NUML Journal of Economics (NJE)
Volume 1, Number 2, December 2024, PP. 1-26

The role of financial innovations on the sustainability of microfinance institutions in Pakistan

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Article History:

Received Date:
19th September

Revised Date:
30th October 2024

Accepted Date:
29th November 2024

Published:
2nd December 2024

Funding
This research received no specific grant from any funding agency in thepublic, commercial, or not-for-profit sectors.

Abstract

The ability of a microfinance organization to cover all of its operating expenditures is referred to as its financial Sustainability. Reduce expenses, offer products and services that meet customers' needs, and develop creative means of reaching the unbanked poor to charge interest rates and fees that are sufficient to pay the costs. For microfinance institutions to stay financially viable, they must have a lot of loans, interest rates that are high enough to make a fair profit, and good management. While microfinance has gone a long way since 2000, it's still in its infancy in Pakistan's official banking sector. With the establishment of eight new Microfinance Banks (MFBs) and the transformation of three major Microfinance Institutions (MFIs), two of the world's biggest MFIs have begun operations in Pakistan, showing private sector engagement and institutional variety. Improved policy and regulatory frameworks are a sign of a strong economy. This paper uses secondary and quantitative study for the analysis.

Keywords: Financial innovations, Microfinance institutions, Sustainability of microfinance

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1. INTRODUCTION

Returning to the middle of the nineteenth century, you may find Lysander Spooner's thoughts on the benefits entrepreneurs can gain from small loans and how they might transcend poverty. The Grameen Bank of Bangladesh and its microfinance pioneer, Mohammad Yunus, are among the organizations that have contributed to the popularization of the word "microfinance" in recent years (Ullah, 2021). Inadequate access to financial institutions for the impoverished has hampered economic growth in many parts of society (WINGA, 2021). Multinational financial institutions (MFIs) are seeking to innovate in a highly competitive financial services industry. Service innovations happen because of competition between financial institutions, especially microfinance institutions, who want to keep and grow their market share (Ahmad, 2021).

Even though microfinance has made enormous strides in Pakistan, it has taken a longtime for the country's millions of unbanked citizens to get the services they demand. The financialsector is completely uninvolved in the lives of more than half of Pakistan's adult population, with32 percent of the population unofficially obtaining their financial services. Despite the enormous assistance offered by the government, donors, and the microfinancebusiness, and even though the market is huge, it has only been feasible to reach roughly 2 million active borrowers (Bari, 2021).

As a crucial weapon in Pakistan's fight against extreme poverty, microfinance has emergedas one of the country's four essential programs and has been classified as one of them. The concept of microfinance has been present since the 1950s, but it was not until the 1970s that it became widely accepted as a development-related policy instrument. Before the global financialcrisis that enveloped the globe in 2008, many major-push arguments pointing to the undercapitalization of poor countries in terms of macroeconomic capital were offered. It was

Formerly believed (but only later clearly stated) that surpluses generated in developing countries would "trickle down" to poorer areas, which was a key component of poverty alleviation.

Microfinance was initially launched in the 1970s, and there has been a significant movement away from large-scale financial services and toward small-scale financial services sincethen. Traditional banks and microfinance institutions (MFIs) operate in fundamentally distinctenvironments, including a broad variety of market and product variations and technology and customer-culture disparities. Information and communication technology (ICT) is projected to positively impact the microfinance industry since it is likely to inspire discoveries and developments (ICT). On the other hand, a substantial amount of empirical research has been done on the role of physical infrastructures, which are utilized by microfinance firms (MFIs) (Adeosun, 2021). However, rather than developing new models, technological innovation seems to be copying the models of more established financial organizations rather thandesigning its own. Microfinance will be rendered obsolete if the "last mile" innovation potentialof the sector is not recognized and used fully.

In the current year, more than 7000 microfinance organizations are functioning in 190 countries, offering services to an estimated 54 million customers worldwide. Agricultural, rural finance and rural development challenges are changing due to the assistance microfinance institutions and other financial institutions provide. For cross-cutting concerns, microfinance(also known as financial services for the poor) is a highly effective tool that may assist in tackling some of the world's most critical challenges today. In addition to eliminating acute hunger and poverty, the organization strives to promote equality between menand women, increase access to health care, and promote equitable and inclusive economic growth.Seventy percent of the worlds poor rely on the agriculture industry for their income and work prospects. Because of this, agricultural financing services are quite beneficial.

Farmers are better able to meet the food needs of millions of people around the world as aresult of increased productivity as a result of climate change. Communities benefit from improvedadaptability to shifting weather patterns due to climate change, and communities benefit from improved adaptability to shifting weather patterns. As a result of a lack of employment opportunities or an inability to obtain adequate financial resources, microfinance, also known as microcredit, is a type of financial service that is provided to individuals who are unable to obtain

Regular banking services due to a lack of sufficient financial resources. Consequently, banks are better positioned to assist small and medium-sized enterprises (SMEs) throughout the economywith their growth and development requirements. The inclusion of non-financial and financialservices is only at a certain point that they become a viable strategy for poverty reduction and ruraldevelopment. Because many microfinance institutions (MFIs) are expressly geared to meet the demands of female borrowers, microfinance is advantageous to women. It has been shown that providing women with access to microfinance services, which improve their decision-making skills and overall socio-economic situation, is one of the most effective strategies for promoting female emancipation in today's society. In terms of the country's economic growth, industrialization is critical to the endeavor's success. Examples of such indicators include stock markets and the banking sector, which are often mentioned as markers of a country's general economic health and well-being. Major economies worldwide that are sufferinggrowth challenges may be able to profit from the financing choices that are accessible to them. Credit may aid low-income people and small businesses in growing their operations and improving the economies and communities in which they are located.
Slow adoption of financial technology in MFIs threatens the sector's sustainability. The microfinance sector has emerged as an economic development approach that is used to cater to low-income individuals and small businesses who do not have access to conventional banking (Hussain, 2019). Competition in financial institutions is too high, so to compete with them, MFIs need to adopt financial technology to be in the race. There is no doubt that microfinance has played a great role in reducing poverty over the ages. Microfinance has played an essential role in improving the living condition of poor people by increasing their earnings, savings, health, and assets (Khan, 2021). But to the best of my knowledge,there is a gap; MFIs lack technology adaptation. Financial services like micro-credit, micro-insurance, and small loans are not provided through mobile banking. The outreach of financial institutions increases when they adopt financial technology (Mustafa, 2021).

