▪ Global Social Sciences Review (GSSR) ▪ Vol. VII, No. I (Winter 2022) ▪ Pages: 168 –179
▪ DOI: 10.31703/gssr.2022(VII-I).17 ▪ URL: http://dx.doi.org/10.31703/gssr.2022(VII-I).17
▪ L- ISSN: 2520-0348 ▪ p- ISSN: 2520-0348 ▪ e-ISSN: 2616-793X
▪ Citation: Majid, S., Chaudhary, M. G., & Ali, U. (2022). Financial Literacy and Adoption of Fintech: The Role of Financial Risk Tolerance. *Global Social Sciences Review, VII*(I), 168-179. https://doi.org/10.31703/gssr.2022(VII-I).17

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Financial Literacy and Adoption of Fintech: The Role of Financial Risk Tolerance

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Abstract: *Fintech is one of the novelty in the area of finance, it's a collaboration of finance and technology. Now a day's technology has become a significant part of the financial industry. Major products and services of Fintech include ATM, peer to peer lending, crowdfunding, and cryptocurrency. Understanding of financial terminology and acceptance of related risk of Fintech products and services are important. In that concern financial literacy and risk tolerance are significant element. This study has been conducted to evaluate how financial literacy and risk tolerance directly or indirectly can impact an entrepreneur for adoption of Fintech. After applying research method and data analysis from entrepreneur of Lahore, Pakistan, it has been concluded that financial.*

Key Words: Financial Literacy, Fintech, ATM, Lahore, Pakistan

Introduction

The financial services industry is being transformed by rapid innovation in financial technology (FinTech) (Frost et al., 2019). From mobile payments to Robo-advice and app-based investing platforms to online banking solutions, FinTech innovations have had a significant impact on financial planning, well-being, and economic inequality (Frame et al., 2018). People who are more educated about money and others (such as technology, politics, health, and the environment) will have an easier time interacting with artificial intelligence (Aoun, 2017). As a result, the financial sector must develop supply-side solutions to promote financial literacy and remove demographic inequalities. Researchers in financial literacy should concentrate their efforts on improving the quality of financial education designed and provided by Lusardi (2015). Financial inclusion in the post-FinTech era is dependent on the visualization of data and the accessibility/user-friendliness of the interface.

Financial Risk Tolerance (FRT) is another essential factor in increasing investors' adoption of Fintech. People's financial-risk tolerance is usually

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referred to as their willingness to tolerate a certain degree of risk for an acceptable reward level. To better comprehend economic behaviour, it is necessary to understand people's tolerance for risk. Financial risk is a factor in practically every essential economic decision (Hermansson & Jonsson, 2021).

Various factors can explain risk tolerance, as demonstrated in previous studies. Many Studies regarding the characteristics of socioeconomic such as (education, income, and age, are included in this branch (Bucciol & Zarri, 2017; Grable & Joo, 2000). Furthermore, numerous research has been conducted about risk tolerance and gender, showing that risk-tolerant is more in men than women (Charness & Gneezy, 2012). Individual differences in financial risk-taking behaviour can be traced back to genetic diversity, a rich source of genetic variation Cesarini et al. (2008). People's personalities and qualities, according to Conlin et al. (2015), have an impact on whether or not they invest in risky assets. According to the findings of the study, financially literate individuals are more willing to take risks and invest more in risky investments than individuals who are not financially literate (Bannier & Neubert, 2016; Van Rooij et al., 2011). More money is stashed away in the bank accounts of those who are more financially competent (Feng et al., 2019). One of the most important goals has been to improve the general public's financial literacy for a long time.

Policymakers have focused on the link between financial literacy and the willingness to take financial risks (i.e., stock market involvement). The extent to which a person's financial literacy influences their proclivity to take on financial risk has been discovered in more studies (Grable & Joo, 1999). Financial risk tolerance is controlled by a person's demographic and behavioural factors (Bayar et al., 2020). There hasn't been enough research into the link between financial literacy and risk appetite. This article has been written to fill in the gaps in current knowledge. For our study, we are also looking into whether or not financial risk tolerance plays a role in adopting Fintech by entrepreneurs and business owners.

