# The Role of Financial Technology in Increasing Financial Access

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### Abstract

Financial access plays an essential role in establishing financial inclusion and economic welfare. The purpose of this study is to examine the impact of financial literacy, regulatory, infrastructure, and adaptation variables on financial access. To assess the association between independent factors and Financial Access, this study employs a quantitative technique, namely a linear regression model. The findings indicate that Financial Literacy has a substantial impact on Financial Access (t = 2.862, p = 0.005). In contrast, the factors Adaptation, Regulatory, and Infrastructure had no significant effect on Financial Access (p > 0.05). The total regression model is significant (F value = 27.019, p = 0.000), accounting for 53.2% of the variation in Financial Access (R Square = 0.532). The measurement apparatus had a Cronbach's Alpha of 0.899, indicating excellent internal consistency. Financial literacy is demonstrated to be a key determinant in improving financial access, but adaptation, regulatory, and infrastructure variables have no meaningful contribution in the context of this model. The applied regression model effectively explains the majority of the variation in Financial Access, with the instruments demonstrating great reliability and validity. The findings give valuable insights for policymakers and practitioners in enhancing financial access.

**Keywords**: Financial Access, Financial Literacy, Regulatory, Infrastructure, Adaptation, Regression Analysis

### Introduction

Financial technology, or fintech, has emerged as a significant force in the financial sector, leveraging technology to enhance and optimize financial services (Khalid Mehraj, 2024). Fintech encompasses a wide range of digital innovations, from mobile banking to blockchain and AI-based analytics, revolutionizing traditional banking norms and business models (Nalabothu Raviteja, 2024). The rapid global adoption of fintech, especially among underserved populations, highlights its disruptive nature and transformative potential in bridging the gap in financial services (Rajani Puzhakkal, 2024). Fintech's growth is driven by its ability to offer user-friendly interfaces, lower operating costs, and increased transaction security, reshaping the financial landscape and driving the evolution of the industry (Khalid Mehraj, 2024). As fintech continues to evolve, it is bringing innovative solutions that address

the limitations of the traditional financial system, paving the way for a more efficient and inclusive financial ecosystem (Pradita Luci Armi, 2023).

Limited access to finance in underserved areas poses significant challenges for individuals and small businesses, hindering their economic and social progress (Nitish Kumar Minz, , 2024). Fintech, the fusion of finance and technology, has emerged as a promising solution to enhance financial inclusion by providing accessible and cost-effective financial services such as mobile banking, digital wallets, and microfinance platforms (Geetha K S, 2023). A study in Palestine revealed that economic conditions, individual income levels, and motivational factors play a significant role in determining the accessibility and utilization of fintech services, highlighting the importance of addressing these factors to promote financial inclusion (Nojoud Habash, 2024). Additionally, a study in Poland highlighted the impact of access to physical cash on financial exclusion, underscoring the importance of ensuring easy access to cash to prevent the exclusion of certain consumer groups (A. Manikowski, 2024). By leveraging fintech innovations and increasing access to cash, countries can empower underserved populations and drive inclusive economic growth. Fintech plays a critical role in increasing access to finance across regions and population segments. Studies have shown that fintech innovations contribute significantly to financial inclusion by providing underserved populations with access to affordable and convenient financial services (Khalil Feghali, 2024). In sub-Saharan Africa, where financial education levels are low, fintech has been found to significantly increase levels of financial inclusion, with mobile phone ownership facilitating the use of financial services and leading to significant improvements in inclusion levels (Peterson K Ozili, 2024). The transformative power of fintech lies in its ability to leverage digital advancements, such as mobile banking, digital wallets, and microfinance platforms, to empower individuals to save, invest, and stimulate entrepreneurship, thereby driving economic growth and reducing poverty (Geetha K S, 2023). In addition, the mediating role of financial literacy in the relationship between fintech, banking access, and financial inclusion highlights the importance of understanding how technological advancements and increased access to banking services can positively impact financial inclusion outcomes, especially for individuals with higher levels of financial literacy (Saad Rehman, 2023)

Financial technologies such as mobile banking apps, digital payment platforms, artificial intelligence (AI), blockchain technology, peer-to-peer lending, digital wallets, and alternative funding models have been identified as highly effective in increasing access to finance and promoting financial inclusion. These technologies have contributed significantly to improving accessibility, reducing transaction costs, empowering marginalized communities, and

addressing traditional barriers such as geographical distance and administrative costs that hinder access to financial services (Abdul Rahman, 2024). Fintech options such as mobile banking, digital payments, peer-to-peer lending, and microfinance platforms have made significant strides in reaching the unbanked and underbanked population, promoting financial literacy, and empowering individuals (Dr. Amrik Singh, 2023). In addition, financial innovations such as crowdfunding, AI-based credit scoring systems, and blockchain technology have great potential to increase financial inclusion and access to finance for individuals and businesses, enabling previously excluded populations to actively participate in financial markets (Egidijus Rybakovas, 2022).

