



Research Article

Financial Inclusion in post COVID scenario: A case study of Pakistan

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Financial
Inclusion;
Mobile Money;
Branchless
Banking;
COVID-19

ABSTRACT

The world is shifting from conventional, time-consuming ways of transaction to the world of mobile phones where they can make all their transactions with easy access, cost-effective, and sustainable ways. In Pakistan after 2008 state banks regularized branchless banking. The purpose of this study is to analyze the trend of mobile money in the last six years' time period. The research uses quarterly data from 2015-2020 related to factors impacting mobile financial inclusion in Pakistan like mobile wallet transactions, over the counter transactions, total transaction value and volume, average daily transactions, mobile money accounts and usage segmented by gender, active accounts, agent data, and deposit amounts. We have analyzed that the trend of mobile money has increased in the last six years' time period. The volume of mobile money in different provinces of Pakistan and Pakistan as a whole is increased. On the other hand, both males and females have an active role in financial inclusion. Though the ratio of the female is relatively low as compared to the men but overall, both have a significant role towards mobile money.

Submitted:
26 December 2023

Revised:
10 February 2024

Accepted:
17 February 2024

1. INTRODUCTION

Financial inclusion through mobile money and branchless banking has grown substantially in Pakistan over the last decade. Various banks and telcos have launched mobile money platforms like Easypaisa, Jazzcash, Upaisa etc. Regulations around branchless banking and interoperability have also helped drive adoption. As a result, the use of mobile money for transactions and payments has increased, especially during COVID. There is still room for improving financial inclusion further. Despite growth, adoption and usage rates of mobile money vary greatly by gender, income levels and region. Women and lower income groups tend to have less access and ability to leverage mobile money (FINCA, 2017). There are also gaps in more advanced services like loans, savings and insurance via mobile platforms. Going forward, recommendations include forming policies to drive mobile enabled financial services for women and marginalized groups. There is also potential for agricultural mobile services for farmers. Improving interoperability, expanding use cases beyond payments like credit and insurance products, and awareness campaigns could further accelerate Pakistan's financial inclusion through digital channels. Regulators play a key role in creating an enabling environment.

2. LITERATURE REVIEW

Financial inclusion is on the rise globally, including in Pakistan. It is measured through metrics like account ownership and active usage of financial services via banks, mobile money platforms etc. Pakistan still has room to improve women, poorer segments tend to have lower access and usage. Regulators have made financial inclusion a policy priority, via legislations, industry commitments, and digital advancements aimed at easier access (Pasha, 2016). This includes branchless banking models, mobile money adoption enabled by Pakistan's high mobile penetration. However, there are still gaps between availability and actual adoption of these new financial services. Further research is required to understand what drives consumer acceptance of mobile financial services, beyond tech availability (CGAP, 2019). An integrated model combining TAM, TPB and other adoption models is proposed. This incorporates perceived credibility, self-efficacy and consumer resources as additional factors, beyond the standard perceived ease of use and usefulness. Recommendations include building consumer trust and targeted campaigns to improve ability and willingness to use mobile financial services across user segments (Abbass et al., 2019). Closing these adoption gaps can help improve financial inclusion in Pakistan.

