



Research Article

Socio-Economic Factors of Mobile Money in Pakistan

Ijlal Mansoor* 

Economics department, University of Karachi, Karachi, Pakistan
E-mail: ijlalmansoor@gmail.com

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Abstract: World technologies have changed the perspective of a consumer; at one time, people need more time to travel than communicate with long-distance living relatives. The telecommunication industry has gained significantly since the invention of the transistor. In the last century, the most valuable development in telecommunication services was the development of the mobile phone. The emergence of information communication and the mobile phone industry has changed the money transmission mechanism. Mobile money is one of the new mechanisms in financial services is that accessible through mobile phones, and it allows people to make their financial transactions via mobile phones. This type of mobile money service enhanced the social life of people and it also generates economic benefits for them. This study aims to investigate the socio-economic determinants of mobile money services in Pakistan and how this service competes with traditional financial systems. To examine the determinants of this research, a study based on Karachi, as a sample of this research. Karachi is the largest metropolitan city in Pakistan and it has the highest internal migration rate in Pakistan. Primary and secondary data were used to analyze the determinants of mobile money in Pakistan. The study reveals that migrated people are less prefer to use mobile money services due to multiple reasons. In addition, the young population has a more frequent use of mobile money. The study concludes that way, mobile money services have enormous potential in Pakistan and it makes a tough call to its competitors by accessibility and affordability. Pakistan's government should introduce more players in the market to create a healthy competition and reduce the unbanked population.

Keywords: financial inclusion, mobile money, logit regression, Pakistan

JEL Code: O1, O3, C1, G2

1. Introduction

Recently, world technologies have significantly changed the perspective of consumers; at one time, people usually need more time to spend traveling than communicating with long-distance living relatives. Globally, the telecommunication industry has gained exponentially since the invention of the transistor. The demand of telecommunication services are significantly raise, which shows that consumer's accessibility has enhanced with the development of telecommunication services (Wadada, 2019). The notable change is the opportunity for mobile phones to propel development due to their ability to easily remove the infrastructure barriers in remote and rural areas. In the last century, the most valuable development in telecommunication services was to develop mobile phones. In the

beginning, mobile phones were commonly used for communication purposes but nowadays, most countries particularly developing nations are also moving towards financial inclusive services. Today, the mobile revolution is sweeping the world and this is evidenced by the fact that there are over 2 billion people who do not have bank accounts (Wadada, 2019).

Mobile money technology is one of the latest instruments, introduced in mobile phones. Mobile money enables mobile phone owners to deposit, transfer, and withdraw funds without owning a bank account. It is therefore distinct from mobile banking, which allows access to one's existing bank account via a mobile phone (Bill & Melinda Gates Foundation, 2021). Mobile money service is used to assist the billions of people who have limited or no access to financial services (Kironget, 2014). People make their financial transactions through mobile money for many reasons. They can use mobile money services to pay their utility bills, business payments, funds transfer to their friends and family, and pay for goods in merchant shops (Kenenchi & Uchenna, 2014). Before introducing the mobile money service, most people in developing countries used traditional payment methods such as money orders. These methods are frequently used by low-income people, daily wagers, and remote areas people because of the lack of accessibility to banking services (Agarwal, 2016).

Mobile money has a significant and positive impact on the social, personal, and business of people (Mulu-Mutuku & Gichuki, 2017). It also positively affects an individual's payment, decision-making, consumption, and saving patterns (Apiors & Suzuki, 2018). Mobile money users have the benefits of incurring fewer transaction costs and saving their traveling time because mobile money agents are easily accessible in nearby places (Munyegera & Matsumoto, 2018).