Keeping in view the above discussions, the objectives of this study include the examination of role of financial technology, microcredit and active borrowers on the sustainability of MFIs. This paper also aims to investigate the role of duration of microfinance and micro insurance on the Sustainability of MFIs.

2. LITERATURE REVIEW

To implement the innovation, it is important to have a new concept, which may be planned or unanticipated. This is the basis on which the distribution of innovation is built (Nourani, 2021). Only a few of the various kinds of financial innovation outlined by Rogers include institutional innovation and product, process, and service improvements. Remember that invention is distinguished by five characteristics: relative advantage, compatibility; complexity; trialability; and observation ability. Yaron's hypothesis completely rewrites Rogers's notion. According to Kagan, research was carried out in Ghana on the impact of service innovation adoption in the banking business, and the results were published (Qamruzzaman, 2021). This cross-sectional study aimed to determine if internet banking services in Ghana influenced the performance of community banks. A recent study indicates that banks who provide online banking services to grow their client base outperform their peers and that internet banking helps community banks make more revenue. The number of active borrowers may be used to determine poverty levels.

Furthermore, it is built on the assumption thatthe greater the number of active borrowers, the greater the number of people who would profit (Shehzad, 2021). It is obvious from the many borrowers that microfinance organizationsare doing a fantastic job of reaching out to the poor and underserved population (Yumei, 2021). Active borrowers play a critical role in poverty reduction efforts. According to the most currentfigures, the number of active borrowers has increased by 213.2 percent compared to the previous year's period. According to operational borrower statistics from MFIs, MFBs, and RSPs, MFB reacted favorably to the increase in the number of actively borrowing borrowers. MFIs and MFBs have created more active female borrowers in the recent year than non-profit organizations(NGOs) have produced in the previous year (ZEB, 2021). Increased participation by borrowers allows microfinance organizations to serve a more significant number of individuals, which has a positive impact on their long-term viability and Sustainability.

Microfinance organizations, on the other hand, don't seem to be as flexible with financial technology, at least not in my experience. Modern-day microfinance organizations are becoming more competitive with one another. Multinational financial institutions (MFIs) are seeking to innovate to compete in a highly competitive financial services industry. In this category

Microfinance has been investigated as a means of alleviating poverty in Pakistan, however there seems to be a gap between the financial technology accessible to Pakistani microfinance organizations and the continued development of the industry, according to my knowledge. Of

innovations are service innovations, which may be defined as advancements that occur due to competition among financial institutions, particularly microfinance institutions, in which each institution attempts to retain and increase its market share (Shehzad, 2021). According to a study by Muriuki, there is a substantial association between financial innovations and the profitability of commercial banks in Kenya (Nourani, 2021). Microfinance has made major contributions to the battle against poverty throughout history, and this is, without a doubt the case today. Because they have helped impoverished people increase their wages, savings, health, and assets, microfinance institutions have played an important role in improving their living circumstances (Ullah, 2021). The viability of microfinance organizations in Pakistan is the subject of this study, which evaluates the impact of financial technology on the institutions' operations.

Electronic payment systems underwent a sea shift in the late 1970s. The Bankers' Automated Clearing Services (BACS) started in the United Kingdom in 1968 with the Inter Bureau, which became the foundation for the Interbank Payments System (IBS) in 1970. In the early 1970s, Fedwire became an electronic system. As far back as 1990, the BIS Committee on Payments and Settlements had been constituted. A significant factor in the shift from trading physical securities to electronic trading was the development of the National Association of Securities Dealers Automated Quotations in the United States. In the United States, online bankingwas established in 1980, and in the UK in 1983. In addition, "Black Monday" occurred that year. Regulations are now working on encouraging cross-border collaboration in the securities markets.Financial services legislation and directives have created the groundwork for complete interconnectivity in the EU, including the 1992 Maastricht Treaty and the Single European Act (Santos, 2021).

Since technology has evolved, so has the regulatory framework and strategy. Many peoplein the United States and Europe have put in a lot of time and effort. Regulating new financial sectoradvances has only a limited benefit. Many consumers would be able to conduct their financial transactions from their homes, avoiding the long lineups at the bank. The competition was predicted to rise due to reduced physical contact between consumers and banks. Web-based

Banking provides benefits, including improved data organization, enabling borrowers to understand their credit risk. Fintech 3.0 begins with the separation of risk from Fintech strategy. Financial

technology was ushered in by the global financial crisis of 2008. Banks' reputations and public trust have been seriously tarnished since the financial crisis of 2008. Americans' belief in the capabilities of digital businesses was proven to influence bank confidence in 2015 research. Over 2,000 P2P lending sites operate in China, which illustrates this phenomenon (Anwar, 2019). Many lenders and borrowers aren't discouraged by this because of the reduced costs, higher potential returns, and more affordability that these platforms provide. In emerging areas, there may be a lack of "legacy behavior," so the general public does not anticipate financial services to be provided exclusively by banks. "Banking is required, banks are not," as said more than two decades ago, is still true today.

Citicorp's exact effort led to the birth of financial technology. The public's fascination with this occurrence has grown over time. Fintech has been discovered to be utilized in the service industry, according to studies. The banking industry benefits from the proposed changes. Academic journals and commercial publications use various terminologies to explain the concept (Durango, 2021).

2.1 Microfinance institutions

Providing a wide variety of financial services to low- and moderate-income people, such as microloans, microinsurance, savings, and microcredit, is what is meant by the term "microfinance" (Rehman, 2021).

In the financial industry, the phrase "microfinance institution" refers to a group of organizations devoted to providing microloans to low-income people and enterprises. Savings accounts, insurance, health care, and personal development are just a few of the financial services they provide to economically disadvantaged and impoverished areas. Generally speaking, the term "microfinance institution" (MFI) refers to any institution offering microcredit services. According to this interpretation, non-profit and for-profit organizations fall within this category. To promote financial inclusion for all individuals, microfinance institutions
(MFIs) gather under the umbrella name "microfinance." Microfinance organizations are what these organizations are referred to as in the financial services business (MFIs). This is because they are mainly concerned with providing financial services to the underserved and their microenterprise counterparts. Microfinance organizations are the ones that make loans to persons who would otherwise be unable to get them from a traditional bank due to a lack of appropriate collateral. In

the financial services industry, multilateral development banks (MFIs) are recognized as suppliers of financial services to poor people, mainly in the form of loans and savings. Still, some also provide insurance and other payment alternatives to their customers.