2.1. THEORIES RELATED TO ADOPTION OF TECHNOLOGY

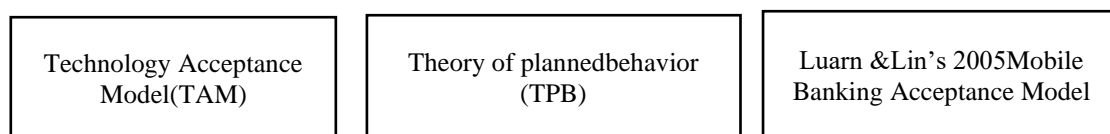


Fig. 1. Theories related to adoption of technology

2.2. GOVERNMENTAL REGULATORY BODIES

The State Bank of Pakistan has played a pivotal role in promoting financial inclusion through progressive policies enabling branchless banking models and mobile money growth. This includes the 2008 e-banking regulations and 2011 amendments emphasizing inclusive digital financial services, integrated biometric ID infrastructure with NADRA, and interoperability mandates. Consequently, active mobile money accounts have surged from 0.24 million to over 4.7 million between 2011-2021 (Raza et al., 2019). However, usage remains below potential. Despite early traction, most transactions still occur over-the-counter and expanding retail agent networks faces obstacles. There are also adoption gaps - urban inclusion is at 20% versus 13% for rural areas (FIGI, 2021). Remittance digitization, government payments and gender-focused strategies can drive further adoption among vulnerable economic groups. But demographic and regional barriers persist due to infrastructure limitations and attitudinal variance towards technological innovations (Rastogi & Ragabiruntha, 2018). Targeted strategies aligned to population nuances must complement nationwide infrastructure strengthening. SBP policies and emerging mobile money platforms still need broader ecosystem reinforcement across stakeholders like merchants, agents and consumers themselves (CGAP, 2019). Impact assessments guiding evidence-based policies will thus be integral for sustainable models at scale - bringing the fully banked at par with the underserved towards technology-enabled inclusion.

2.3. FINANCIAL INSTITUTIONS IN PAKISTAN

Pakistan's mobile money landscape is currently dominated by conventional banks, which account for 93% market share, while microfinance banks have 7% share. However, their vast branch networks limit financial inclusion in remote areas. To address this, branchless banking models have emerged allowing access via retail agents, with telcos partnering with microfinance banks to offer services like EasyPaisa and Jazz Cash. While branchless banking now facilitates transactions for around 12 providers and over 0.5 million agents, the latest regulatory shift is the 2019 introduction of Electronic Money Institutions (EMIs) non-banks that can offer mobile wallets for payments without needing a banking license (FIGI, 2021). As EMIs and bank-telco partnerships disrupt the landscape, regulation continues to evolve to expand access. However, being nascent, their impact is still being evaluated even as the banking sector retains its dominant position for now. Assessing these emerging frameworks' efficacy can inform policies to advance mobile money-enabled financial inclusion in Pakistan.

2.4. TYPES OF FINANCIAL ACCOUNTS

According to the stringency of the requirements for opening and maintaining formal financial accounts in Pakistan, they are categorized into two groups. Accounts with strict account establishment and maintenance criteria, such as know-your-customer (KYC) and minimum balance restrictions, as well as stringent transaction limits, fall into the first category (Pasha, 2016). Accounts with simpler opening and maintenance requirements, as well as lower transaction limitations, fall into the second group (Zulfiqar et al., 2016).

Table 1. Characteristics of various accounts in Pakistan, 2020

Requirement Level	Type of Account	KYC Requirement	Minimum Balance Requirement	Transaction Limit	Providers	Minimum Mobile Technology Required
High requirements	Traditional bank account	Computerized National Identity Card (CNIC) Biometric verification Proof of employment or business	PKR 10,000 for checking account None for savings account	Unlimited	Banks	Smartphone
Low requirements	Branchless banking account or mobile money wallet	CNIC or equivalent Biometric verification	None	PKR 50,000 per day	Banks, microfinance banks	Basic mobile phone
	Asaan banking account	CNIC or equivalent Biometric verification	None	Total debits per month: PKR 500,000	Total debits per month: PKR 500,000	Smartphone
	EMI account	CNIC or equivalent Biometric verification	Information not available	PKR 10,000 per day PKR 200,000 per month	Banks, microfinance banks, and nonbanking entities	Basic Mobile phone

2.5. MOBILE MONEY

Mobile phones are widely used in Pakistan, with over 60% of adults having some type of mobile phone. Specifically:

- 38% of Pakistani adults have basic phones.
- 12% have feature phones.
- 17% have smartphones.

Basic phones still make up the largest proportion, smartphone usage is also notable at 17%. Given the utility of smartphones for accessing the internet, apps, and more advanced services, this smartphone penetration suggests there is potential to leverage mobile phones for things like mobile money, digital financial services, information services, and other tools for economic development in Pakistan (Kiani, 2019). There are still challenges in terms of digital divides and usage gaps between different demographics and regions of the country (Abbass et al., 2019). Pakistan has relatively high rates of mobile phone ownership compared to some other developing countries (World Bank, 2021). This foundation of widespread mobile phone access creates opportunities to build inclusive digital ecosystems, provided steps are taken to avoid exacerbating digital inequalities.