In recent times, many studies have show that mobile money service is more popular in resource constraint regions due to low transaction cost, ease of accessibility, and flexible timing. According to the industrial report on mobile money, 1.2 billion users have registered their mobile money accounts across the world. However, South Asia has the second-highest mobile money account in 2021 (Andersson-Manjang & Naghavi, 2021). Financial inclusion services have increased because of high unbanked populations in developing economies regions. Unfortunately, among South Asian countries, Pakistan has the lowest number of mobile money account holders because Pakistan is a low and middle-income economy with a prevailing low rate of literacy and financial inclusion services. Pakistan's population has serious concerns about accessibility, affordability, and understanding of banks' products and services (Noreen et al., 2022). Although the financial inclusion survey report of Global Findex, more than 6 percent of the world's adult unbanked population belongs to Pakistan (Global Findex Database, 2017). In these circumstances, the government of Pakistan announced the financial inclusive program one and a half decades before (Noreen et al., 2022). Adopting and implementing different strategies and policies by the government of Pakistan and launching financial inclusive programs by the State Bank of Pakistan during the last decade, the literacy rate of financial inclusion in Pakistan has increased conventionally from 10 percent in FY 2010-2011 to 23 percent in 2020-2021.

1.1 History of mobile money in pakistan

In Pakistan, Telenor "Easy Paisa" pioneered the introduction of mobile money service and it serves approximately five million customers a month across the country. Telenor also introduced a (Over-the-counter) OTC mobile money facility in Pakistan, an entirely new model that did not require registration for electronic wallets (McCarty & Bjaerum, 2013). After the success of Telenor "Easy Paisa", similar services have also been started to be provided by other telecom companies in Pakistan. Figure 1 demonstrates the brief history of mobile money evolution in Pakistan. In the current status of mobile money service providers, major telecom companies and commercial banks are offering branchless banking services in Pakistan. They include UPaisa, Jazz Cash, TimePey & Mobile Paisa, Zindigi-JS bank, HBL Konnect-HBL, and UBL Omni-UBL.

