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Devendra Potnis

University of Tennessee at Knoxville, dpotnis@utk.edu

Dawit Demissie

The Sage Colleges, demisd@sage.edu

Mizanur Rahman

New York State Department of IT, profmrmr@gmail.com

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FACTORS INFLUENCING USE OF MOBILE MONEY BY STUDENTS, SMALL BUSINESS OWNERS, AND FARMERS IN BANGLADESH

Devendra Potnis

University of Tennessee at Knoxville

dpotnis@utk.edu

Dawit Demissie

The Sage Colleges

demisd@sage.edu

Mizanur Rahman

New York State Department of IT

profmmr@gmail.com

ABSTRACT

This study explores the factors influencing students, small business owners (SBOs), and farmers to use mobile money services in Bangladesh. Regression analysis of the quantitative responses of 153 study participants, who are customers of Dutch Bangla Bank, a leading mobile money service in the country, shows that, unlike farmers and SBOs, students are hardly affected by the benefits of using mobile money, efforts involved, and facilitating conditions. Instead trust is one of the key factors influencing their use of mobile money. Digital and financial illiteracies pose a major challenge for farmers to benefit from mobile money. SBOs are oblivious to several mobile money services in the country; hence, these services need to better advertise themselves to reach out to SBOs.

Keywords

Mobile money, Financial services, Mobile payments, Farmers, Students, Small Business Owners, Bangladesh

INTRODUCTION

Mobile banking, also known as mobile money, refers to the use of a mobile phone to access financial services. It allows customers to use their mobile phone for carrying out financial transactions such as deposits, withdrawals, account transfer, bill payment, and balance inquiry.

However, mobile money services require customers, including the poor in the developing world, to be digitally and financially literate (Foster and Heeks, 2013). Digital literacy, in this context, requires an individual to have the skills and knowledge needed to operate a mobile device for seeking, managing, and using financial information over the device; whereas financial literacy refers to the inability of an individual to understand how money works or how financial service providers manage money (Mohan, Potnis, and Mattoo, 2013).

The customers in developing nations face a multitude of financial, technological, human-computer-interaction-related, and psychological barriers for using conventional mobile money services (Mohan and Potnis, 2015). For instance, financial barriers stem from the low income levels of the unbanked poor. Technological barriers arise from a lack of 24/7 electricity supply. Mobile phones cannot be charged or used whenever desired. Inconsistent mobile signal strength also limits the ability of customers to use mobile phones anywhere anytime.

Despite all the barriers to using mobile money services, as of December 2015, there were 270 live services in over 90 countries serving 1.9 billion customers. For instance, Bangladesh is among the least literate nations in the world, with literacy rates as much as 30% below the global average, and has more than four mobile money services. Eighty percent of Bangladesh's population lives in rural areas, often accessible only by unpaved, poorly maintained roads or by river transport; however, it is also home to bKash, one of the fastest growing mobile money services in the world, which processes roughly 2 million transactions per day, with a total value of nearly a billion dollar a month within four years after its launch (GSMA, 2016). This fact warrants for an investigation to identify the *factors that influence the ongoing usage of mobile money services* by the customers in the developing world.

Justification for Our Focus on Students, Small Business Owners, and Farmers

It is critical for mobile money services to learn if, which, and how various factors influence the use of their services by a rapidly growing customer base with distinct socioeconomic characteristics, which is a prime motivation for studying the use of mobile money by three distinct groups of customers in a developing nation like Bangladesh with one of the highest number of mobile

banking customers in the developing world. In particular, we surveyed students (one of the largest groups of mobile phone users in Bangladesh), small business owners (one of the richest groups of customers in the country), and farmers (farming is the most popular profession in the country), who were already using a common mobile money service – Dutch Bangla Bank.

The research question for this study was: *What are the factors influencing the use of mobile money services by students, SBOs, and farmers in Bangladesh?*

LITERATURE REVIEW

The following sub-sections set the stage for our theoretical model predicting the factors influencing the use of mobile money by students, SBOs, and farmers in Bangladesh.

Mobile Money and Students

As of 2016, there are 82 universities in Bangladesh. A majority of them are located in urban areas. As a result, every year, millions of students from rural areas migrate to cities for higher education. Mobile money services make it easy and inexpensive for the parents and guardians to remit money to the students (Child and Youth Finance International, 2015). Parents and guardians deposit money in the student's mobile wallet and students withdraw money as per their convenience. Students can use their mobile wallet to recharge his mobile phone or buy groceries, goods, and services from the shops or canteens with mobile wallets. Students can also pay their tuition fees using mobile money services.

