceptions of and expectations for ICT, by providing contextual evidence (Sanfilippo and Fichman, 2014). Hence, context is a critical dimension of the pro-poor perspective for examining the social informatics phenomenon of mobile banking.

Heeks and Bhatnagar (1999) propose critical success factors for ICT-based initiatives in developing nations. The factors are concerned with information, technology, process, people, management, culture, structure, strategy, environment, and politics. Cultural differences and related practices lead to a myriad of interpretations, appropriations, and usage of ICT. For instance, cultural differences in South Africa and the Philippines lead to creating different sets of challenges for the customers of Wizzit in South Africa and G-Cash in the Philippines, two of the leading mobile money service providers in the world. Culture is defined as the collective programming of the mind that distinguishes the members of one group from the others (Hofstede, 1980). Based on his study with 116,000 respondents and across 40 countries, he found that there are regional and national cultural groupings that affect the behavior of societies; importantly, the differences are persistent across time. Considering the central role of poor customers in the success of mobile banking, the author focuses on three dimensions in the pro-poor perspective to understand the challenges experienced by the poor in adopting and continuing to use mobile banking. The dimensions are: context, culture, and communities.
METHODS
The author collected academic and non-academic studies published between 2000 and 2014, which reported various challenges related to the adoption of mobile banking by the poor in developing nations. More than 75 project reports, blogposts, opinion pieces, and field notes published by the World Bank, United Nations, IEEE, GSMA, and around 25 peer-reviewed research articles appeared in top-tier journals in development, information science, and information systems discipline were considered for data analysis. Primary and secondary data published by academics and practitioners was coded using the concepts related to context, culture, and communities. For instance, social norms, inter-personal communication practices, and organizational values were some of the key concepts helpful in identifying cultural challenges to adopting mobile banking by the poor.

FINDINGS
The author briefly presents three clusters of challenges for adoption and continued usage of mobile banking by the poor in developing nations.

Contextual Challenges
Underdeveloped payment and technology infrastructure are the biggest contextual challenges for mobile banking. The poor in developing nations have less options (if any) for transferring money and accessing banking services, because there is less deployed formal banking infrastructure — fewer branches, automated teller machines (ATMs) generally co-located to relieve branches, and low Internet penetration (Mas and Kumar, 2008). The role and ability of actors to influence the value chain of mobile banking varies as per the contextual factors. Contextual factors create constraints and advantages for the implementation of various business models for mobile banking.

Cultural Challenges
Pre-existing sociocultural practices influence the adoption of ICTs, and hence, adoption of mobile banking in developing nations. For instance, in male-dominated societies, women are influenced by the opinions held and decisions made by their husband, father, brother(s), or son(s). However, in certain developing countries women are able to save using personal savings accounts without permission of their husbands (Morawczynski, 2009). In addition, organizational culture plays a key role in shaping the ability of mobile money service providers to serve the poor. Organizational values and culture affect operational transparency, ability to face market competition, and level of protection provided to consumers (Donovan, 2012). Poor customers in a single community could be served by several types of financial providers (e.g., banks, co-operative societies, rural development institutes, savings-led groups, etc.) with distinct business models (WEF, 2011). As a result, they experience services influenced by distinct organizational values and cultures.

Community-related Challenges
For disadvantaged communities, mobile banking presents a delicate balance between a conceptually powerful opportunity (being able to transact any time anywhere) and practical challenges (Mas and Kumar, 2008). Typically, the behavior of poor customers is affected by the following challenges: illiteracy, lack of familiarity with foreign languages including English, lack of familiarity with jargon used for banking, and lack of experience working with finicky menu sequences on a small screen and tiny buttons. Sometimes communities demand value-added services to address their local non-financial problems. Since agents are from the community they serve, their operational challenges act as community-related challenges for the mobile banking users. There exist four interlinked problems with the agents: profitability, proximity, liquidity, and trust. Agents last with a bank until it is a profitable proposition for them. If the agent network grows too much, it saturates the market. Due to high costs related to training and retention, the cost of recruiting and maintaining the agent network is high. If agents do not meet the expectations of customers or misbehave with them, the trust between customers and agents cannot be developed (Maurer et al., 2014).

THREE INDICATORS TO MEASURE CHALLENGES
Based on the above findings, three sets of indicators are proposed to assess contextual, cultural, and community-related challenges faced by the poor in adopting and continuing to use mobile banking in developing nations.

Context Indicators to Measure Contextual Challenges
The author proposes the following contextual indicators: Technological infrastructure (i.e., supply of electricity, mobile network spread, signal strength, etc.), Types of government policies (e.g., % of foreign direct investment allowed in telecom and banking sector, regulations for mobile network service providers, Know-Your-Customer policy, etc.), Technology standards (i.e., communication standards and protocols like 3G, 4G, NFC, biometrics, RFID, etc. affecting mobile manufacturing), and Banking policies (e.g., ratio of rural and urban bank branches, etc.)

User Behavior Indicators for Cultural Challenges
In male-dominated societies, men could easily influence women’s ability to use mobile phones and access banking services over mobile phones. Cultural factors like women’s tendency to avoid risks, type of culture (e.g., individualism vs. collectivism), and expected role to be played by men and women (e.g., men carry out banking operations, women take care of children and kitchen, etc.) influence the adoption and continued usage of mobile banking in the developing world. Moreover, the organization’s ability to provide secure financial transaction services to its customers affects their perception and approach toward a variety of banking services. Hence, the author proposes to study all of the above mentioned cultural factors as user behavior indicators to measure cultural challenges.
Utility Indicators for Community-related Challenges
Poor communities’ ability and frequency of using mobile banking services is affected by the perceived ease of using a specific mobile banking application, perceived use of the application, level of literacy (primary education index, second education index, etc.), ability to read English (user interfaces in English), level of financial literacy (ability to understand financial jargon used in the mobile application), and relationship with mobile money agents. Hence, the author proposes the above factors as utility indicators.

FUTURE RESEARCH
In the future, the author intends to undertake field research aiming to assess mobile banking practices in developing nations. The “Context, Culture, and Community” lens would be applied to understand challenges faced by the poor. Study findings would advance our existing understanding about the impact of mobile banking on the poor, specific challenges faced by them, and ways in which they attempt to overcome those challenges. The project would create value for the World Bank in assessing and making decisions for investing in projects related to mobile banking and beyond. Moreover, human-computer interaction (HCI) researchers and the research on HCl for development could benefit from the proposed project.

CONCLUSION
Mobile banking transforms the socioeconomic status of poor communities in developing nations. It enhances their productivity and creates new socioeconomic opportunities. However, the continued usage of neither mobiles nor banking services is guaranteed among poor communities; hence, the author proposes and applies a pro-poor perspective to study the challenges faced by the poor in adopting and continuing to use mobile banking, a social informatics phenomenon. The poster advances the interest of the ASIST 2014 Conference in cultures and communities.

REFERENCES