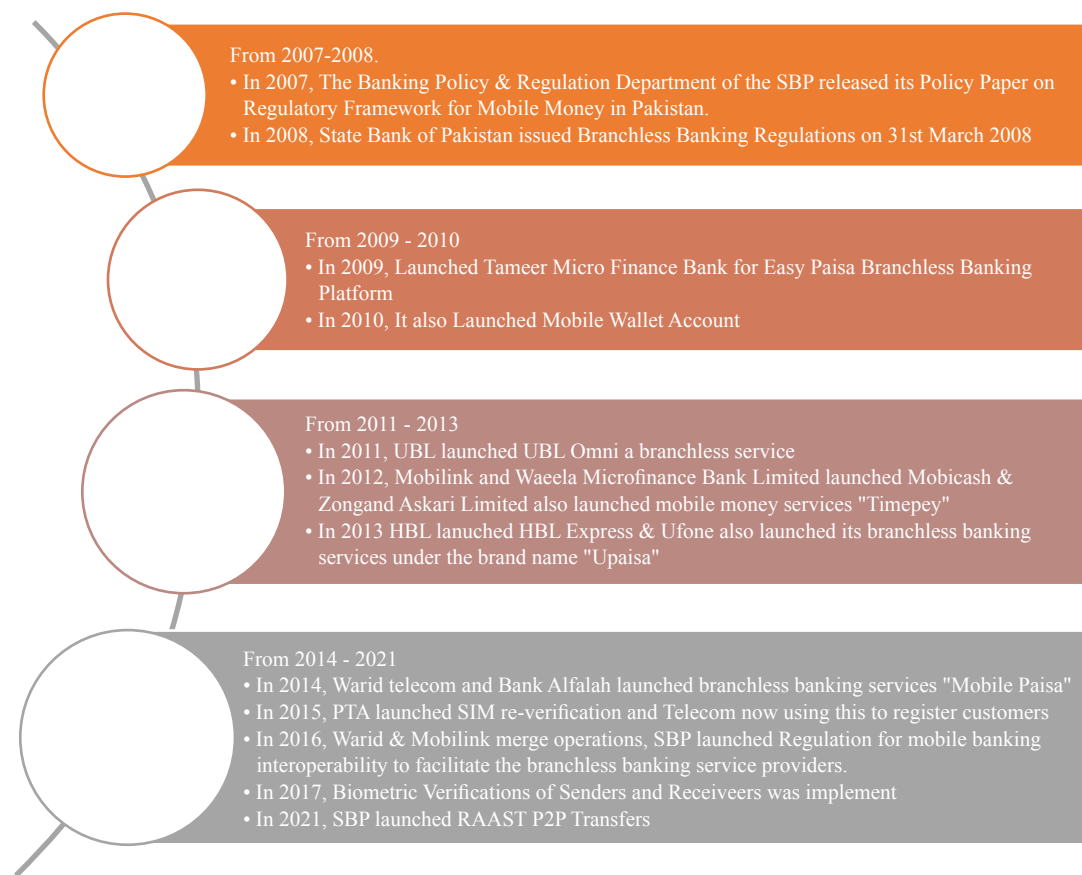


Figure 1. Short History of Mobile Money in Pakistan

Source: Author

1.2 Research objective

In this study, the literature focuses on financial inclusion services in developing countries and the determination of factors affecting financial inclusion services. Most developing countries are major concerned about the cash-based transactions or unbanked populations, and Pakistan is one of those countries, which has significant cash-based business and personal transactions. The majority of people in Pakistan avoid bank accounts due to multiple reasons. For the last one and half decades, the government of Pakistan was working on a new mechanism of the cashless recorded transaction system.

The research questions in this study is to examine what are the socioeconomic determinants of mobile money that influenced in Pakistan, which income groups are more frequent users and how some formal banking system effects on branchless banking services in Pakistan and try answering the question how these variables impact the velocity of mobile money transactions in Pakistan.

The rest of the paper is organized as follows. Section-II provides the research methodology. Section-III provides an empirical analysis of the study, while Section-IV provides the conclusion of the paper.

2. Research methodology

The current study explores the socioeconomic determinants of financial inclusion in Pakistan. The empirical analysis of this study is divided into two sections: the first section is primarily based on secondary data, while the other

section is based on primary data analysis of financial inclusion. The secondary data analysis is subdivided into two parts: the first part of the secondary data examined the e-banking transformation, while on the other part of this section investigates the branchless banking adoption and transactional trend over time in Pakistan. The primary data section focused on regression modeling.

On the other hand, the Primary data of this study were collected using a structured questionnaire and 200 sample sizes of data were used for analysis. The study used three districts of Karachi, such as District Malir, District East, and District Central. Secondary data were collected from Electronic Banking Statistics, a Quarterly report on Branchless banking, and these reports were published by the State bank of Pakistan.

The study examined the financial inclusion behavior in Pakistan's most populated city-Karachi is a prodigious metropolitan city of Pakistan. This mega city generates major economic activities across the country, it experienced a substantially large size of slum area in Pakistan, and most of the lower-income earners are more prefer to migrate to this region for better job opportunities. The research used the Logit regression model for primary data analysis.

2.1 Modeling framework

The following regression model is estimated to explain the behavior

$$L_i = \beta_0 + \beta_1Mg + \beta_2Edl + \beta_3Age + \beta_4Mbb + \beta_5Bao + \beta_6TR + \varepsilon$$

Where L_i represents the dependent variable, which is mobile money, while β_0 is the intercept of the equation. However, β_1 to β_6 represent coefficients of Migration (Mg), Education level of respondents (Edl), Age of respondents, Mobile banking users of respondents (Mbb), Bank account holder of respondents (Bao), and Time required to reach mobile money agent (TR).

3. Empirical analysis of the study

This section of research consists of two parts: the first part provides descriptive analysis and the second part represents regression modeling. However, descriptive statistics are categorized into two sub-parts: the first sub-part is based on time trend analysis of electronic banking statistics and branchless banking, while another sub-part of descriptive statistics demonstrates the demographic characteristics of participants. The second part of this section investigates the relationship between financial inclusion facilities and socioeconomic variables.

3.1 Descriptive statistics

This section has been divided into two categories and examines both primary and secondary data types. The first part of the analysis is based on secondary data analysis, while the second part of this section analyzes demographic and econometrics modeling, which determine the relationship between financial inclusion variables and other socioeconomic variables.