2.6. GENDER

Pakistan has seen substantial growth in branchless banking and mobile money accounts over the last decade, driven by supportive regulations and private sector participation. Usage remains below potential as adoption gaps persist between income segments, rural vs urban areas, and men vs women. Addressing infrastructure constraints and socio-cultural barriers limiting adoption among marginalized demographics is crucial for broader financial inclusion (Khan & Rashid, 2015). As conventional bank dominance gives way to new models like bank-telco partnerships and emerging players like Electronic Money Institutions, the regulatory focus must remain on expanding access and utilization amongst the unbanked and underserved while balancing innovation, consumer protection and systemic risk (Kiani, 2019). Impact assessments and evidence-based policies will be key for the next wave of progress in digitizing payments and driving mobile money-centered inclusion in Pakistan.

2.7. COVID-19 AND MOBILE MONEY

Pakistan implemented lockdowns and movement restrictions due to COVID-19 from March-May 2020. This led to a rise in mobile money transactions for bill payments, transfers, deposits/withdrawals, remittances and more. Reports show increased reliance on contactless mobile wallets (Abbass et al., 2019). Globally, the pandemic threatened growth and disproportionately affected vulnerable sections without access to financial services. Digital transfers became vital for governments and humanitarian agencies to disburse monetary assistance. Mobile money is more ubiquitous than other digital payment forms in developing countries (CGAP, 2019). It offered resilience during lockdowns when banking access was constrained. Mobile money providers enabled timely delivery of pandemic-related fiscal aid to the unbanked due to their market insight and partnerships. Consumers

shifted more towards digital payments owing to health risks of cash usage. So COVID-19 accelerated adoption of mobile financial services out of necessity. This holds significance for long-term financial inclusion.

Variables	Source
Mobile wallet transactions	Karandaz data portal
Over the counter transactions	Karandaz data portal
Total transactions value	Karandaz data portal
Volume of mobile money	Karandaz data portal
Average number of transactions per day	Karandaz data portal
Mobile money accounts	Karandaz data portal
Mobile money transactions per day	Karandaz data portal
Mobile money accounts of male	Karandaz data portal
Mobile money accounts of female	Karandaz data portal
Active accounts	Karandaz data portal
Total agents	Karandaz data portal
Total active agents	Karandaz data portal
Total deposit and total average deposits	Karandaz data portal

3. METHODOLOGY

The research methodology provides the basis to judge the validity of the research. It lays out the techniques used in the study including the variables, location, and sample size. The research uses quarterly data from 2015-2020 related to factors impacting mobile financial inclusion in Pakistan like mobile wallet transactions, over the counter transactions, total transaction value and volume, average daily transactions, mobile money accounts and usage segmented by gender, active accounts, agent data, and deposit amounts. This secondary data is from sources like the State Bank of Pakistan and Karandaz portal (K-FIS, 2020). The data analysis techniques used include descriptive analysis to summarize and describe trends in the data measures like mean, median and standard deviation. Trend analysis helps estimate current and past occurrences over time and serves as the basis for projections. T-tests measure differences between variables over time to assess statistical significance in changes pre and post a certain time period, based on the p-value relative to the alpha level of 0.05. The research methodology and data analysis sections describe the data sources, variables used, techniques leveraged, and tests conducted to analyse the adoption and usage trends of mobile money in Pakistan over time (karandaz.pk, 2016).

3.1. DATA ANALYSIS AND INTERPRETATIONS

The study was basically done in order to interpret the trend of Mobile money in Pakistan and how this trend vary in male and females. For this purpose, detailed analysis of data available is done.

3.2. VOLUME OF MOBILE MONEY TRANSACTIONS:

Volume of mobile money is calculated by taking data of all the provinces. It defines how much people from all over the Pakistan is using mobile money services. The data depicts that there is arising trend of volume of mobile money in last six years (See Fig. 2).