As a developing nation, Pakistan regards technological improvement as a significant factor in its growth and development (Rizvi et al., 2018). In Pakistan, the country's high youth population, rising usage of smartphones and the internet, increased customer demand for e-commerce and digital transactions, and the financial sector's ability to adapt to new technology are all factors that could result in considerable growth in Fintech. Despite this, people are reluctant to adopt new technology because of their fears about the underlying repercussions and risks linked with new technologies. Despite the potential benefits of financial technology, it's easy to overlook the dangers of a wide range of possible Fintech solutions. As a result of the lack of numerous coordinated foreign regulations for financial technology, digitalized business activities may be in danger (Treleaven, 2015). Shahid et al., 2017 claim Security and intellectual power, fear of recruiting high-quality clients, and regulatory uncertainty are all factors that impede financial technology's development in countries.

The literature is enriched in several ways by this study. When it comes to financial literacy and Fintech adoption, this is the first time in the literature that financial risk tolerance has been explored. Second, the study examines how financial literacy affects the adoption of Fintech by Pakistani entrepreneurs. Aiming to give empirical evidence on Pakistani financial literacy and risk tolerance in the adoption of Fintech, this study is conducted.

Literature Review and Hypothesis Development

Fintech

A broad phrase that refers to all technology breakthroughs that are associated with the financial services business, 'FinTech' is an acronym that stands for Financial Technology (RBI, 2018). A wide range of financial services that can be accessed and supplied through any digital channel are covered (He et al., 2017). A working definition of "FinTech" developed by the Financial Stability Board refers to any financial innovation that is

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enabled by technology and results in new business models, applications, processes, or products. These innovative technical innovations have the potential to make core financial services more accessible, safe, and time-saving in the future. They are now being tested (Leong et al., 2017). A further benefit of widespread use of financial technology (FinTech) is that it has the potential to increase the GDP of emerging markets by $3.7 trillion by the year 2025. (Manyika and colleagues, 2016).

When it comes to keeping up with the rapid changes in the financial sector, one way to do so is to use a finTech, which is becoming more popular as a result of technological advancements and innovative applications. This service area encompasses everything from paying bills to saving money to borrowing money to risk management and receiving financial advice (He et al., 2017). Consumption of technologically-based financial solutions is increasing as other industries undergo digital transformation (Saal et al., 2017). FinTech companies create more accessible and cost-effective transferring, borrowing, and investing of money (Manyika et al., 2016). Consumer banks and telecom companies are now using FinTech to deliver financial services over their current networks, expanding the definition of the term from its original meaning of banks and investment funds. FinTech service providers offer and improve FinTech services; however, only a small number of these services are being adopted. As a result, the factors influencing the acceptance and use of these services must be investigated.

Financial technology (Fintech) has become increasingly popular in Europe and Central Asia since mobile phones and government attempts to increase internet access have made it easier for people in rural and urban areas to get online. Fintech adoption in Europe and Central Asia has various problems, including a lack of remittance flow, increased transaction costs, and a low degree of access to financing for micro, small, and medium-sized firms, as outlined by Berg et al. (2020). They also highlight the enormous potential of Fintech in these regions (MSMEs). Global adoption of Fintech is driven by market size and demographics, according to Fu and Mishra (2020).

Financial Literacy and Adoption of Fintech

Financial literacy is defined as "the ability to comprehend core financial ideas and execute simple computations" Lusardi and Mitchell (2011). Huston (2010) defines human, financial literacy as the ability to understand the fundamentals of personal money and put that understanding into practice. According to the dictionary, the ability to successfully utilize knowledge and skills to manage financial resources to attain long-term financial stability is what financial literacy means (Coalition, 2007). It is common in the literature to refer to financial understanding as "financial literacy" or "financial knowledge" (Huang et al., 2013). There are several synonyms for "financial literacy," including the terms "financial literacy" and "financial capacity." It is pointless to have a rudimentary comprehension of financial principles unless and until this understanding is reflected in one's actual financial decisions and actions (Atkinson & Messy, 2012).

Despite the fact that financial literacy has been extensively researched in the literature, only a few studies have looked at the impact of financial literacy at the company level (Hsiao & Tsai, 2018; Shen et al., 2016). This study contributes to the body of knowledge on corporate financial literacy by presenting novel and noteworthy findings that add to the body of knowledge. Following the publication of this study's findings, there has been a growing understanding of what motivates technological innovation.

Financial technology has a tremendous impact on people's ability to obtain credit and other financial services. Mobile banking can be used in place of traditional banking services when users cannot access their accounts through their conventional banking channels. These individuals are ready to engage in financial transactions because financial services are reasonably easy to obtain and extensively available throughout the country (Hasan et al., 2020). According to their research, Brown and Slagter van Tryon (2010) named

financial education one of the twenty-first century's most prevalent financial and economic words. It was necessary to grasp technology in this case since new financial technologies needed the development of new methods of operating them. Financial communication in the twenty-first century is increasingly based on technology, necessitating technical and financial education acquisition.