3.1.1 Secondary data-analysis

The analysis of this section is based on secondary data and it examines Fintech advancement in both formal and semi-formal instruments in the last 10 years. The descriptive analysis of this section demonstrates the transformation and accessibility of new financial instruments in Pakistan.

Figure 2 depicts the volume (No. of Transactions) and size (Amount of Transactions) of electronic banking transactions in the last 10 years. This trend analysis shows Pakistan's banking system has enhanced its performance and capacity. The volume of mobile banking transactions has increased since FY 2010, but in the last five years, e-banking transactions have exponentially increased by 250%, with 19 million transactions recorded in 2016-2019. However, the size of e-banking has incredibly increased from PKR 2 billion in the FY 2010-2011 to PKR 756 billion in the FY 2019-2020.

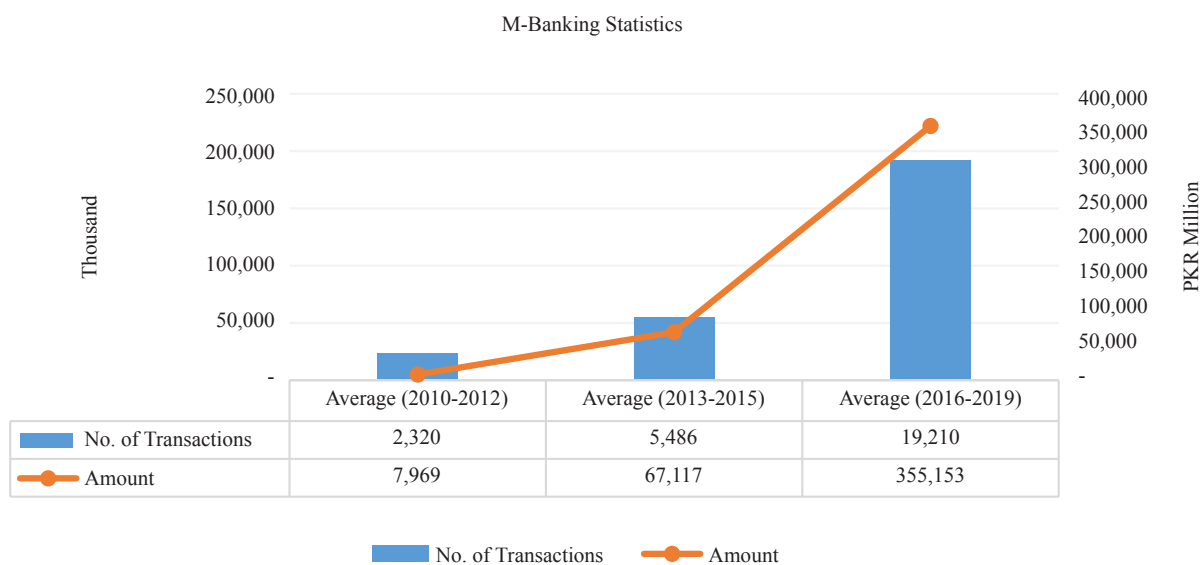


Figure 2. Mobile Banking Analysis

Source: E-Banking Statistics, State Bank of Pakistan-2020

Table 1. E-Banking Highlights-Category Wise

Mobile Banking Transaction			
Items	2010-2012	2013-2015	2016-2019
No. of Transactions-Thousands			
Payment Through Mobile	201	396	962
Utility Bills Payment	1,912	3,502	8,701
Intra Bank Fund Transfers	199	743	5,039
Inter Bank Fund Transfer (IBFT)	8	850	4,507
Amount-Million PKR			
Payment Through Mobile	344	1,220	35,098
Utility Bills Payment	2,455	4,521	9,894
Intra Bank Fund Transfers	4,887	26,967	164,461
Inter Bank Fund Transfer (IBFT)	283	34,117	172,945

Source: E-Banking, State Bank of Pakistan-2020

The trend analysis of the volume (No. of Transactions) and size (Amount of Transactions) of e-banking by major transactional categories are shown in Table 1: this table represents the transformation of electronic fund transferability

in Pakistan. In the last 10 years, the major use of e-banking for utility bill payments. On average, 8.7 million utility bills have been paid to the customer by mobile banking for the period of FY 2016-2019, while 22% of bank account holders used inter-bank fund transfer (IBFT), and transactions were recorded by PKR 172.95 Billion.