Mobile Money and SBOs

A majority of the small business owners (SBOs) in Bangladesh run their business in small rural towns where there are no bank branches. Typically, they keep their daily sale proceeds either in the shop or in their house, which is often risky. Similarly, carrying cash to markets in urban areas for business shopping also involves risk. However, mobile money services facilitate cash deposits in their mobile wallets at the end of the day. SBOs do not carry cash when they visit cities for buying wholesale goods. They pay for goods using mobile wallet by transferring funds to the online account of the wholesale sellers. SBOs in rural areas also benefit from the SMS-based gateway platform used by rural banks to remind them about upcoming loan payments, which saves the banks money by not having to call customers to remind them about payments and has proven effective at reducing late payments (Kumar, McKay, and Parker, 2010). When a text message is sent before or on the payment date, repayment rates improve significantly with late payments dropping by almost 30 percent.

Mobile Money and Farmers

Farmers represent over 40% of workforce in the developing world. A majority of them live in rural areas. Unless they are able to use mobile phones, they would not be able to access and use mobile money. Facilitating conditions control farmers' access to and use of mobile money services. Farmers work long hours and take few breaks from work, so they typically do not have enough time to travel to local bank branches or stand in queue for carrying out financial transactions (Davidson and McCarty, 2011). Mobile money empowers farmers in developing countries, strengthening social cohesion and reducing inequality (Pénicaud and Katakam, 2013). Farmers get government allowances and subsidy through their mobile wallet, and can use this wallet money for purchasing fertilizers, insecticides, seeds and irrigation water (Potnis and Demissie, 2009). Hence, benefits of using mobile money services are likely to incentivize farmers to keep using these services. Moreover, farmers in the developing world are likely to have less education, which could increase the amount of effort required to attain digital and financial literacy for using and benefitting from mobile money services.

Hence, we propose the following hypotheses while seeking answer to the research question.

H1: Benefits of using mobile phones encourage students, SBOs, and farmers to use mobile money.

H2: Degree of efforts discourage students, SBOs, and farmers to use mobile money.

H3: Facilitating conditions encourage students, SBOs, and farmers to use mobile money.

METHODOLOGY

We used convenient sampling to identify students, SBOs, and farmers, who are customers of Dutch Bangla Bank (DBB). With the help of DBB agents, we collected data in rural and urban parts of Bangladesh. DBB agents provided assistance to illiterate and semi-literate customers to complete the survey.

We considered the following independent variables for studying the effect of three constructs – benefits, efforts, and facilitating condition – on the use of mobile money services by our study participants:

- a. Benefits: Speedy Payment, Increased Productivity, Cost Efficiency, Time Efficient, and Enhanced Quality of Life

- b. Efforts: Ease of Becoming Skillful, Easy to Use, Ease of Learning, and Amount of Mental Effort
- c. Facilitating Conditions: Family Support and Encouragement, Technology Infrastructure, and Knowledge to Use Mobile Phones

We developed 5-item, 4-item, and 3-item scales for benefits, efforts, and facilitating conditions respectively using the past literature on information technology adoption (Davis, 1989; Pavlou and Fygenson, 2006).

We ran regression analysis on the independent variables with intention to use mobile money service as the dependent variable. In addition, our survey asked study participants to denote: the most important reason for maintaining a mobile money account, and key benefits of and challenges for using mobile money.

FINDINGS AND DISCUSSION

A majority of study participants are male in the age group of 21 through 30 with a high school diploma. Table 1 shows key demographic differences in the three sample populations.

	Students (n = 41)	SBOs (n = 31)	Farmers (n = 81)
Age (in years)	≤ 20: 9% 21-30: 91%	≤ 20: 10% 21-30: 33% 31-40: 50% 41-50: 7%	≤ 20: 2% 21-30: 51% 31-40: 37% 41-50: 5% 51-60: 5%
Education	HSD: 20% A: 12.5% B: 50% M: 17.5%	Less than HSD: 15% HSD: 50% A: 10% B: 15% M: 10%	Less than HSD: 45% HSD: 25% A: 20% B: 5% M: 5%
Gender	Female: 12% Male: 88%	Female: 0% Male: 100%	Female: 7% Male: 93%
Monthly Income (in USD)	≤ 100: 82% 101-300: 18%	≤ 100: 20% 101-300: 33% 301-600: 40% > 600: 1%	≤ 100: 25% 101-300: 62% 301-600: 12% > 600: 1%

HSD: High School Diploma, A: Associate Degree,
B: Bachelor's Degree, M: Master's Degree

Table 1. Demographics of Respondents

Mobile Money: Benefits and Challenges

Anytime anywhere availability of mobile money is the most important reason for maintaining a mobile money account by all three groups of study participants. They also reported the following key benefits of using mobile money (see Table 2). Remittance and savings are the two most important benefits of mobile money service for students. A large majority of SBOs use mobile money for carrying out daily financial transactions. Farmers equally use mobile money the most for savings, recharging their phones, and daily transactions.

When asked about challenges to using mobile money, students reported lack of enough financial resources as a major challenge to benefit from mobile money service, whereas SBOs are unaware of the existing mobile money services, which prevents them exploiting this new channel for financial transactions (see Table 3). Hence, it is important for mobile money services in Bangladesh to advertise their services and products through appropriate media for reaching out to the market of SBOs in the country. As expected, farmers, due to their comparatively lower education, experience several critical challenges like lack of financial resources, digital illiteracy, and financial illiteracy, which prevent them from using mobile money.