Similarly to Shen et al., we discovered that financial literacy was a crucial factor in assisting people in closing the gap between their high levels of internet use and their low levels of financial management skills (2019). By applying financial literacy in FinTech, customers' educational levels are reflected, positively impacting digital financial inclusion. In addition, financial literacy was found to improve the likelihood of using digital financial products and services to promote financial accessibility among the general public (Hasan et al., 2020). It is not enough to increase financial knowledge; instead, it may be the most effective strategy for financial literacy and internet use. Belayeth Hussain and colleagues recognized the need for financial education to achieve financial security (2019). An analysis by Lyons et al. found that people in high-income countries were substantially more likely to use online payments than those in lower-income countries (2019).

Financial inclusion and accessibility are supported by the reasons for education in financial matters. We believe that a business owner's ability to make sound financial decisions is influenced positively by his or her level of financial literacy.

H1: There is a significant relationship between Financial Literacy and the adoption of Fintech.

The Moderating Role of Financial Risk Tolerance

Individual investors ' financial risk tolerance is essential when making investment decisions and deciding how to invest one's assets in financial markets. Both real estate and economic endeavours include a degree of risk. When making specific investment selections, both personal and institutional investors examine the investment's prospective return rate and its level of risk. The importance of this issue cannot be overstated when it comes to personal financial planning and portfolio optimization. Customer risk tolerance is critical for financial service providers to give the best service possible.

Age, gender, educational achievement, money, and marital status are all heavily weighted in the equation regarding demographics. Specifically, although some issues are still being debated, other conclusions are consistent. First, FRT decreases with advancing years (Morin & Suarez, 1983). In addition, women are less eager to take risks than males are (Grable, 2000). Third, education enhances FRT (Haliassos & Bertaut, 1995). Fourth, FRT rises as wealth and income increase (Bernheim et al., 2001; Cohn et al., 1975). Single investors (i.e., those not married) are more likely to take risks for the fifth time.

A theory of consumer risk published by Bauer (1960) explained how customers' sense of risk implies uncertainty about the negative repercussions of their decisions. Consumers are hesitant to use digital services because of the perceived risks. According to Li and Huang (2009), E-commerce channel adoption intention can be predicted by integrating the idea of perceived risk with the Technology Acceptance Model (TAM). There is great potential for digital financial services use in Pakistan, but a poor sense of risk dampens Fintech adoption plans in Pakistan. TAM provides a theoretical framework for describing how people use technology services. As per the work of Bruner and Kumar (2005), Individual adoption of technology is documented as TAM based on evaluations of perceived ease of use, usefulness, and attitudes and intentions toward its use. TAM's perceived benefits have been employed to increase the adoption of Fintech in several studies. Only the perceived dangers of Fintech were examined in this study, which is why consumers are reluctant to use it. In the words of Chuang et al. (2016), Through the merging of service trust and brand, the TAM model was used to identify better consumer behavioural intentions toward financial technology

(Jin et al., 2019). In this study, consumer awareness is a mediator in Malaysian consumer adoption of digital financial products and services (TAM).

H2: Financial Risk Tolerance positively mediates the relationship between Financial Literacy and adoption of Fintech.

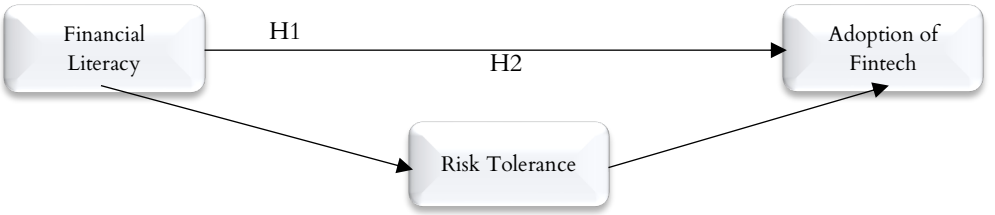

Figure 1: Conceptual Model

Methodology

Fintech adoption and financial literacy were assessed using a questionnaire, and the mediation influence of risk tolerance was examined. Purposive sampling was utilised in this investigation. In contrast, the respondent is required to run a business as this study focuses on adopting Fintech by entrepreneurs in Pakistan. An entrepreneur is the one who has established a new business or modified an existing business in some ways such as innovation, expansion, new product development, etc. 500 questionnaires were distributed through multiple channels such as emails, WhatsApp and Google Forms. The number of questionnaires returned was 203, indicating a response rate of 40.6%.