Table 2. Branchless Banking Highlights-Category Wise

Funds Transfer-Category Wise			
Items	2011-2013	2014-2016	2017-2019
Values-USD Million			
Account-Account	757.5	1,719.2	16,791.7
Person-Person	591.4	5,941.5	4,594.2
MW-Person	12.6	145.5	419.8
Government-Person	56.5	832.2	1,107.2
Bill Payment and Top-Ups	231.5	1,869.6	3,353.3
No. of Transactions-Million			
Account-Account	3.7	29.6	144.3
Person-Person	38.7	113.0	68.6
MW-Person	2.0	3.2	8.1
Government-Person	2.3	19.1	23.0
Bill Payment and Top-Ups	53.4	155.7	530.3

Source: Branchless Banking Report, State Bank of Pakistan

Table 2 provides the transformation of branchless banking system categories since FY 2010-2011, the first phase of the branchless banking system, people were preferable of a trustful method such as account-to-account or person-to-person funds transfer. After a few years of development in fintech technology in Pakistan, people were diverted towards branchless banking, especially in the Covid-19 period, people were more used to bill payments and mobile top-ups. On average, bill payments and mobile top-ups have recorded US\$ 3.35 billion amount of transactions in the year 2017-2019.

3.1.2 Primary data-analysis

This part of the study examines the relationship between financial inclusion and its determinants in Pakistan. This section of the empirical analysis is based on a case study of Karachi, which explains the transferability, accessibility, and frequency of mobile money services in Pakistan.

Figure 4 highlights the age group of participants, which illustrated that more than 80% of respondents aged lie between 18 years and 40 years. However, the average age of the respondents was 30.94 years. Out of 200 samples, 76% of the study sample were male respondents, whereas, 24% were female respondents.

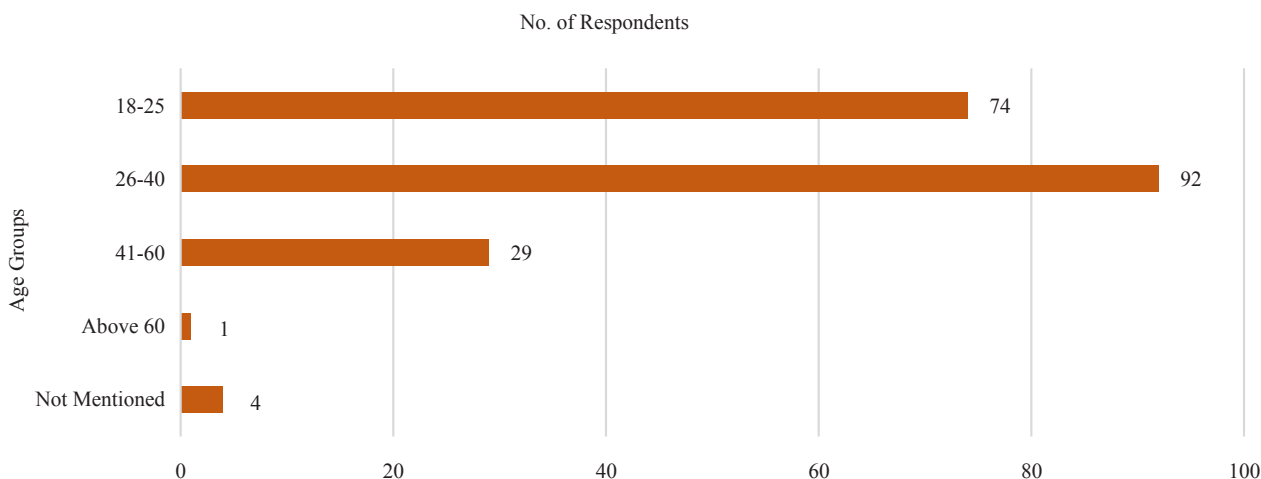


Figure 3. Age Group-Survey Participants

Source: Author

The educational background information of participants in the survey is shown in Figure 3: 88% of participants have passed the matriculation and intermediate level of education. However, less than 50% of respondents are completed graduation and master’s degrees.