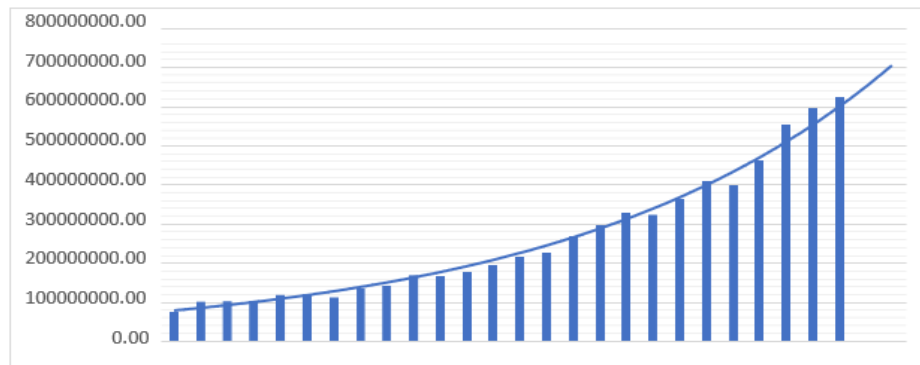


Fig. 2. Volume of Mobile Money Transactions

3.3. VOLUME OF MOBILE MONEY TRANSACTIONS IN PROVINCES

By analyzing the volume of mobile money of different provinces of Pakistan it is observed that Punjab have relatively more population as compared to other that is why it has a greater number of mobile money accounts as compared to the other provinces. After Punjab we have Sindh then Khyber Pakhtoon Khawa and in the end Gilgit Baltistan and Azad Kashmir (See Fig. 3).

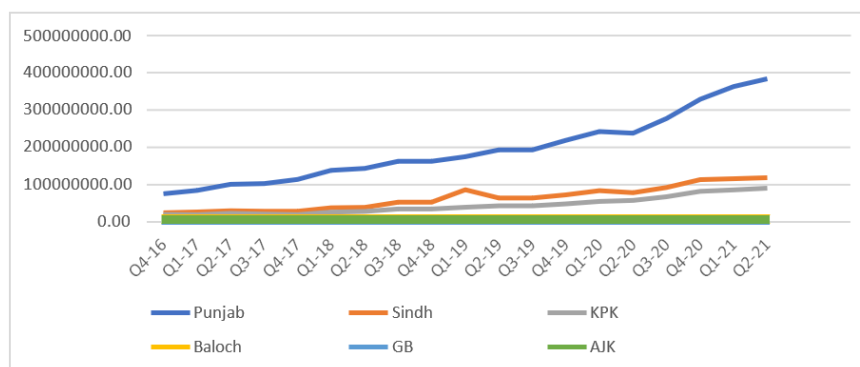


Fig. 3. Volume of Mobile Money in Provinces

3.4. AVERAGE TRANSACTIONS PER DAY

From Fig. 4, it can be depict the average transactions per day is increasing. The graphs indicates that there is continuous rising trend of transactions per day.

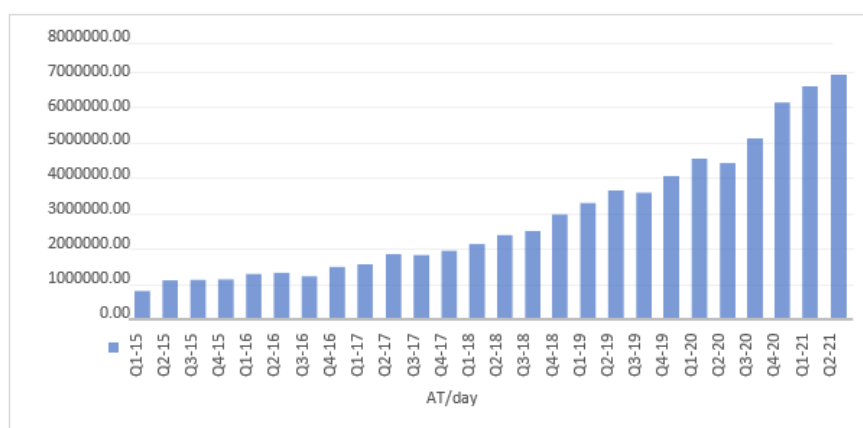


Fig. 4. Average transactions per day

3.5. MOBILE MONEY ACCOUNTS IN PAKISTAN

Mobile accounts include the number of customers having registered accounts. It does not include the customer who have not been registered but perform transactions over the counter. Some of the mobile money services that are offered primarily by OTC, a mobile money agent plays its role for the transactions purpose on behalf of the customer. Mobile accounts are further categorized into the active and non-active accounts (Hassan et al., 2020). Active accounts are those accounts from which at least one P2P payment, bill payment, cash out from account or merchants' payments etc. from account during last 90 days (See Fig. 5).