Table 1.

Demography	Frequency	%
Gender		
Male	147	72.41%
Female	56	27.59%
Financial Education		
Financially Literate	144	70.93%
Illiterate	59	29.07%
Age		
Less than 30 Years	54	26.60%
Less than 40 Years	97	47.78%
Less than 50 Year	23	11.33%
Less than 60 Year	29	14.28%
Total	203	
Work Experience (Years)		
<1	51	25.12%
From 1 to 3	34	16.75%
From 3 to 7	29	14.26%
>7	89	43.84%

During the first phase of data analysis, demographic information is gathered from the responses. Men accounted for 72.41 per cent of all respondents, while women accounted for 27.59 per cent. 70.93 per cent of respondents have financial education, compared to 29.07 per cent who do not have any financial education. 26.60 per cent are in their early twenties, 47.78 per cent are in their thirties, 11.33 per cent are in their forties, and 14.28 per cent are over 60. 25.12 per cent have less than a year's

experience, 16.75 per cent have 1-3 years of experience, 14.26 per cent have 3-7 years of experience, and 43.84 per cent have more than seven years of experience.

Measurement of Variables

Risk Tolerance (RT) is measured through survey questions about the tradeoff between risk and return. Survey questions are frequently used to assess risk tolerance preferences (Dohmen et al., 2011). A five-point Likert scale was established to seek the responses. A six-question test is used to determine financial literacy. For example, Anderson et al. (2017) used Lusardi's (2008, 2012) questions, but our questions were prepared following the Pakistani context. The level of the adoption of Fintech was measured through questions adopted by Kim et al. (2010) and Cheng et al. (2006).

Analysis Technique

We used Smart PLS (Partial Lease Square) to analyze data in this study. The smart PLS used the blindfolding, IPMA, Bootstrapping and PLS Algorithm to extract the desired results. On the other hand, we acquired some results such as path coefficient, IPMA, HTMT, model fitness, and the combined influence on the structural model from examining construct reliability and discriminant validity and statistics on collinearity cross-loading scale items. The study's validity and reliability have been confirmed by reliability and validity tests based on previous academics' and authors' specified benchmarks and threshold values.

Results and Discussion

Table 2.

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
FL	0.752	0.741	0.839	0.562
FinTech	0.842	0.881	0.894	0.684
FRT	0.853	0.877	0.897	0.689

The validity and reliability of the data under examination have been determined using the Cronbach Alpha, the AVE, and the Composite reliability tests, among other methods. Cronbach Alpha is a dependability indicator that should be used between 0.70 and 0.95, according to experts (Tavakol & Dennick, 2011). Cronbach Alpha values between 0.6 and 0.7 are considered adequate for the purposes of reliability testing; values greater than 0.8 are considered reasonable, but values greater than 0.95 are not considered satisfactory (Ursachi et al., 2015). When the Cronbach Alpha is greater than 0.7, the results are regarded as satisfactory (Alarcón et al., 2015). According to the authors' suggested Composite reliability value of 0.7–0.8, this degree of composite reliability is satisfactory (Aguirre-Urreta et al., 2013). Variance on the average Alarcón et al. (2015) found that an extracted value greater than 0.5 is acceptable for convergent dependability.

Discriminant Validity

Table 2.

	FL	FinTech	FRT
FL	0.749		
FTA	0.458	0.828	
RT	0.625	0.575	0.834

The Fornell-Lacker criterion can be used to measure discriminant validity. Construct discriminant validity examines how one construct is empirically distinct from another construct. According to Ahmad et al. (2016), it is necessary to use a measurement model devoid of redundant items to achieve discriminant validity. The correlation between each pair of latent constructs must be less than or equal to 0.85.

Heterotrait Morotrait Ratio (HTMT)

Table 3.

	FL	FTA
FTA	0.588	
RT	0.777	0.667

The discriminant validity is examined using the HTMT (Hetrotrait – Montrait ratio). In addition to assessing discriminant validity, HTMT helps identify the latent construct's indifference (Ab Hamid et al., 2017). An HTMT value near 1 lacks discriminant validity, as is standard for other measurement tools with a minimum acceptable value of less than 0.85. For discriminant validity, HTMT has a cutoff of 0.85, and a value near 1 interprets as a discriminant validity violation (Voorhees et al., 2016). ACCORDING TO THE ABOVE-CITED AUTHOR, the HTMT ratio's criteria for discriminant validity are met, as shown in the table below.