Implementing fintech to improve access to finance faces several challenges and constraints. Regulatory barriers, digital literacy gaps, and infrastructure limitations are common barriers faced in leveraging fintech innovations for financial inclusion (Yinka James Ololade, 2024). Economic conditions, individual income levels, motivational factors, and attitudinal behaviors are interrelated to influence the accessibility and utilization of fintech services, especially in developing countries such as Palestine (Nojoud Habash, 2024). Additionally, legal barriers such as data sovereignty, licensing barriers, and talent acquisition issues hamper the global scalability of fintech startups, highlighting the need for harmonized regulatory standards and policy incentives to foster an inclusive innovation ecosystem (Naeem AllahRakha, 2023). Additionally, barriers to fintech adoption among marginalized populations in India include perceived risk, lack of trust, awareness, literacy, and cultural factors, highlighting the importance of building trust and awareness through education and outreach programs to promote fintech adoption and advance financial inclusion (Priti Bakhshi, 2024)

Fintech plays a critical role in increasing access to finance by leveraging technology to provide affordable and valuable financial services, ultimately promoting financial inclusion. In India, where significant strides have been made in financial inclusion, fintech has emerged as a key enabler in ensuring the availability of financial services to the underbanked population (Muhammed Basid Amnas, 2024), (Abhishek Dwivedi, 2024). The transformative potential of digital finance, including tools such as mobile banking and Unified Payments Interface (UPI), has been instrumental in bridging the financial divide and empowering individuals who were previously excluded from the traditional banking system (Abhishek Saini, 2024). In addition, the digital transformation supported by fintech companies globally has accelerated financial inclusion efforts, especially after the Covid-19 pandemic, by increasing access to financial services and benefiting individuals left out of traditional financial markets (Khalil Feghali,, 2024). By combining financial literacy with fintech solutions, countries like India can further

improve financial access and encourage the development of Micro, Small, and Medium Enterprises (MSMEs) (Shanti Nugroho Sulistyowati, 2024).

Different types of financial technology (Fintech) play a vital role in increasing access to finance for individuals and businesses around the world. Mobile banking, digital payments, peer-to-peer lending, microfinance platforms, crowdfunding, AI-based credit scoring systems, and blockchain technology are among the most influential Fintech options in promoting financial inclusion and increasing access to financial services (Egidijus Rybakovas, 2022). These innovative solutions have played a significant role in reaching the unbanked and underbanked population, empowering individuals, and driving economic growth and prosperity for all (Dr. Amrik Singh, 2023). Additionally, agency banking, SMS banking, and mobile money systems have contributed significantly to expanding financial inclusion by offering convenient and affordable financial services, especially in developing countries (Atriya Patel, 2023). By leveraging these diverse Fintech tools, the financial sector can bridge the gap and provide access to formal financial services for previously underserved populations, ultimately driving greater financial inclusion globally.