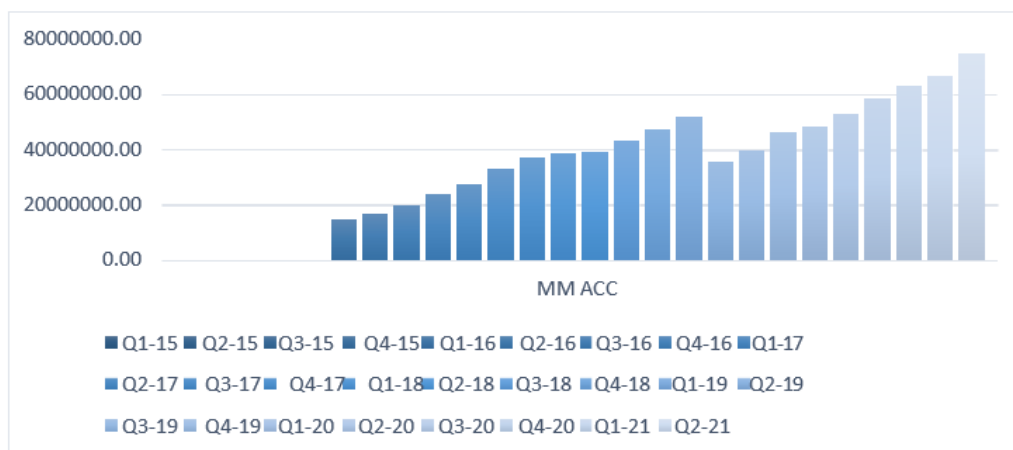


Fig. 5. Mobile Money accounts in Pakistan

In Pakistan from 2015 to 2021 there is an increasing trend in adoption of mobile money. There is large number of people who have registered their accounts in mobile money.

3.6. MOBILE MONEY ACCOUNTS OF MALE AND FEMALES

In Pakistan both males and females have a rising trend towards adoption rate of mobile money. Knowledge regarding mobile money have increased because of which their preferences over the traditional mode of transactions has been changed (Fig. 6 and Fig. 7).