If you need financial assistance, microfinance organizations, which provide small-dollar loans and other services to those in need, may be a viable alternative. A microfinanceinstitution (MFI) is defined by the "Microfinance Gateway" as a financial services provider for low-income persons that provides loans and other types of credit. Small and large microfinance institutions are available in several configurations. Most of the time, when we think about non-profit financial organizations, we immediately think of philanthropic institutions. Although these financial non-governmental organizations (NGOs) also provide microcredit and microfinance services, in the vast majority of situations, they are not authorized to take savings deposits from public members. Consequently, many non-profit organizations and commercial banks may be classified as microfinance institutions since they offer a wide range of other financial services besides microfinance. We may thus define them as microfinance organizations since the services they provide an account for a considerable component of their entire business. It is possible to get financing from several microfinance organizations (MFIs) in microfinance. Credit unions, cooperative housing societies, and other similar organizations are examples of community-based financial intermediaries owned and run by local company owners and municipalities. The nature of this kind of institution might vary greatly depending on the nation in which it is located.

Several participants are eliminated from the definition of MFI, which helps to clarify the meaning of the term. A commercial bank that scales down its activities to reach the poor and a moneylender that caters to the financial needs of the poor must satisfy specific requirements to be classified as an MFI. If an organization has developmental roots and a non-exploitative goal of first and foremost benefiting the poor, it can only be defined as a microfinance institution, according to the valuable qualities of a microfinance institution. If they are mainly involved in microfinance activities or if they have a distinct department dedicated to microfinance operations to improve their customers' lives, even non-governmental organizations (NGOs) may be categorized as microfinance institutions (MFIs). According to the World Bank, microfinance institutions (MFIs) are seen as an instrument for poverty alleviation in the United States.

2.2 Financial technology

Financial technology has boosted microfinance innovation, competitiveness, and development. It is using new technologies in the financial industry to provide clients with more convenient and efficient services at a lesser cost. To take advantageof the nearly universal spread of mobile phones, financial service providers may be able to save money by digitizing their operations, improving their efficiency, and opening up new markets. According to the study, core systems (loan origination and administration systems) enable MFIs to conduct their day-to-day operations. In contrast, advanced systems enable them to use data from a variety of sources and perform complex analytics to aid with efficient loan sales and collection.

According to academics, information technology has had a beneficial and considerable influence on the banking industry in recent years. According to academics, financial technology (FinTech) is projected to be effective in banking if the banking sector recognizes economic improvements. According to researchers, the banking industry is boosting its use of cutting-edge information technology products and decreasing the amount of paper it uses in conventional banking in favor of financial technology as a means of remaining competitive. According to a recent survey, banks face significant challenges when attempting to adopt financial technology solutions (Anwar, 2019). Concerns concerning flexibility and information management, as well as the need to re-engineer and alter things, are among the issuesthat need to be addressed.

Commercial banks might save money on operational expenditures, according to various information technology advancements discovered by researchers. The widespread use ofinformation technology in India has resulted in a 28 percent decrease in operating expenditure (Durango, 2021). According to their findings, the use of information technology solutions by

Financial institutions have a considerable beneficial influence on the overall quality of their services provided to customers. Customer satisfaction levels are also highly influenced by the quality of service in Pakistan, as previously stated. Several financial technology (Fintech) specialists collaborated on research to establish the significance of Fintech in the financial sector,along with its difficulties, functions, and emerging trends (Iqbal, 2021). It has been shown that financial technology is more beneficial to a country's economy than the traditional method of doingbusiness. Most recent breakthroughs in financial technology have been driven by the introduction of bitcoin

and the widespread usage of new payment methods. These two developments have been the driving forces behind the most recent advancements in financial technology. The usage of virtual currency, based on block chain technology, has led to the development of new technological innovations.

The global financial industry has transformed by making a wide range of financial goods available via financial technology. The nature of transactions and money management is changing due to the growth of online commerce and payment systems, with PayPal acting as a model of financial technology advancement. Several academics believe that one of the most significantadvances in financial technology in the history of the global economy has happened in the lendingbusiness. Before the financial crisis, financial institutions were the only entities engaged in lending transactions. Customers were required to provide all of the necessary documentation, including business contracts and mortgage documents, as well as a guarantee thatthey would be able to repay the loan. Consumer finance, as well as the financial services industry, are being influenced significantly by financial technology developments. In the information technology business, several different types of intuitive internet technologies are being developed by various companies. Increasing numbers of non-financial organizations, such as information and communications technology (ICT) businesses, are making inroads into the financial sector. As a consequence, financial institutions are keeping a close watch on the Fin-Techbusiness and assessing the potential effect it may have on their operations.

A rising body of evidence indicates that financial technology is one of the essential technologies in the financial sector and that its usage is increasing at an alarming pace. Financialtechnology, in reality, is becoming more popular. Due to growing cynicism about traditional lending institutions, there has been a rise in interest in unconventional financing forms due to this trend. When it comes to the growth of financial technology, the availability, and cost of infrastructure are two crucial elements to consider. Investment in financial technology (Fintech) has increased dramatically in recent years. According to the findings, six fintech models are now under development: payment services, wealth management, peer-to-peer lending, capital markets, and insurance services, among others. The following are the descriptions of these models: new technologies such as financial technology (FinTech) and the Internet of Things (IoT) have received significant attention due to their association with cutting-edge concepts. As a result of the Financial Technology (FinTech)

revolution, a slew of new goods and services are being developed, including accounting systems that are designed to enhance and simplify existing financial processes. The Internet of Things is affecting everyone, even those not directly involved with the company. It might be said that there isn't a single industry that this new technology hasn't influenced.

