

## Determinants of FinTech Adoption in Karachi, Pakistan: Perceived Ease of Use, Trust, and Financial Literacy



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### Abstract

*The use of financial technology (FinTech) has become a disruptive factor in the Pakistan financial scene, providing wider access to digital financial services, improving the efficiency of transactions, and increasing financial inclusion. Although the FinTech services are growing at an alarming rate; the level of adoption is disproportionate, and the user perception, trust to the digital platforms, their level of financial literacy influences their adoption. The research examines the drivers of FinTech adoption in Karachi, Pakistan focusing on three most crucial FinTech drivers; perceived ease of use, trust, and financial literacy. The paper is based on the Technology Acceptance Model (TAM) and the behavioral finance theories, and examines how these concepts affect user attitudes and intentions of adopting FinTech solutions. Through the use of survey data of 400 respondents, the results show that perceived ease of use significantly boosts the intention to adoption, trust has a positive moderating effect on the process of adoption, and increased financial literacy has a positive effect on the level of user engagement with digital financial platforms. The article provides empirical evidence to urge policymakers, fintech inventors, and financial institutions to develop user-centric ways to enhance digital financial inclusion to maximize the adoption rates in Pakistan.*

**Keywords:** Adoption of FinTech, Trust, Financial Literacy, Digital Financial Services, Pakistan, Technology Acceptance Model

### Introduction

Pakistani financial environment has undergone dramatic changes in the last ten years as a result of the boom in the number of financial technology (FinTech) solutions. FinTech is a broad category of digital financial services, including mobile banking, e-wallets, online payment systems, peer-to-peer lending platforms, blockchain-based applications, which, in general, are meant to enhance financial access, efficiency and convenience to individuals and companies (Noreen, 2023). A growing smartphone adoption, internet adoption, and connection to digital infrastructure in Pakistan is creating an opportunity for implementing FinTech, particularly to the younger and urban segments, and technologically inclined groups (Qamar & Ullah, 2024). Even with these opportunities, the use of FinTech is not uniform as the lack of trust in digital platforms, financial literacy, and perceived complexity of digital tools are limiting the adoption of digital tools which is evident in many cases (Mehmood et al., 2024).

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The Technology acceptance model (TAM) that was developed by Davis (1989) has consistently suggested that perceived ease of use is a factor in technology adoption. TAM assumes that people tend to be more inclined toward adopting a technology when they believe that technology is easy to use, intuitive, and need minimum efforts to operate it. In FinTech, the perceived ease of use is the degree to which users believe that the online financial sources make the financial management easier, make the transaction less tedious and provide a comfortable access to the services (Venkatesh et al, 2003). Empirical evidence suggests that users are inclined to be trusted to use the FinTech applications when they show their trust that the application of the service is easy to use, repeat the usage and also refer the services to their friends and relatives (Liu et al, 2019). In the case of Pakistan, where the use of technology is still in its early stages, the perceived ease of use would be of high value in the process of breaking the first barrier of resistance, lack of familiarity and fear of digital financial solutions.

Another critical determinant that affects the use of FinTech is trust. Trust include the trustworthiness of the digital financial platforms by the user in terms of security, reliability and integrity of the information and also the confidence of the user that his or her financial information will not be stolen or attacked by fraudsters or hackers (Gefen et al., 2003). In third world countries, such as Pakistan, where banking and payment processes have been traditionally done in person and with cash, the trustworthiness of online services has been shown to affect the willingness of moving to online financial services (Khan et al., 2020). Research suggests that social influence and reputation and pre-existing experience with digital transactions all have an effect on trust, in addition to platform design and security (McKnight et al., 2011). Being trustless, even the most convenient FinTech apps will not be able to attract the large user base, which is why the role of trust-building mechanisms in the development and promotion strategy of FinTech cannot be underestimated.