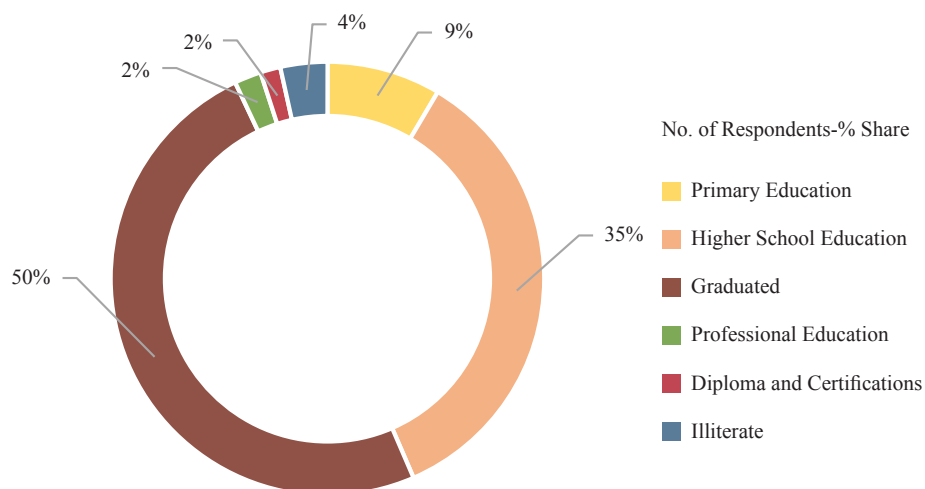


Figure 4. Education Level-Survey Participants

Source: Author

Figure 5 shows that 45.5% of participants in this survey migrated individually to Karachi while 33% of respondents migrated along with their families. Further results of the study stated that more than three of the fourth respondents are using mobile money services, whereas, 58% of respondents are bank account owners. In addition, it also highlights that 46% of participants are used internet banking facilities. Figure 5 also reveals information about money order users and results reflect that 38% of participants used money order service.