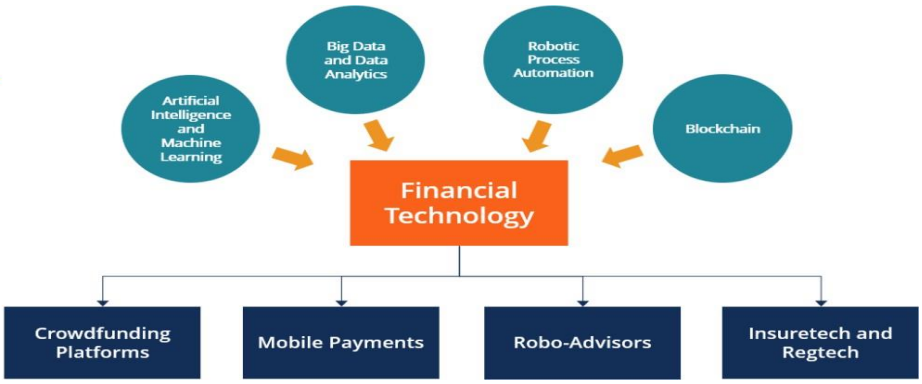


Figure 1: Overview of financial technology

2.3 Active borrowers

The number of active borrowers may measure poverty. Furthermore, it is predicatedon the premise that the more active borrowers there are, the more individuals may benefit (Shahid,2021). In June'20, there were 6.9 million active borrowers, a 5 percent decrease from the previousyear, with MFIs declining by 4 percent and MFBs expanding by 7 percent. This difference in average ticket size between MFBs and other financial institutions explains why MFBs have a 54 Percent market share. Due to the Covid-19 economic collapse, credit quality hasworsened significantly.

2.4 Duration of microfinance

As micro-financing duration increases, the number of poor households decreases, while the number of non-poor households increases (Younas, 2021). In the 1980s, the company introduced 'Microfinance' as a solution to poverty to empower women. However, despite the potential of microfinance, it is plagued with challenges of accessibility. Microfinance provides low-income people with financial services such as loans, savings accounts, and other similar products on a micro-scale or in small amounts. Microfinance is the practice of providing financial services such as loans, savings accounts, and other sorts of investments on a small scale to persons who have little or no

financial resources. Following distribution and repayment of a loan, people who have taken out a loan are credited with the amount of the loan taken out on their behalf. A later credit to the borrower's account allows him or her to use the money for whatever purpose he or she had in mind when borrowing the money.

2.5 Microinsurance

Risks and economic shocks may have a significant impact on low-income families. Insurance is one method through which the impoverished may safeguard themselves. Microinsurance may help low-income families retain a feeling of financial security even in the face of adversity (Rabbani, 2021). Microinsurance, which refers to insurance products that give coverageto low-income households, may benefit these families. Microinsurance is a good option for those with little financial resources since it focuses on lower-value items and provides paymentin the event of illness, accident, or death. According to the Bank for International Cooperation in Europe, "Micro Insurance" is a phrase that refers to insurance products that are aimed at those whohave little financial means.

Both the notion of life and the concept of death are included in this classification. Microinsurance is a kind of insurance often used in developing and developing nations. In addition, it is feasible to have a pension component in the product development process. Some insurers provide accident and permanent disability benefits just during the period in which the premiums are paid, but others offer them throughout the policy. The highest amount that may be paid in a single transaction is between Rs. 30,000 and Rs. 50,000 per transaction, with no upper limit. According to the World Health Organization, those who do not have retirement savings or who live in low-income households are the primary beneficiaries of most microinsurance programs. People who own fewer valuable items or assets and wish to protect themselves against the financial implications of sickness, injury, or even death might consider purchasing this insurance.

Individuals and the public sector may protect themselves against risk in a variety of ways. According to the results of their study, researchers describe "microinsurance" as a kind of insurance in which premiums are paid in monthly installments and risk is pooled to help the poor, who would otherwise be unable to purchase an insurance (Khursheed, 2021). In a comprehensive literature review, the authors identify critical knowledge gaps and propose a conceptual framework to guide and organize the research agenda of the Microinsurance Facility, which includes topics such as effect assessment, demand and supply challenges, and other closely related topics. A significant issue addressed by this

research review is optional insurance, which is one of the most critical concerns. Still, this study does not go to great lengths on the different techniques available, such as precautionary savings, credit availability, or participation in public safety net programs (Nawaz, 2021). An essential flaw in this approach is that the advantages of microinsurance are seldom weighed against those of other mechanisms that may offer insurance-like benefits at a cheaper cost, such as micro-savings accounts, consumer or emergency loans, and state safety nets.

In the developing world, a major segment of the population is in greater danger than the restof the world's population. People living in poverty are more vulnerable to the effects of these threats, whether it be the death of a family member, the onset of a severe sickness, the loss of an asset such as cattle, or the consequences of a natural catastrophe of any kind. These occurrences have a disproportionately harmful influence on those who are less privileged. In recent years, affordable and dependable insurance solutions for the poor have come to be recognized as an essential component of a financially inclusive economy. A microinsurance policy is "the provision of specialized risk protection to low-income persons in return for monthlymonetary payments equal to the possibility and expense of the risks posed by the policyholder." This is a frequent way of describing the insurance policy product.

Although still in its early stages, the microinsurance sector is relatively new on the global insurance scene. There is a considerable dispute over how microinsurance should be administered and how its products should be structured. The articles and blog posts linked to the next portion of this page provide a summary of some of the current discussions on the subject. When it comes to a field that is still in its infancy, the papers and postings picked from FAI's archives do not constitute a comprehensive examination of the existing literature. It is important to note that these views and debates reflect just a tiny portion of what is currently accessible in the subject of microinsurance, which is still in its infancy (Santos, 2021). Researchers are investigating the possibility that providing low-income patients with access to microinsurance may increase their capacity to get healthcare. Currently, the results are still preliminary. These authors describe their research results and conclusions in this essay. Is it possible for insurance companies to significantly improve the quality of healthcare delivery? We look at some of the metrics from the Community Microinsurance Program in India (Qalati, 2021). Researchers are striving to discover whether or not microinsurance

systems are indeed benefiting the poor in risk mitigation. It has been shown recently that the availability of insurance may encourage farmers to take out loans to invest in new agricultural technology and equipment (Sadiq, 2021).

Figure 2: Applications for micro insurance

3. METHODOLOGY

This study has five independent variables and one dependent variable. All of these independent variables are directly related to the dependent variable. Financial technology has a direct relationship with the Sustainability of MFIs. When financial technology increases, then sustainability also increases. Other variables, micro-credit, active borrowers, duration of microfinance, and micro-insurance, are also directly related to the Sustainability of MFIs. Annual reports and data from banks are used in this study to collect data on dependent and independent variables.