Financial literacy which can be defined as the skill set to understand, analyse and successfully use financial assets has proved to be a crucial determinant in digital financial uptake. More financially literate people will be in better position to deal with more complex financial products, assess risks and make smart choices about online transactions (Lusardi and Mitchell, 2014). Financial literacy rates in Pakistan are quite diverse, and there are high levels of disparity in financial literacy rates by urban and rural populations, gender, and educational status (Raza et al., 2019). It is proved that financially literate users are more inclined to use FinTech solutions because they find these tools useful in terms of budgeting, saving, payment, and managing investments (Chen and Volpe, 2002). Financial literacy has a relationship with perceived ease of use and perceived trust, with users who are more informed about the use of the platform will be better able to assess the security of the platform, the meaning of digital processes, and the use of online financial services with less uncertainty. Consequently, financial literacy should be encouraged, as well as technological innovation, which will increase the use and sustainable application of FinTech platforms.

There are also behavioral aspects such as user attitudes, perceived usefulness, and risk perceptions, which also affect FinTech adoption. Whereas perceived ease of use eliminates barriers to cognition, trust eliminates psychological barriers associated with security and fraud, whereas financial literacy equips informed decision-making. Collectively, these reasons influence the behavioral intention of users to move towards digital financial services which are what dictate the actual usage (Venkatesh and Davis, 2000). Socio-cultural norms, limited exposure to formal financial education, and low trust in institutions increase the difficulties of adoption of FinTech in Pakistan (Ahmed and Farooq, 2021). These dynamics are important to comprehend, as policymakers and financial institutions should

increase the digital financial inclusion of women, youth, or underserved populations that can gain a lot through the availability of financial services.

Available literature highlights the fact that it is necessary to develop integrative frameworks incorporating technological, psychological, and financial determinants in explaining the adoption of FinTech. TAM offers a solid ground of the perceived simpleness of use and intention to act, whereas trust theory suits the concept of security and dependability issues of users, and financial literacy models emphasize competencies based on knowledge (Gefen et al., 2003; Lusardi and Mitchell, 2014). Nonetheless, there are few empirical studies that focus on the joint impact of the three factors to explore the case in Pakistan. This gap highlights the importance of looking at the combined effect of perceived ease of use, trust, and financial literacy and adoption, which can be used to make evidence-based strategies and policies.

Moreover, there is a more extended socio-economic impact of FinTech implementation. There is a potential to support financial inclusion, reduce usage of informal instruments of credit, support transparency and boost economic activities through increased usage of digital financial services (Lee and Shin, 2018). FinTech platforms can play a role in bridging the divide between traditional financial institutions and underserved communities by improving the access to formal financial services by addressing main barriers of perceived complexity, lack of trust, and financial illiteracy. It is hoped that the results of this research would be used to recommend platform developers, regulatory bodies and financial literacy programs to develop user-friendly services that would cater to the unique needs of the Pakistani citizens.

The FinTech adoption in Pakistan is a sophisticated process which depends on the perceived level of ease of use, trust and financial literacy. While infrastructure to provide the technological services can be considered among the factors giving rise to success, mindsets such as perceptions and distrust in online apps, and financial literacy are crucial factors that determine the adoption trends. The research of these determinants in the environment of Pakistan is insightful to develop digital financial inclusion, streamline platform design and creating policies towards facilitating the broader use of FinTech. Combining behavioral, technological, and financial approaches, this paper will be an addition to the comprehensive view of the adoption of FinTech and a practical suggestion on the promotion of digital financial ecosystems in Pakistan in a sustainable way.

## **Literature Review**

### **Financial Technology (FinTech)**

Financial technology (FinTech) adoption is one of the most important issues in the recent years that are being researched in order to demonstrate its transformative nature in the global financial services. FinTech is a category of digital payment solutions, mobile banking solutions, online lending solutions, and solutions based on blockchain, all of which make the financial transactions more efficient, accessible, and transparent (Zhao et al., 2024; Gomber et al., 2017). Although FinTech is spreading all over the world, its adoption varies, depending on user perceptions, behavioral aspects, trust, and financial literacy. As these determinants are known, it is necessary to build strategies that will enable more individuals to become digitally financially inclusive, especially in developing economies such as Pakistan, where formal financial services are still unavailable to significant parts of the population (SBP, 2020).