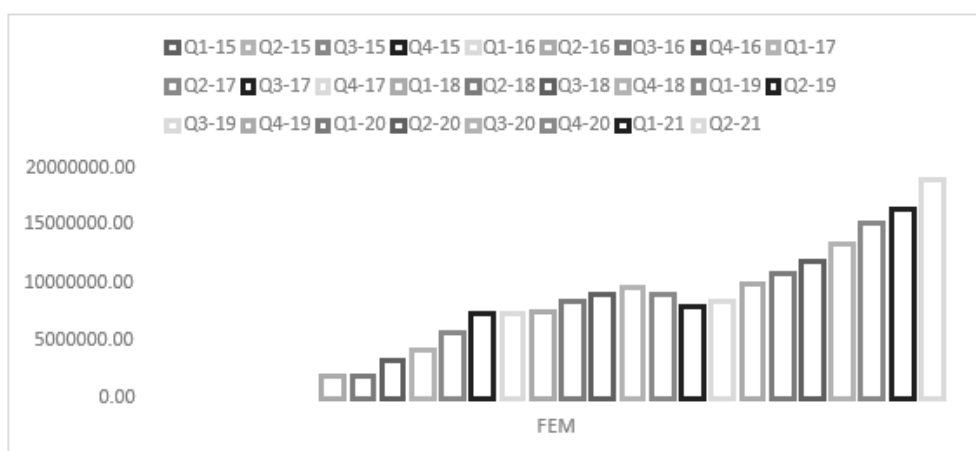


Fig. 6. Mobile money account female

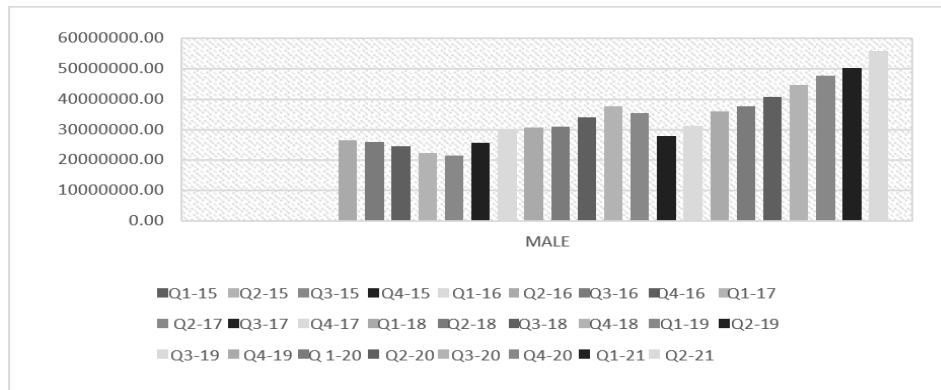


Fig. 7. Mobile money account male

On the other hand, while comparing both the genders, male preferences towards mobile money are relatively high than female. This is because of lack of knowledge and lack of mobile phones in many regions of Pakistan. Women as compared to the men are less likely to be aware of mobile money. Women's use of mobile money is limited due to a lack of awareness. The gender difference in mobile money awareness is most in Asian countries tested, where women are continuously less aware than males. Men and women face equal challenges when it comes to owning a mobile money account (Fig. 8).

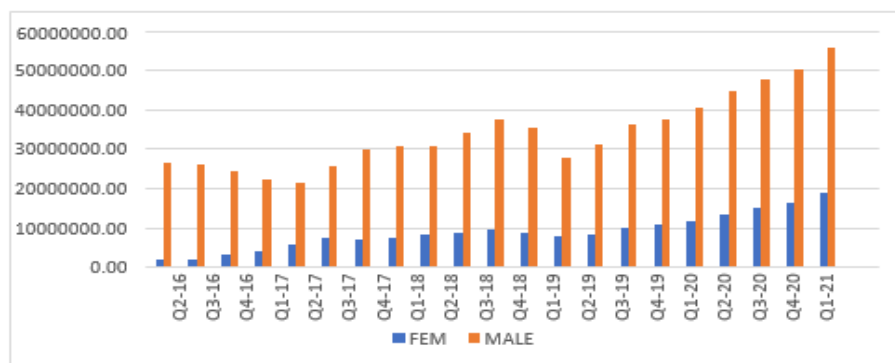


Fig. 8. Mobile money account male and female

3.7. TOTAL AND AVERAGE DEPOSITS PER DAY

Mobile money deposits total and per day can be analyzed through Fig. 9. There is an increasing trend in total mobile money deposits but the average deposits per transaction shows some fluctuation.

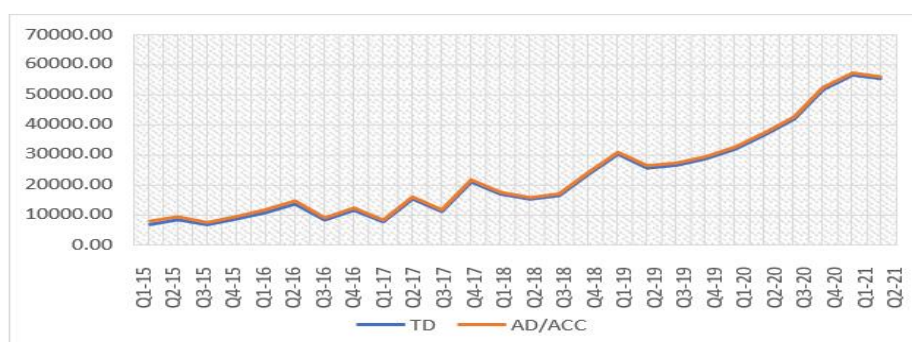


Fig. 9. Total Deposits

3.8. AGENTS OF MOBILE MONEY

Agents are the cumulative number of people transactional outlets who are registered with a financial institution. Active agents are those who must have done transaction once in a thirty days' time period (Fig. 10).