According to our study paradigm, we focus on the many levels of poverty, including very poor, ultra-poor poverty status, poor, vulnerable, and quasi-non-poverty. To show the impact of microcredit on various poverty bands, household classifications into distinct poverty bands were used (Adeosun, 2021). The microcredit borrower's total effect is calculated using the supplied formula.

$$P^* = (Pbt1 – Pbt0) – (Pnbt1 – Pnbt0)$$

Micro-credit has a net influence on the poverty status of borrower families, which is P* Pbt1is the present poverty level of the borrower families; To calculate Pbt0, we must utilize the prior year's income to determine how poor the borrowers' families were. It is the non-borrowerhousehold's

present income level that determines their poverty status. At Pnbt0, a non-borrower household's poverty status is determined by their pre-tax income level, and t1' stands for the periodfrom Jan 2020 to Jan 2021.

FS measures (Financial Self-Sufficiency-FSS) were developed by researchers for MFIs that receive grants, contributions, and subsidies (NGOs) (Sadiq, 2021). This is how the FSS measureis outlined.

F S= (Operating income / (Operating expenses + Financial cost + Loan loss provision + Imputed cost of capital))

Interest, fee, and commission revenue are all included in operating income.

- Personnel expenditures and administrative expenses are included in operatingexpenses in most cases.
- Interest and charge expenditures on borrowing are included in the financial cost.

To estimate the number of FinTech in banks, we used the following methodology: Based on Whitecap primary data, the estimated FinTech workforce equals the number of employees identified inside FinTech startup and scaleup enterprises, plus five percent of the combined FS and Tech workforce.

At the loan interest rate, the present value of the Macaulay term of a loan with a single initial draw down is:

Duration = sum [present value of each debt service * (days since loan draw)/360] / initial loan draw

Monitoring the social effect on low-income individuals, households, and communities of microinsurance adoption is an integral part of the microinsurance ecosystem. While academics and non-profits have done much of the performance measuring, microinsurance investors and micro insurers have a stake in the effectiveness of microinsurance as it relates to their specific impact objectives.

Under the order preference by similarity to the ideal solution method, MFIs operating in Pakistan between 2006 and 2021 will be assigned a sustainability score based on their capacity to maintain their current operations (TOPSIS). Throughout the examination, the same amount of weight is assigned to each measure of Sustainability.

The study's sample size will be rather huge due to the enormous number of research papers and articles that will be included. Accordingly, I'm looking for accurate, up-to-date information inannual reports, and data from banks.

The data will be acquired from a number of banks and from annual reports, in order to fulfil the work at hand. For my research, I will use secondary data sources such as annual reports, and official visits to banks to acquire information. In addition to the data, I gathered throughout my inquiry, it will be added in this list of sources.

Data analysis is the process of organizing, classifying, and determining the significance ofa large amount of data. EVIEWS Statistics is a statistical analysis tool that may be used both interactively and in batches to do statistical analysis. EVIEWS is used by some of the world's most prestigious research organizations to ensure that their surveys and research get the most accurate findings available. Text Mining and Statistical Analysis I'll be utilizing the most current version of EVIEWS for data analysis in our project, which is expected to be released soon.

DATA ANALYSIS

The data analysis of the research has been conducted and it is viewed that secondary research method is used in finding the data of different banks. There are many banks working in Pakistan and researcher is engaged in findings the data using annual reports or by seeing the financial statistics of the microfinance banks.

Regression Analysis

$Y= \alpha_o + \alpha_1 FT + \alpha_2 MC + \alpha_3 MI + \alpha_4 AB + \alpha_5 DL + \Sigma_{it}$

FT = Financial Technology

MC = Micro Credit

MI = Micro Insurance

AB = Active Borrowers

DL = Duration of Loan

Y = Sustainability of MFIs

SUMMARY OUTPUT					
Regression Statistics					
Multiple R	0.978				
R Square	0.956				
Adjusted R Square	0.946				
Standard Error	2.790				
Observations	40				

Anova

	df	*SS*	*MS*	*F*	***Significance F***
Regression	3	13.03368643	4.344562	0.344574	**0.793466239**
Residual	17	214.3446279	12.60851		
Total	20	227.3783143			
	Coefficients	*Standard*	*P-value*		

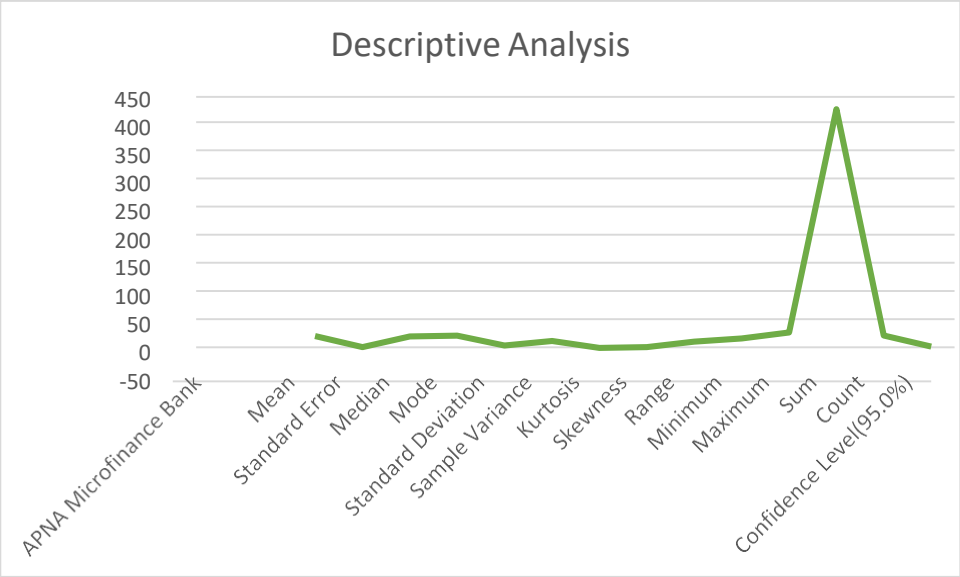
		Error			
Intercept (α_0)	14.0361999	557.03587 58	0.025 198		
Financial Technology (FT)	**2.765510159**	**79.127615 42**	**0.034 95**		
Micro insurance (MI)		**0.112882912**		**20.01470070**	**0.00564**
Micro credit (MC)		-4.357071217		88.61239001	**-0.04917**
Active Borrowers (AB)		2.457574532		58.54155626	**0.04198**
Duration of Loan (DL)		**0.987985583**		**2.80283278**	**0.03525**

The regression analysis has been gathered and it shows the T-stat and P-value of the variables andit shows that all the variables are significant as their P-value is less than 0.05. It is also indicated that increase in the micro insurance will increase the Sustainability of MFIs by 14.03. It is also evident that increase in the financial technology increases the Sustainability of MFIs by 2.76 whilethe decrease in micro credit will eventually decreases the Sustainability of MFIs by -4.35. It's alsoevident that increase in active borrowers will increase the Sustainability of MFIs and duration of loan also impacts the Sustainability positively. The regression model is 57% fit and there is no veryslight chance of error in the observation. The researcher has gathered around 21 observations from different microfinance banks.