Cross Loading Arrange of Scale

Table 4.

	FL	FinTech	FRT
FL1	0.757	0.283	0.482
FL2	0.685	0.374	0.467
FL3	0.798	0.298	0.468
FL4	0.762	0.445	0.454
FTA1	0.234	0.526	0.343
FTA2	0.437	0.944	0.549
FTA3	0.433	0.899	0.54
FTA4	0.42	0.876	0.434
FRT1	0.402	0.327	0.744
FRT2	0.549	0.568	0.915
FRT3	0.532	0.556	0.862
FRT4	0.574	0.412	0.8

Cross-loading tests can evaluate the discriminated validity because multiple items can affect the results. Scholars suggest that a value greater than 0.5 for the cross-loading value test is acceptable for discriminant validity (Ab Hamid et al., 2017). Cross-loading can be permitted at 0.5 or 0.7, according to Hsu (2014) authors.

Path Co-Efficient

By estimating path coefficient R2 -value and Q2 value, we have assessed the impact of all constructs in our structural model.

To determine whether hypotheses about the relationships between variables are correct. Data were subjected to the path coefficient test. A path coefficient is a valuable tool for determining

whether a correlation exists between two variables directly or indirectly (Kashif et al., 2004). Consider the results of this test's summary of the relationships between variables. According to Smart PLS, these findings show that financial literacy is positively associated with independent and dependent variables (risk tolerance and Fintech adoption of entrepreneur). The results of the process are summarised in the following table:

Table 5.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Remarks
FL -> FinTech	0.186	0.187	0.085	2.223	0.028	Supported
FL -> FRT	0.624	0.625	0.059	10.515	0.000	Supported
FRT -> FinTach	0.456	0.463	0.098	4.710	0.000	Supported

All of the results in this study are below the academically recommended standard value. We can call this hypothesis a success based on these findings. As a result of this research, the hypothesis that financial literacy and risk tolerance are linked is supported by beta values of 0.186, 0.624, and 0.456, respectively, which are statistically significant. Scholars believe that if the T-Value is greater than 1.65, it has a high degree of significance (Sander & Teh, 2014).

Model Fitness Test

Table 6.

	R Square	R Square Adjusted
FinTech	0.349	0.341
RT	0.387	0.386

Our model's R-value is 0.348, 0.388, used to run the model fitness test. I think it's a good fit. This model complies with industry standards. Because the R-value is not sufficient to test model fitness, we also test the value of Q2.

Combined Effect of Factors Influencing Fintech Adoption

To achieve the final goal of Smart PLS, the Combination of variables on Fintech adoption was used. At this point, we consider all of the variables (Financial Literacy and Risk Tolerance) and how they interact to influence Fintech adoption. The total effect of the path coefficient with Beta =0.283, P 0.0001 is shown below.

Table 7.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
FL -> FinTech	0.282	0.289	0.064	4.347	0.0

Hypothesis Testing

According to the findings of this study, entrepreneurs' willingness to adopt Fintech is influenced by their level of financial literacy and risk tolerance. This study shows that as the level of financial literacy increases, so does the level of risk tolerance and the likelihood of adopting Fintech. Due to this finding that many entrepreneurs who try to avoid using Fintech products and services are those who lack sufficient financial knowledge, the study's goal has been achieved. As an entrepreneur, you're more likely to take risks, so your level of risk

tolerance is expected to affect your financial literacy, which affects your willingness to use Fintech.

Conclusion

The impact of financial literacy and financial risk tolerance on the adoption of Fintech by entrepreneurs are investigated and compared in this study, which looks at the impact of both. We employ both subjective and objective indicators of risk tolerance based on our unique data set. In our research, we found that financial risk tolerance has a more substantial impact on the adoption of Fintech than financial literacy, which indicates a correlation between a higher degree of financial literacy and a higher level of financial risk tolerance. We also suggest that financial literacy gives an additional explanation for the patience required to deal with financial risks. Fintech appears to be associated with different things based on the risk tolerance of the individual. Although financial literacy has an impact on and inspires entrepreneurs to adopt Fintech, financial risk tolerance is a mediating factor in this relationship. Financial technology (Fintech) is most commonly used by entrepreneurs who are financially savvy and have a high risk tolerance.

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