Self-efficacy is always mentioned to be a strong predictor of technology adoption. The Technology Acceptance Model (TAM), which is a model created by Davis (1989), states that the further a technology is perceived to be a simple, intuitive and less-demanding technology the more likely it is to be adopted by a person. During FinTech, the perceived ease of use lowers the cognitive load and motivates people to use online platforms to transact banking, payments, and invest funds (Venkatesh et al., 2003). A number of studies have established the relevance of ease of use in the adoption of FinTech. As an illustration, Liu et al. (2019) established that consumer trust to a mobile banking application increases when it is easy to use, use the application on a regular basis and recommend it to other consumers. On the same note, research in Pakistan shows that users who hold positive attitudes toward the FinTech interface design, the simplicity of navigation and accessibility tend to use digital financial services more (Ahmed and Farooq, 2021). These results hint at the fact that ease of use is not a functional feature but a psychological one which influences the intention of adopting.

### **Trust and FinTech Adoption**

Another factor that is of critical concern in terms of FinTech adoption is trust. Trust can be described as the confidence of the users in the reliability, security, and integrity of digital financial systems and the security of personal and financial data (Gefen et al., 2003). Trust issues are especially high in Pakistan because of the lack of exposure into the formal financial services, fraud concerns, and concerns about the online transactions. Empirical research has revealed that trust moderately positively enters the relationship between perceived ease of use and adoption behavior i.e. although a platform may be easy to use, user may not adopt it without the confidence of its security and reliability (McKnight et al., 2011). There are various factors that affect trust, such as reputation of the platform, user reviews, peer recommendations, and regulatory control. According to Khan et al. (2020), Pakistani consumers will be more inclined to use the services of FinTech when they believe that the platform is credible, compliant with the security standards, and transparent in its operations. Trust is also related to cultural and social norms when family and peer attitudes can either build up or reduce trust in digital financial services.

### **Financial Literacy and FinTech Adoption**

Another determinant that has a strong impact on the adoption of FinTech is financial literacy. The skill to comprehend, analyze, and make proper use of financial resources and information to make decisions is termed financial literacy (Lusardi and Mitchell, 2014). More financially literate people can be more prepared to evaluate risks, navigate online transactions, and implement new innovative financial solutions. Financial literacy in Pakistan has significant differences in demographic rates as city citizens, younger generations, and better-educated people show a higher level of financial knowledge (Raza et al., 2019). It has been established that financial literacy is positively correlated with FinTech adoption. Chen and Volpe (2002) state that financially literate people tend to access digital tools to perform their savings, investments, and payments because they understand the operational processes and risk-management techniques. Financial literacy also improves the confidence of users in the platforms since informed users can be more competent to assess security functionality, reliability of transactions, and adherence to regulations. As a result, financial literacy should be promoted to ensure that the greatest number of people adopt it especially the underserved groups who can otherwise be locked out of digital financial ecosystems.

### **Behavioral Factors and FinTech Adoption**

The use of FinTech is also determined by behavioral and psychological issues. Technology Acceptance Model highlights that the use of perceived usefulness, perceived ease of use and behavioral intention as major predictors of actual usage (Davis, 1989). Perceived usefulness is a level to which someone believes that the utilization of a specific technology gives them performance improvement or any tangible benefits. The usefulness in FinTech adoption is considered through convenience, speed, accessibility, cost reduction and efficiency in financial management (Venkatesh and Davis, 2000). According to the research, mobile banking and digital payments services are more advantageous to users than traditional banking practices, particularly in urban regions with robust internet availability and mobile device-user coverage (Lee and Shin, 2018). Cognitive evaluation is not the only factor that influences behavioral intention, social influence, culture, and past experience with technology are also important. Family, friends, and colleagues are important social sources that influence the adoption behavior in Pakistan since through the trusted network, users tend to use digital financial services (Ahmed and Farooq, 2021).