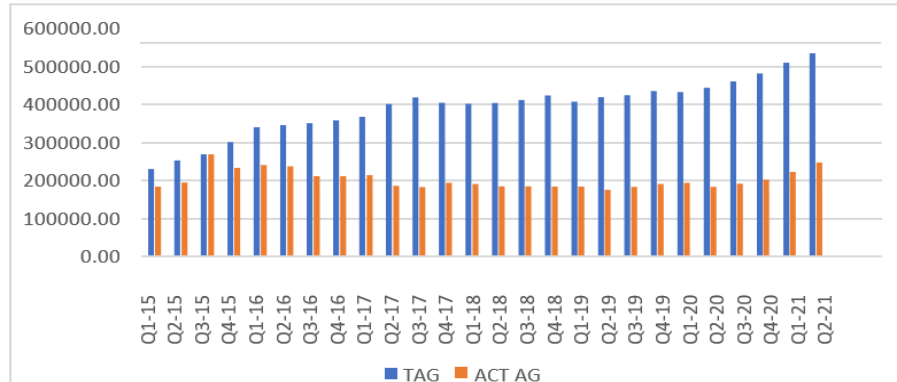


Fig. 10. Total Agents

3.9. DESCRIPTIVE ANALYSIS

Descriptive analysis is done on all the data collected from the Karandaz portal. This includes the mean, median, standard deviation of the data, from the data set it can be analyzed that data is accurate and valid with a smaller number of missing data (Tables 2 & 3 and Fig. 11 & Fig. 12).

Table 2. Analysis of volume mobile money

Region	Mean	Median	Std. Deviation
VMM PAK	25.955	204.393	16.356
Punjab	14.2677	141.764	11.7636
Sindh	4.7456	39.8771	39.8674
KPK	3.3659	29.1735	28.6297
Baloch	5.51900	48.811	45.0971
GB	9.4818	78.3452	84.8454
AK	5.4865	49.1453	43.5062

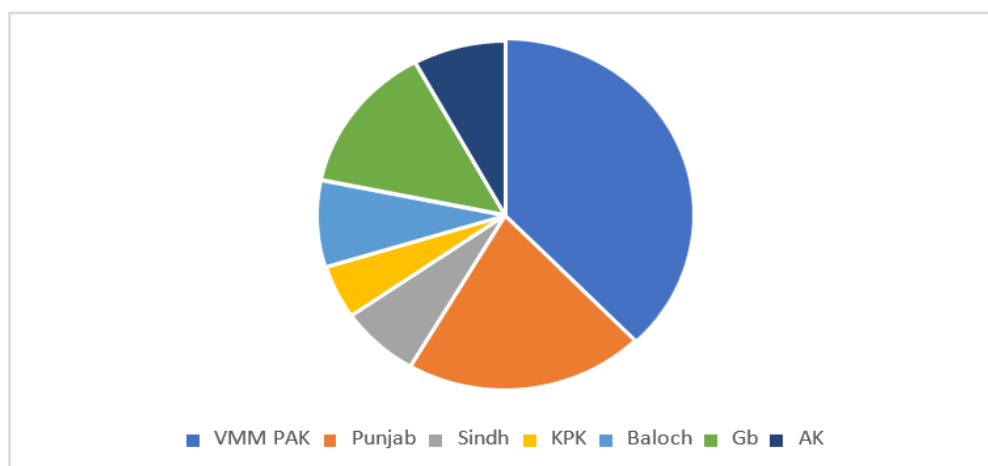
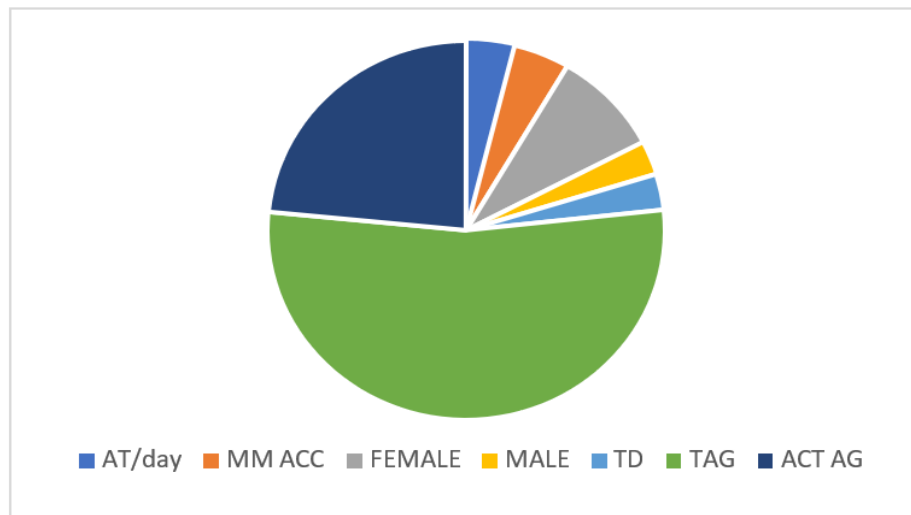