Descriptive Analysis

APNA Microfinance Bank	
Mean	20.17571
Standard Error	0.735783
Median	19.24
Mode	20.68
Standard Deviation	3.371782
Sample Variance	11.36892
Kurtosis	-0.84074
Skewness	0.64474
Range	10.36
Minimum	16.03
Maximum	26.39
Sum	423.69
Count	21

Confidence Level (95.0%)	1.534817

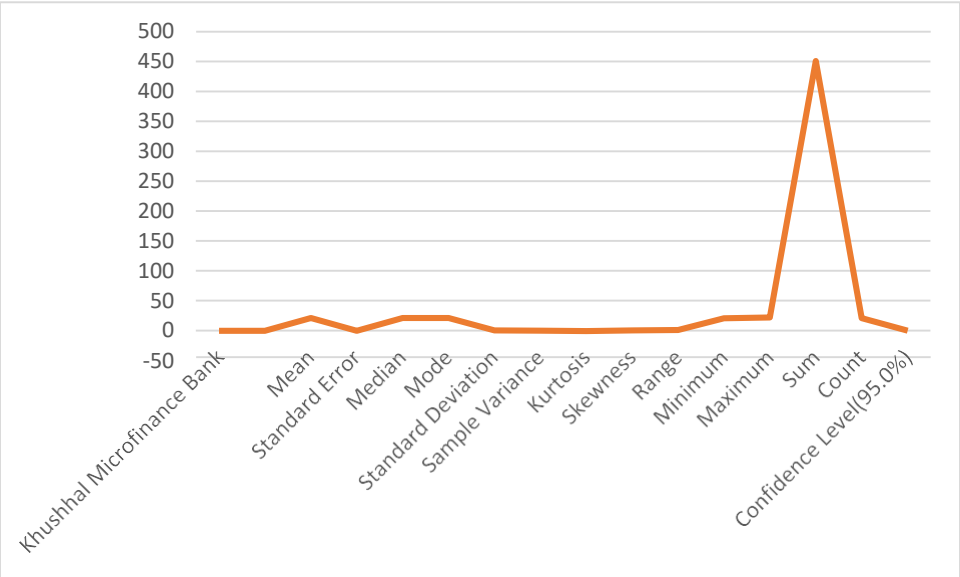


The descriptive analysis of the APNA micro finance bank is shown and it predicts that banks has been constantly engaged in minimizing its risk. The standard deviation of the bank is 3.3 which is quite low as compared to the other banks. The banks are dealing with its financial services and is promoting them in the market, the kurtosis value of -0.8 and it shows that APNA bank is platykurtic and is perfectly skewed towards the positive side. There is increase in the skewness which shows the ability of bank to easily sell off its financial services in the market. APNA microfinance bank is considered one of the best in the Pakistan and is involved in different activities to promote itself in the banking industry.

Khushal Microfinance Bank	
Mean	**21.48714**
Standard Error	**0.084027**
Median	**21.3**
Mode	**21.25**
Standard Deviation	**0.38506**
Sample Variance	**0.148271**
Kurtosis	**-0.56515**
Skewness	**0.501255**
Range	**1.35**
Minimum	**20.9**
Maximum	**22.25**

Sum	**451.23**
Count	**21**

Confidence Level (95.0%)	0.175277

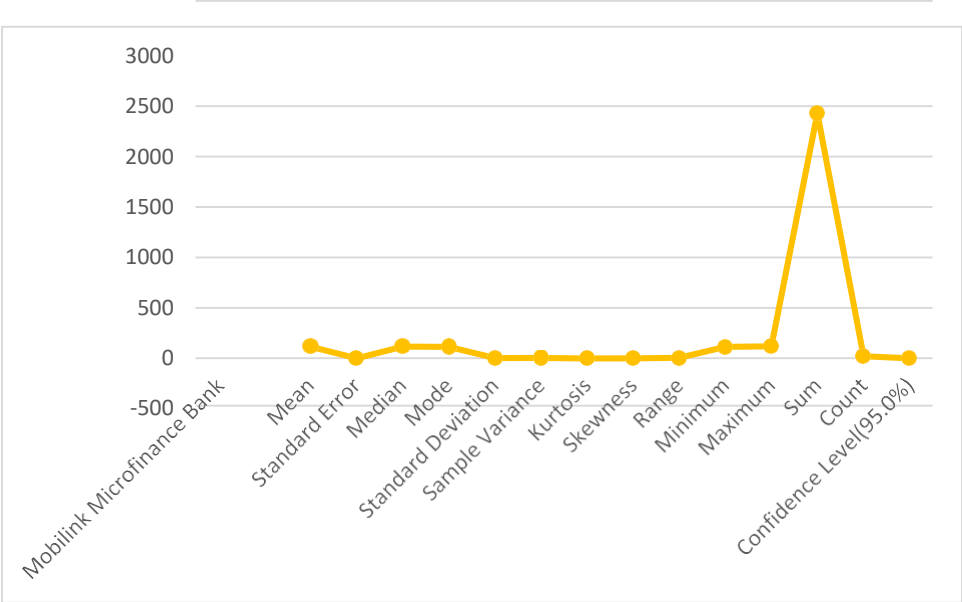


The descriptive analysis of Khushal microfinance bank is viewed and it shows that bank is performing its financial services in the market efficiently. The graphs show that it is normally distributed and has managed to delivers its services in the market. The skewness value is 0.5 and it perfectly positively skewed. The skewness is positively towards the right side and this indicatesthe ability of Khushal micro finance bank to easily sold off its financial services in the market. Thevalue of Kurtosis is less than 3 and it shows that it is Platykurtic however, the risk associated withthe bank is very low. The standard deviation is around 0.3 and it is very less that shows the investment in Khushal microfinance is not risky.