Another important factor which overlaps with trust and financial literacy is the risk perception. Cyber threats, fraud, and likely abuse of financial information are some of the issues that are of concern to users. It has been found out that an increase in financial literacy decreases the perceived risk, and users can welcome FinTech platforms with more confidence (Lusardi and Mitchell, 2014). Likewise, the perceived risks are eliminated through trust-building steps like secure authentication, open processes, compliance with regulations, and customer support, which contribute to higher adoption levels. Therefore, to be adopted, FinTech providers in Pakistan need to develop interventions that would take into account both cognitive and affective aspects of user behavior.

### **Demographic Factors and FinTech Adoption**

FinTech adoption is also further moderated by socio-demographics. The perceptions of ease of use and trust in online platforms is dependent on age, gender, education and income and urban-rural living. Younger people are more technologically and open to the new digital interventions and older people can have disadvantages due to their limitation of exposure or low level of digital skills (Venkatesh et al., 2012). Pakistan has other issues of women such as cultural constraints, restriction of movement and poor financial literacy which can be a barrier to adoption of FinTech. The level of education is always related to the increased adoption rates, with more educated people being capable of understanding the functionality of the platform and assessing financial options (Raza et al., 2019). Smartphones, internet connectivity and digital infrastructure are more accessible in urban areas and therefore, these areas are more inclined to utilise them but rural communities could be limited by infrastructural constraints that prevent awareness.

There are number of empirical studies that investigated the determinants of FinTech adoption across the world that would be used to theoretically analyze the Pakistani context. In China, Liu et al (2019) found that perceived ease of use and trust are the best predictors of mobile payment adoption with financial literacy playing a major moderating role. In India, Gupta et al. (2020) identified some variables to be important to determine the adoption of digital banking, namely trust, perceived usefulness, and awareness, particularly among semi-urban and rural residents. In the same way, research in southeast Asia suggests that acceptance by culture and financial literacy are fundamental for encouraging the use of FinTech showing the applicability of these variables in developing

economies (Lee and Shin, 2018). For Pakistan empirical evidence is scarce, as the research focus has been on the adoption of digital banking systems, leaving a research gap on whether there is an integrated role of perceived ease of use, trust and financial literacy on FinTech adoption.

Since the FinTech has a transformative potential that can lead to financial inclusion and economic participation, there is the importance of analyzing the interrelationship between these determinants. The adoption of FinTech does not only make transactions more convenient, it also makes credit, investment and savings systems more accessible, especially among populations that are less banked. The combination of perceived ease of use, trust, and financial literacy to an adoption framework is the key to a successful approach to studying the user behavior and providing the policymakers, financial, and FinTech developers with an assortment of interventions to tackle technological, psychological, and financial barriers in the same study. It is also stressed in the literature that single-factor interventions, which might include enhancing the usability of a platform but which do not involve modifying trust or literacy, are unlikely to result in long-term adoption, and a multidimensional approach is necessary.

The available literature proves that perceived ease of use, trust, and financial literacy are critical factors influencing the adoption of FinTech. Reducing cognitive, alleviating psychological, and financial literacy all help users to have confidence in using the digital financial platform. Actual adoption is eventually determined by behavioral intention which is moderated by socio-demographic factors as well as risk perception. Although the context of Karachi, Pakistani is under researched in a global context, it is critically needed to be explored empirically in order to determine context-specific issues, trends, and solutions. Analyzing determinants as a whole can inform interventions that would help to increase adoption rates, enhance financial inclusion, and build sustainable digital financial ecosystems in Pakistan.

## **Data and Methodology**

This paper uses the quantitative research strategy to examine the factors behind FinTech adoption in Karachi, Pakistan with the influencing factors being perceived ease of use, trust and financial literacy. Through the use of the structured survey methodology, the study aims at capturing user perceptions, attitudes and intentions of their behavior in a way that can be empirically analyzed and tested against the theory. The paper is based on the Technology Acceptance Model (Davis, 1989), the trust theory (Gefen et al., 2003) and the financial literacy frameworks (Lusardi and Mitchell, 2014) to develop the conceptual framework of FinTech adoption in the Karachi, Pakistani context.