Key Benefits	Students	SBOs	Farmers
Remittance	25%	10%	15%
Savings	25%	30%	25%
Bill Payment	5%	0%	2%
Direct Deposit of Salary	0%	0%	8%
Buy Goods and Services	5%	0%	0%
Recharge Mobile Phone	20%	0%	25%
Miscellaneous Daily Transaction	20%	60%	25%

Table 2. Key Benefits

Key Challenges	Students	SBOs	Farmers
Limited or no Internet connectivity	10%	10%	5%
Lack of financial resources	30%	10%	25%
Lack of basic skills to operate mobile phones	10%	5%	25%
Unaware of existing mobile money services	15%	75%	25%
Lack of technical support	5%	0%	2.5%
Lack of trust (i.e. security or confidentiality of data)	25%	5%	10%
Lack of time	5%	0%	7.5%

Table 3. Key Challenges

Regression Analysis

Considering the R square scores, it becomes clear that our theoretical model predicts the intention of SBOs for using money service better than that of farmers and students (see Table 4). Benefits of using mobile money, efforts required to use mobile money, and facilitating conditions hardly affect students' intention to use mobile money. Negative correlation coefficients for "Efforts" suggest that the degree of effort required to use mobile money service does not discourage students and SBOs from using mobile money service, whereas for farmers with comparatively less education, the degree of effort discourages them from using mobile money service. This fact emphasizes the significance of agents in making mobile money services popular among illiterate and semi-literate populations.

	Benefits (H1)	Efforts (H2)	Facilitating Conditions (H3)	R ²
Students	0.06	-0.1	0.28	3.95%
SBOs	.15**	-.01**	.32*	19.08%
Farmers	.11*	.41***	.03**	14.88%

*: P<0.1

**: P<0.01

***: P<0.001

Table 4. Regression Analysis

CONCLUSION AND IMPLICATIONS

Rarely any study in the past has compared the factors shaping the use of mobile money services by groups of customers with distinct socioeconomic characteristics in Bangladesh, which is the unique contribution of this study.

Mobile money plays a key role in the economic development of students, SBOs, and farmers in Bangladesh. Remittance, savings, daily financial transactions, and recharging of mobile phones emerged as key benefits of using mobile phones for the respondents. Students seem to care more about security and confidentiality of data communicated over mobile devices. Financial and digital illiteracies, and hence efforts, pose a major challenge for farmers to use mobile money, which suggests that mobile money services should deploy agents to help illiterate and semi-literate customers carry out transactions.

Considering the sample size, study finding cannot be generalized. It is necessary to exercise caution when interpreting the findings. Statistical analysis suggests that factors other than benefits, degree of efforts, and facilitating conditions mostly influence the use of mobile money by study participants. The speed of transaction, low service fees, and attitude affect the rate of adoption of mobile money by students in developing nations. Hence, in the future, we plan to study the role of characteristic features of mobile money service, and psychological and cognitive factors in shaping the use of mobile money in Bangladesh.

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REFERENCES

1. Child and Youth Finance International. (2015). An innovative approach for financial inclusion: The case of Bangladesh. *Bangladesh Bank, School Banking*.
2. Davidson, N., and McCarty, Y. (2011). Driving customer usage of mobile money for the unbanked. *GSMA Mobile money for the unbanked*. London, UK.
3. Davis, F. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology, *MIS Quarterly*, 13, 3, 319-340.
4. Foster, C. and Heeks, R. (2013). Innovation and scaling of ICT for the bottom-of-the-pyramid, *Journal of Information Technology*, 28, 4, 296-315.
5. GSMA. (2016). The mobile economy: 2016. <http://www.gsma.com/mobileeconomy>.
6. Kumar, K., McKay, C., and Parker, S. (2010). Microfinance and mobile banking: The story so far. *Consultative Group to Assist the Poor*. 62 (Jul. 2010).
7. Mohan, L., Potnis, D., and Mattoo, N. (2013). A pan-India footprint of microfinance borrowers from an exploratory survey: Impact of over-indebtedness on financial inclusion of the poor, *Enterprise Development & Microfinance Journal*, 24, 1, 55-71.
8. Mohan, L., and Potnis, D. (2015). Mobile banking for the unbanked poor without mobile phones: Comparing three innovative mobile banking services in India. In *Proceedings of the 48th Hawaii International Conference on System Sciences*, (Kauai, HI, January 5-8), 2168-2176.
9. Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*. 30, 1, 115-143.
10. Pénicaud, C. and Katakam, A. (2013). State of the industry 2013: Mobile financial services for the unbanked poor. *GSMA Mobile Money for the Unbanked*. London, UK.
11. Potnis, D. & Demissie, D. (2009). Barriers to Socio-economic Opportunities in Africa: An e-Government Perspective. Poster presented at *iSociety: Research, Education, Engagement – iConference*, (Chapel Hill, NC, February 8-11), 1-4.