Mobilink Microfinance Bank	
Mean	**115.7343**
Standard Error	**0.384707**
Median	**116.02**
Mode	**113.9**
Standard Deviation	**1.762951**
Sample Variance	**3.107996**

Kurtosis	**-0.97946**
Skewness	**0.014124**

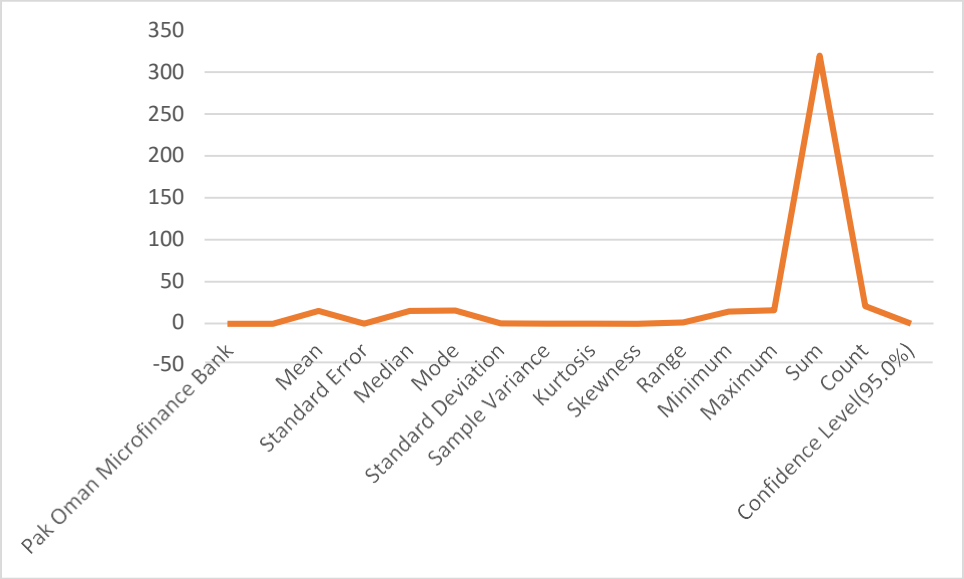
Range	**6.1**
Minimum	**112.9**
Maximum	**119**
Sum	**2430.42**
Count	**21**
Confidence Level (95.0%)	**0.802486**



The descriptive analysis of the Mobilink micro financing bank is presented, and it forecasts that banks have been consistently engaged in risk minimization. The bank's standard deviation is 1.7, which is relatively low when compared to other banks. The banks are dealing with their financial services and advertising them in the market, with a kurtosis of -0.9, indicating that Mobilink micro finance bank is platykurtic and is weakly skewed to the positive side. The skewness strength is very low due to the lack of probability distribution in the growth of the bank. The skewness has tobe increasing, this indicates that the bank may simply sell off its financial services in the market. Mobilink Microfinance Bank is one of Pakistan's best, and it participates in a variety of initiativesto market itself in the banking business.

PakOman Microfinance Bank

Mean	15.22762
Standard Error	0.080015
Median	15.25
Mode	15.6
Standard Deviation	0.366673
Sample Variance	0.134449
Kurtosis	-0.01036
Skewness	-0.00733
Range	1.45
Minimum	14.55
Maximum	16
Sum	319.78
Count	21
Confidence Level (95.0%)	0.166908



The descriptive study of Pak Oman microfinance bank is examined, and it reveals that the bank provides effective financial services to the market. The graphs demonstrate that it is typically dispersed and that it has been able to successfully supply its services in the market. It is completely negatively skewed with a skewness score of -0.007. The skewness is favorably to the left, indicating

Pak Oman Micro Finance Bank's capacity to readily sell off its financial services in themarket. The value of Kurtosis is less than three, indicating that it is Platykurtic; yet, the bank's risk is relatively minimal. The standard deviation is roughly 0.3, which is rather low, indicating thatinvesting in Pak Oman microfinance is not a dangerous proposition.

Correlation Test

Correlation	**APNA Microfinance Bank**	**Khushal Microfinance Bank**	**Pak Oman Microfinance Bank**	**Mobilink Microfinance Bank**
APNA Microfinance Bank	**1**	-0.05232	-0.17325	**-0.139700656**
Khushal MicrofinanceBank	-0.05232	**1**	0.825143	**0.386824495**
Pak Oman Microfinance Bank	-0.17325	0.825143	**1**	**0.677239866**
Mobilink MicrofinanceBank	**-0.1397**	**0.386824**	**0.67724**	**1**

The correlation test has been run on the results and it shows that there is a positive correlation between some of the banks while some of the banks have negative correlation. This shows that APNA microfinance banks is negatively correlated with the other existing microfinance banks. The existence of correlation shows that there is a positive relationship between Pak Oman microfinance bank and Khushal microfinance bank. The positive value of the correlation set shows that banks are performing good in the market and are contributed in bringing growth in the banking industry. However, the existence of negative correlation shows that these banks are involved in the diversification that tends to reduces the risk.

CONCLUSION AND RECOMMENDATIONS

It has been recommended that micro finance banks have been involved in bringing advancement and development in the banking sector. They introduced new things and take up an initiative to upgrade their current program. There is need to focus on bringing financial technology that focuseson increases

the efficiency and effectiveness of the customers' accounts and allow them to easilyaccess the banking resources.

Microfinance has arisen as an economic development strategy for low-income individuals and small enterprises who lack access to traditional banking services. Financial institutions have too much competition, thus MFIs must utilize financial technology to keep up. Without a question, microfinance has played a significant part in the eradication of poverty throughout history. Microfinance has made a significant contribution to improving impoverished people's living conditions by boosting their earnings, savings, health, and possessions. Mobile banking does not offer financial services such as microcredit, micro insurance, or small loans. When financial organizations incorporate financial technology, their reach expands.

The main vision of the micro finance bank is to highlight the poverty in the society and for more financial services but bringing up new innovative solution to eliminate the poverty from the society. It caters the needs and demands of the poor people and provide them different innovativefinancial solutions that can improve their living, moreover the banks also provide different solutions to the poor people and have different financial plans that will help them in living even abetter life. The micro finance bank provides leverage options and easy payment plan for its customers and allow them to pay according to their choice. This broad vision brings a stop a lot ofchange in the society and now people are moving towards the microfinance bank.