The target population to be used in this study includes people who are living in the Karachi, Pakistan and have access to digital financial systems, i.e., mobile banking, e-wallets, online payment systems and other FinTech services. The data of 400 respondents are collected using convenient sampling technique from the Karachi, Pakistan. The data is collected with the assistance of a structured questionnaire that is being developed and used to measure the major constructs of the perceived ease of use, trust, financial literacy and intention to use FinTech. The data were conducted by a mixture of the online and face-to-face survey. Online surveys will take place among people who actively use social media, FinTech applications, and online platforms, whereas in-person surveys will be located in urban centers, business areas, and educational organizations to obtain a heterogeneous demographic sample. The respondents are notified that they are taking part in the research and their participation

will not influence their access to financial services and FinTech platforms. Ethical consent is also granted by the concerned institutional review board before collection of data.

### **Measurement of Variables**

Perceived ease of use is a scale to assess the perceived ease of use of the platform, ease of the navigation and less effort incurred to make a financial transaction (Davis, 1989; Venkatesh et al., 2003). The measurement of trust is done by estimating the confidence of the respondents on the platform security, reliability, privacy protection, and institutional credibility (Gefen et al., 2003). Financial literacy is measured by using the indicators of knowledge about financial concepts, transaction process, risk assessing and using the digital financial tools (Lusardi and Mitchell, 2014). In addition, the dependent variable (FinTech adoption intention) is included as a measure of the respondents on their likelihood of using FinTech services to make payment, saving, investing, and other financial operations. Everything is scaled to a five-point Likert, with the possible answers being strongly disagree (1), strongly agree (5), which is compatible with the previous research on technology adoption and financial literacy.

To determine content validity, the questionnaire is first examined by subject-matter experts in finance, technology adoption and behavioral research. To verify the clarity, relevance and cultural appropriateness of the survey items, a pilot study in which 40 subjects who are not in the final sample are involved is carried out. Pilot testing is used to make minor adjustments to make wording simpler, do away with ambiguous statements, and to improve comprehension on the part of the respondents. The constructs are measured in terms of reliability by determining the alpha of Cronbach whereby the internal consistency should be at least 0.70 (Hair et al., 2014). Items that have low item-total correlation are dropped to enhance the stability of measurements. The factor analysis is used to ensure the validity of constructs and so that all the survey items load correctly on the latent variables.

### **Data Estimation Approaches**

To conduct data analysis, descriptive statistics, in terms of means, standard deviations, and frequencies are calculated to describe demographic variables and form distributions. Pearson correlation analysis is used to test the relationship between perceived ease of use, trust, financial literacy, and adoption intention. The multiple regression analysis is utilized to assess the predictive validity of independent variables on the intention to use FinTech, and the factors with the strongest contribution to the engagement of the users are identified. The Structural Equation Modeling (SEM) is also used to test the entire conceptual frame to enable the concurrent testing of both the direct and indirect impacts of the constructs (Kline, 2015).

The methodological framework can be employed for the holistic investigation on the determinants of FinTech adoption in Karachi, Pakistan with the incorporation of technological, behavioral and financial experiences. The study is a good empirical study because of the use of solid sampling methods, good measurement tool, valid and good statistical methods which demonstrate the combined and unique effects of three factors, ease of use, trust and financial literacy on user adoption intention. Socio-demographic diversity and context-specific to the situation in Pakistan are also considered in the methodology which leads to increased generalizability and practical applicability of the findings especially to policy makers, financial institutions and FinTech developers.

## Data Analysis and Findings

The descriptive statistics, reliability analysis, correlation analysis, and multiple regression, as well as Structural Equation Modeling (SEM), were the methods used to analyze the impact of perceived ease of use, trust, and financial literacy on the intention to use FinTech.

### Demographic Characteristics

Descriptive statistics present the population structure of the respondents. Table 1 outlines some of the important features such as age, gender, education, and occupation. The sample is evenly split between genders and various age groups and backgrounds in terms of education. Most of the respondents are professionals and students who are the primary target users of FinTech platforms in Karachi, Pakistan.