Fig. 11. Volume mobile money

Table 3. Descriptive analysis of mobile money accounts

Variables	Mean	Median	Std. Deviation
AT/day	28.8391	22.7103	18.1735
MM ACC	33.7330	37.8840	22.16096
FEMALE	65.9315	73.4939	56.9653
MALE	21.20891	26.7678	19.867767
TD	22.6723	16.8155	15.19026
TAG	394.45623	40.7326	73.8012
ACT AG	173.63638	19.1888	79.0692

**Fig. 12.** Analysis of mobile money accounts

3.10. T-TEST

COVID-19 may have sparked digital transactions on mobile platforms, but mobile money providers have yet to reap the financial rewards. Consumer spending, which is the primary source of mobile money earnings, has slowed significantly in some regions and have increased some other regions (Raza et al., 2019). By comparing both data of mobile money i.e., before and after covid we can get the real view of impact of COVID 19 pandemic on the adoption rate of mobile money. To measure the significant effect of COVID-19 on mobile money transactions we use T-test analysis.

Hypothesis for the test is:

Ho: No significant effect of COVID-19 on mobile money transactions.

H1: A significant effect of COVID-19 on mobile money transactions

Table 4. T-test

Variables	Mean	T	Sig (2 tailed)
Pair 1 VMM1 - VMM 2	-255339944.700	-10.964	.000
Pair 2 AT/day 1 - AT/day 2	-2837110.600	-10.964	.000
Pair 3 MM ACC 1 - MM ACC 2	-21003809.200	-10.331	.000
Pair 4 TD 1 - TD 2	-23654.900	-7.978	.000
Pair 5 TAG 1 - TAG 2	-60451.000	-6.748	.000

The table elaborates that the p-value is 0.000, which is less than 0.05; hence, a significant relationship between 5 variables sets is observed. The five variables namely are;

- Volume of mobile money before and after COVID-19
- Average transactions per day before and after COVID-19
- Mobile money accounts before and after COVID-19
- Total deposits before and after COVID-19
- Total Agents before and after COVID-19

This indicates that there is a significant change in mobile money transactions. Volume of mobile money has been increased after COVID-19. Same is the effect on other four variables. So, on the basis of this we reject our null hypothesis and accept our alternative hypothesis which states that there is a significant effect of COVID-19 on mobile money transactions and adoption.

4. CONCLUSION AND LIMITATIONS

In this study, we have analyzed that the trend of mobile money has increased in the last six years' time period. The volume of mobile money in different provinces of Pakistan and Pakistan as a whole is increased. On the other hand, both males and females have an active role in financial inclusion. Though the ratio of the female is relatively low as compared to the men but overall, both have a significant role towards mobile money. Through mobile money, different types of transactions are done (Stestudylib, 2018). These are not only limited to the transfer of money from one place to another but also include the payment of daily utility bills, international remittance, some of the mobile money businesses are offering a scholarship to the students and loans for deserving people. Because of these facilities rate of deposits has been increased in the last few years. In some regions of Pakistan where there is no or easy access to mobile services, there work mobile money agents. The role of mobile money agents is to facilitate customers having no active or passive account in the financial institution. In Pakistan, mobile money agents are working actively (FIGI, 2021). COVID 19 pandemic have both good and bad impacts on society. Overall people's preferences towards mobile money have relatively increased. Few factors have been negatively affected by this pandemic and because of the lockdown but overall, there is a significant impact of covid 19 on mobile money. Mobile money providers have worked quickly to mitigate the damage to citizens, governments, and companies from the start of the pandemic (CGAP, 2019). While some of the measures were only temporary, many of them established the groundwork for future growth and a smoother shift from cash to digital payments.

Author Contributions:

Sana Farhad, worked on Introduction, Data Analysis and Findings, Methodology and Conceptualization. Jamil Farid, worked on Literature Review, Software, results, discussion. Anoosha Ashfaq Shah, worked on Language, Discussion, Overall review and investigation.

Funding:

This research received no external funding.

Institutional Review Board Statement:

N/A.

Informed Consent Statement:

None.

Data Availability Statement:

N/A

Acknowledgments:

None.

Conflicts of Interest:

No conflicts of interest

Reference:

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