Descriptive Analysis of Survey

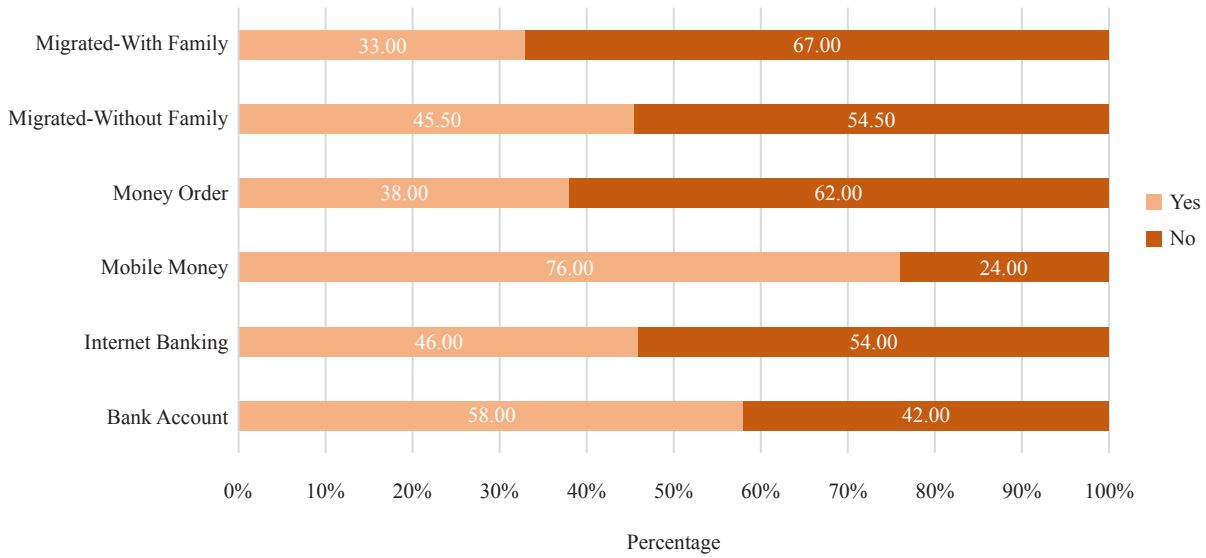


Figure 5. Descriptive Analysis-Highlights

Source: Author

3.2 Results of regression

Table 3 depicts that Migration (Mg), Education Level (Edl), Age, Mobile Banking (Mbb), Bank Account Owner (Bao), and Traveling time required to reach mobile money agents (TR) have a negative relation with mobile money users and odd ratios of all these social and economic variables are also provided strong evidence to support the negative relation between dependent and independent variables. However, mobile banking (MOB), and the time required to reach a mobile money agent (TR) are statistically significant variables. While all other social and economic variables are shown statistically insignificant in the results.

Table 3. Logit Regression Estimation

	B	S.E	Sig.	Exp (B)
Constant	7.974	1.446	0.000	2,905.059
Mg (1)	-0.542	0.459	0.238	0.582
Edl (1)	-0.586	0.465	0.208	0.557
AGE	-0.044	0.022	0.049	0.957
Mbb (1)	-1.526	0.455	0.001	0.217
Bao (1)	-0.708	0.425	0.096	0.493
TR	-0.376	0.082	0.000	0.686

Source: Author

The analysis of the above regression concludes that mobile money service is more convenient to use for low educated and young age respondents. Educated people are more prefer to use the formal banking systems, and the majority of bank account holders are also used mobile banking facilities. On the other hand, low-educated people are trying to avoid a formal banking system due to the procedure and documentation of opening an account. Furthermore, old-age participants in this survey more preferred to use formal financial instruments. Because most old age people are unfamiliar with smartphone technology and they are also unaware of the mobile money funds transfer mechanism.

The analysis also reveals that mobile money facility has significantly influenced the payment methods of people due to the less transaction cost and ease of access in terms of less time required to meet mobile money agents. However, migrated people are less likely to use mobile money services because migrants are still unaware of mobile money services. The insignificance of a migrated variable may be that the recipients are facing educational barriers or the mobile money agents do not easily accessible to recipients that migrated people are less prefer to use mobile money.

4. Conclusion and recommendations

Mobile money technology is one of the latest instruments introduced in mobile phones. Mobile money is popular in unbanked populations and resource constraint regions due to less documentation, less transaction cost, flexibility in timing, and ease of access. In recent times, the effective development and advancement in the mobile phone industry may cause widely spread of mobile money services across the world.

The low-educated study concluded that all social and economic variables negatively correlated with mobile money usage. It is more popular and commonly used by low-educated and younger people in society. In addition, formal bank account holders and mobile banking users are more preferred to use formal banking channels. Last, participants of this survey were more likely to use mobile money if the mobile money agents/shop are available in their nearby location. The study also concludes that mobile money competes with traditional payment methods and affects human life by generating social and economic benefits.

4.1 Recommendations

The study recommends the policy that telecom companies and the government must start an awareness campaign about mobile money services because Pakistan still has more than 100 million adult populations that remain unbanked. The government of Pakistan should be introduced a secure, easier, and tax-friendly payment mechanism, which connects P2P in courier services i.e., used for domestic or international, food chain payment, e-commerce shopping payments i.e. Daraz, Olx, and other social media platforms, Online payment of transportation services i.e. intercity transportation payments or intra-city transportation payments through any mode of the cashless payment system.

Conflict of interest

The author declares that there is no conflict of interest regarding the publication of this paper.

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