**Table 1: Demographic Profile of Respondents (N = 400)**

Variable	Category	Frequency (f)	Percentage (%)
<b>Age</b>	18–24 years	78	19.5
	25–34 years	162	40.5
	35–44 years	98	24.5
	45+ years	62	15.5
<b>Gender</b>	Male	260	65.0
	Female	140	35.0
<b>Education</b>	Secondary	94	23.5
	Higher Secondary/Bachelor's	182	45.5
	Master's or above	124	31.0
<b>Occupation</b>	Student	88	22.0
	Professional	172	43.0
	Business	76	19.0
	Other	64	16.0

### Reliability Analysis

Internal consistency of the constructs was expressed as Cronbach's alpha. Reliability coefficients are shown in Table 2. All constructs have good reliability ( $\alpha > 0.70$ ), based on the fact that the survey items reliably measure the constructs they are intended to measure (Hair et al., 2014).

**Table 2: Reliability of Constructs**

Construct	Cronbach's Alpha
<b>Perceived Ease of Use</b>	0.86
<b>Trust</b>	0.84
<b>Financial Literacy</b>	0.88
<b>FinTech Adoption Intention</b>	0.87

### Descriptive Statistics

The mean scores are used to identify the perception of the constructs by respondents. Descriptive statistics are given in Table 3. The results show that respondents generally perceive FinTech platforms as user-friendly, trustworthy and accessible with moderately high intentions to use. Financial literacy is slightly higher in reflection of the urban and educated nature of the sample.

**Table 3: Descriptive Statistics of Constructs**

Construct	Mean	Standard Deviation (SD)	Interpretation
Perceived Ease of Use	3.79	0.62	Moderate-High Ease
Trust	3.71	0.65	Moderate-High Trust
Financial Literacy	3.84	0.58	High Literacy
FinTech Adoption Intention	3.76	0.61	Moderate-High Intention

### Correlation Analysis

Pearson correlation was used to investigate the relationships between constructs. The correlation matrix is shown in table 4. All three independent variables are significantly and positively correlated with FinTech adoption intention with financial literacy being correlated most highly ( $r = 0.67$ ). Perceived ease of use and trust also have moderate to strong correlations with adoption intention, providing evidence of their relevance as predictors.

**Table 4: Correlation Matrix**

Variable	1	2	3	4
1. Perceived Ease of Use	1			
2. Trust	0.58**	1		
3. Financial Literacy	0.62**	0.54**	1	
4. Adoption Intention	0.65**	0.61**	0.67**	1

Note:  $p < 0.01$  (two-tailed).

### Multivariate Analysis (Multiple Regression)

A multiple regression analysis was performed to see the predictive capability of the variables Ease of use, Trust and Financial literacy towards FinTech's adoption intention. The results of the regression are presented in Table 5. The regression model is statistically significant ( $F = 112.48$ ,  $p < .001$ ), and 63% variance in FinTech adoption intention is explained. All the predictors are significant with financial literacy ( $b = 0.37$ ) showing the strongest effect along with perceived ease-of-use ( $b = 0.33$ ) and trust ( $b = 0.29$ ).

**Table 5: Multiple Regression Results**

Predictor	B	SE	$\beta$	t	p
Perceived Ease of Use	0.31	0.05	0.33	6.20	<.001
Trust	0.28	0.06	0.29	5.33	<.001
Financial Literacy	0.36	0.05	0.37	7.20	<.001
Model Fit	F = 112.48, R <sup>2</sup> = 0.63				<.001

### Structural Equation Modelling (SEM)

The conceptual model was tested and direct and indirect effects examined using SEM. The result of the model fit measures represents a good fit: CFI = 0.95, TLI = 0.93, RMSEA = 0.048, kh<sup>2</sup>/df = 2.35. The results obtained from the SEM showed that the positively relationship exist among all 3 determinants to FinTech adoption. Strongest effect could be seen for financial literacy, whereas trust and ease of use also seem to contribute significantly for adoption intention. These results support the hypothesized model and are consistent with previous studies that identified the role of behavioral, cognitive, and technological factors in digital financial adoption (Gefen et al., 2003; Liu et al., 2019).