The micro finance bank must have engaged in providing different types of banking services to its customers and clients. The micro finance banks are entitled to provide digital banking deposits and ATM card services to its clients, moreover there are different types of deposits that must be issuedto the customers according to their need and requirement. The organizations must provide different installment plans for the loan's repayment, this is a new initiative that must be taken by the micro finance banks to help the poor people and underprivileged. The ATM card service must be allowing to customers to easily access their money and withdraw them from their account. Thesedeposits can easily run through any banks and give the money to the customers. The digital bankingservices is highly reliable and allow customers to access their money and is getting engaging onlinetransferring of bank. It is recommended to provide digital banking services to the customers and upgrade it on timely basis. So, the digital banking services can easily be accesses 24/7 and the money can be

transferred across the world.

It is also recommended that microfinance bank must also engaged in providing different types of loans to the customers according to their need. It must focus on providing farming loans, business loans, student loans and house loans on an easy installment plan. These loans must be given on the market interest rate that is quite low than the usual rate, the installment plan is set according to the financial credibility of the client and customers. The customers would be allowed to pay the principal amount and loan payments according to their financial health. There are different types of insurance plans provided to the customers for the retirement and health, the bank provides healthinsurance, life insurance, car insurance and different other types of insurance. There are different types of insurance plans given to the customers for their basic needs.

The different types of deposits accounts that are currently given to the customers are Mustaqbil Term Deposit, Mahaana Munaafa Term Deposit, Bachat Account, Sahulat Current Account, MeraTahaffuz Term Deposit, Aasaan Remittance Savings Account, Aasaan Savings Account and Aasaan Current Account. These type of deposit accounts are given by the bank to its customers and clients. The customers are given variety of options to choose the deposit around according totheir choice. These deposits accounts secure the payment of the customers and keep them safe.

Recommendations for the Microfinance Bank to improve its operations and client happiness are provided herein. The researcher posits that interactions between bank personnel and clients should be succinct to afford both parties sufficient time for essential engagements. A limitation on personnel is proposed, guaranteeing the recruitment of only qualified and skilled individuals. To enhance equity and efficiency, it is advisable to eradicate nepotism and implement a systematic authority-transfer framework. Prioritising staff training is essential for enhancing the bank's long-term efficiency, but consistent advancements and benefits should be provided to sustain employee contentment.

The atmosphere of branch offices would improve through refurbishment and remodelling to create a more inviting workplace. A dedicated service counter is proposed for longstanding clients and beneficiaries to enhance service delivery. Research observations revealed the absence of assessment teams, impeding effective monitoring; thus, the establishment of functional evaluation teams is necessary. It was observed that numerous branches lacked a dedicated utility credit counter, and it

would be advantageous to allocate counters for various services to enhance operational efficiency. The lending process could be enhanced through essential modifications, increasing its efficiency. Ultimately, it is imperative that precise information is easily accessible to investors to foster confidence and openness.

References

Ahmad, T. (2021). Service innovations in microfinance institutions. *Journal of Financial Services Innovation, 34*(2), 123-145.

Adeosun, O. (2021). The role of physical infrastructures in microfinance. *Journal of Microfinance and Development, 19*(3), 89-102

Anwar, S. (2019). The rise of peer-to-peer lending platforms in emerging markets. *Global Financial Technology Journal, 21*(1), 55-70.

Bari, S. (2021). Financial inclusion in Pakistan: The role of microfinance. *Asian Journal of Economic Policy, 45*(4), 67-81.

Durango, M. (2021). Financial technology and the banking industry. *Financial Innovation Review, 29*(5), 201-214.

Hussain, F. (2019). Microfinance institutions and poverty alleviation: A review. *South Asian Economic Review, 37*(2), 33-45

Iqbal, M. (2021). Customer satisfaction and the role of financial technology in Pakistan. *Journal of Financial Technology, 11*(1), 19-28

Khan, A. (2021). Microfinance's contribution to poverty reduction in Pakistan. *Journal of Development Studies, 22*(2), 142-157.

Khursheed, R. (2021). Microinsurance in the developing world: An analysis. *Journal of Insurance Studies, 17*(3), 45-60.

Mustafa, N. (2021). Technology adaptation in microfinance institutions. *International Journal of Microfinance, 16*(4), 78-94.

Nawaz, S. (2021). Microinsurance and its impact on low-income households. *Poverty and Finance Review, 28*(3), 101-116.

Nourani, K. (2021). The diffusion of financial innovations. *Journal of Economics and Financial Innovation, 33*(4), 215-230.

QAMRUZZAMAN, S. (2021). Service innovation adoption in the banking industry. *Journal of Banking and Finance, 30*(1), 31-45.

Qalati, S. (2021). Microinsurance systems and their effectiveness: Evidence from India. *Global Journal of Microfinance Research, 24*(2), 90-105.

Rabbani, Z. (2021). Microinsurance as a tool for economic security. *Journal of Social and Economic Development, 18*(3), 65-79.

Rehman, H. (2021). Microfinance institutions and financial inclusion. *Journal of Microfinance Studies, 25*(1), 19-35.

Sadiq, A. (2021). The role of financial self-sufficiency in microfinance institutions. *Journal of Economic Sustainability, 14*(4), 102-118.

Santos, V. (2021). The impact of fintech on financial services. *Financial Technology and Innovation, 19*(1), 78-92.

Shahid, K. (2021). Active borrowers and poverty reduction. *Journal of Microfinance and Poverty Alleviation, 27*(2), 122-138.

Ullah, M. (2021). Microfinance in Pakistan: Challenges and future directions. *Asian Journal of Microfinance and Development, 34*(1), 99-113.

WINGA, J. (2021). Financial innovation and economic growth in developing countries. *International Journal of Economic Research, 19*(2), 44-56.

Younas, M. (2021). The impact of microfinance duration on poverty levels. *Development Policy Review, 25*(3), 130-144.

Yumei, T. (2021). Microfinance and poverty alleviation: The role of active borrowers. *Asian Journal of Economic Development, 23*(2), 57-71.

ZEB, S. (2021). The effect of borrower participation on microfinance sustainability. *Microfinance Journal of Pakistan, 22*(3), 67-84.