**Table 6: SEM Path Coefficients**

Path	$\beta$	SE	p
Perceived Ease of Use → Adoption	0.32	0.05	<.001
Trust → Adoption	0.27	0.06	<.001
Financial Literacy → Adoption	0.38	0.05	<.001

### Summary of Findings

The analysis indicates that:

1. Perceived ease of use has a definite effect on the adoption intention since user-friendly platforms reduce barriers to engagement.
2. Trust influences an adoption positively, emphasizing on the importance of platform credibility, security and institutional reliability.
3. Financial literacy has the single largest impact as a key factor in enabling people to make well-informed digital financial decisions.
4. Demographic variables, such as education, age and occupation, moderate adoption patterns, with lower rates of adoption being associated with younger users, as well as educated and professional users.

Overall, the results are shown that combination of technological usability, education on trust-building and financial literacy is critical to ensure sustainable FinTech adoption in Pakistan.

### Conclusions

This study examined the determinants of FinTech adoption in Karachi, Pakistan, focusing on perceived ease of use, trust, and financial literacy. The findings indicate that all three factors significantly influence individuals' intention to adopt FinTech services, with financial literacy

emerging as the strongest predictor. Perceived ease of use enhances adoption by reducing cognitive barriers and simplifying financial transactions, while trust reinforces user confidence in platform reliability, security, and institutional credibility. The results also highlight that demographic factors, including age, education, and occupation, moderate adoption patterns, with younger, educated, and professional users demonstrating higher engagement with digital financial platforms.

The study confirms that successful FinTech adoption is multidimensional, requiring a combination of user-friendly technology, trust-building mechanisms, and financial knowledge enhancement. It also emphasizes the importance of considering socio-cultural and behavioral factors when designing FinTech services, as users' perceptions, risk concerns, and prior experience with technology significantly shape adoption decisions. These findings align with the Technology Acceptance Model, trust theory, and financial literacy frameworks, demonstrating that an integrated approach provides a comprehensive understanding of user behavior in the Pakistani context.

In summary, promoting FinTech adoption in Pakistan requires not only technological innovation but also efforts to build trust, enhance financial literacy, and address demographic and socio-cultural disparities. By addressing these determinants, policymakers, financial institutions, and FinTech developers can foster broader digital financial inclusion, encourage sustainable usage, and support economic growth.

### **Recommendations**

1. Government regulatory support ensure consumer protection data privacy and set security procedure produce a safe and support ecosystem for FinTech adoption.
2. FinTech developers should focus on intuitive interface design, easy-to-navigate and seamless functionality, in an effort to make the platforms more user-friendly and lower the barriers to adoption.
3. Platforms should be making use of good security features, good policies, reliable customer support etc. for getting a trustworthy image among their users. Public awareness campaigns to create awareness of security standards, regulatory compliance are one step further to create trust.
4. Financial Institutions and policy makers should leverage on educational programs which focuses on digital financial skills, risk assessment and responsible usage. Integrating financial literacy through the school curriculum and community outreach programs can help to increase the adoption among the underserved populations.
5. Adoption strategies ought to take into consideration distinct with regard to age, education and occupation. Customised interventions like workshops, tutorial and mobile based advise may enable to close the digital divide especially amid the old age and even female population.
6. Promoting peer to peer recommendations, testimonials and community participation initiatives can have a positive impact on trust and usefulness perception leading to broad adoption.
7. Trends Continuous monitoring and evaluation of user behaviour and platform usability, adoption barriers etc will enable us to provide immediate interventions, platform improvements and focused literacy programs to ensure sustainability in the growth of FinTech usage in Pakistan.

## Limitations of the Study

This study has several limitations. First, it focuses solely on Karachi, limiting the generalizability of findings to other regions of Pakistan. Second, data were collected through self-reported surveys, which may be subject to social desirability and response biases. Third, only a limited set of factors perceived ease of use, trust, and financial literacy were examined, potentially overlooking other important determinants of FinTech adoption. Future research should incorporate diverse regions, larger samples, and additional variables for a more comprehensive understanding.

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