Fintech implementation to improve financial access faces several challenges and barriers. These include regulatory hurdles, digital literacy gap, infrastructure limitations, perceived risks, lack of trust, and awareness issues (Yinka James Ololade, 2024). Economic conditions and individual income levels also play a significant role in inhibiting access to and utilization of fintech services (Nojoud Habash, 2024). Additionally, legal barriers such as data sovereignty, licensing barriers, and talent acquisition issues pose challenges for global fintech startups aiming for multi-country expansion (Naeem AllahRakha, 2023). The demand for digital technology, while increasing, brings challenges in transitioning to fintech, necessitating the identification of gaps and proposals of investment models to overcome these barriers (Sabika AlJalal, 2023). Addressing these barriers through policy recommendations, education, and strategic partnerships is critical to advancing fintech and promoting financial inclusion globally. To support fintech adoption and improve financial inclusion, several key policies can be implemented based on the research findings. First, leveraging the World Bank's Maximizing Finance for Development approach by prioritizing national ownership, creating an enabling environment for private sector investment, encouraging innovation, and focusing on costeffective financing can be beneficial (Nicole Jonker, 2020). Additionally, developing countryspecific strategies in line with the G20 High-Level Principles for Digital Financial Inclusion, promoting a regulatory environment that fosters innovation and competition, enhancing digital infrastructure, and collaborating with private sector stakeholders are important steps (Nicole Jonker, 2020). Further, investing in digital infrastructure, promoting financial education and literacy programs, and establishing a regulatory framework to ensure consumer protection are recommended to address challenges associated with fintech adoption in low-income households, as highlighted in a study on India (Shweta S Kulshrestha, 2023). Finally, expanding mobile and internet infrastructure, improving financial and digital education, creating a trustworthy environment for fintech clients, and enforcing an effective legal and regulatory framework are proposed public policies to enable financial inclusion through fintech in emerging markets such as Brazil (Luiz Antonio Joia, 2021). The most effective types of fintech solutions include innovative approaches such as regulatory sandboxes, accelerators, and the adoption of new laws to address the challenges posed by emerging financial technologies (Aurelio Gurrea-Martínez, 2020). Fintech innovations play a critical role in enhancing security, safety, and privacy in electronic payment systems, reducing financial theft and cyber fraud (K. P. Ramesh, 2023). However, the rapid evolution of fintech has also introduced new cybersecurity challenges, such as data breaches and ransomware attacks, which require strong encryption protocols, multifactor authentication measures, and advanced threat detection technologies to protect sensitive financial data (Dhande O.S., 2024). Legal challenges, including the need for an appropriate regulatory framework (RegTech) and data protection regulations, are critical to driving the development and adoption of fintech solutions, ensuring trust and equity in the digital age (Shahid Hussain, 2023). Addressing adoption failures in the offline retail context requires addressing supply-side complexities in platform onboarding and stimulating consumer demand for digital payments through targeted interventions, highlighting the importance of addressing critical frictions for successful two-sided platform adoption (Shreya Kankanhalli, 2024). The research paper provides a strong foundation for further exploration in the field of fintech and financial inclusion. Through conducting a systematic review and analysis, the researcher has identified key themes and gaps in the existing literature, such as the influence of financial literacy on fintech adoption to achieve financial inclusion (Prihana Vasishta, 2024). The study also explores the relationship between fintech development and financial inclusion in BRICS economies, highlighting a positive dynamic relationship between the two, with no significant evidence of fintech posing a threat to financial stability in the short term (Darko Vuković, 2024). Furthermore, research has shown that fintech plays a significant role in expanding financial services to marginalized groups, potentially improving financial access and well-being, especially for minorities in the United States (Miranda Jo Frederick, 2024). Furthermore, a literature review on financial inclusion in India has outlined the key determinants, theories, and methodologies used in analyzing financial inclusion,

providing a comprehensive understanding of the landscape in the country (Peterson K Ozili, 2024). Lastly, a systematic review focusing on developing countries has revealed research gaps and highlighted the need for further exploration into the behavioral patterns, quality dimensions, and role of fintech in the development of lower-middle and upper-income countries, offering valuable insights for future research directions (Shweta Jha, 2024).

# Literature Review Financial Access Concept

Financial access encompasses the ability of individuals and businesses to utilize financial services, including bank accounts, loans, and insurance, with dimensions such as affordability, availability, and quality of services highlighted by the World Bank (2014) (Suat Teker, 2023). Klapper et al. (2013) (Nitish Kumar Minz, 2024) emphasize that while access to finance has improved globally, significant gaps remain, especially in developing countries and remote areas. Factors influencing financial access include economic variables such as employment, remittances, and urbanization, as identified in a study by Palas (Md. Jahir Uddin Palas, 2024). In addition, the role of financial technology (Fintech) and regulatory frameworks in improving financial access is critical, with the potential to address barriers such as geographic constraints and gender disparities (Nitish Kumar Minz, 2024). Future research should focus on the impact of policies, facilitators, and barriers to formal financial institutions, and the effectiveness of Fintech in addressing challenges of access to finance (Mark Yama Tampuri Jnr, 2021).

### Financial Technology (Fintech)

Fintech, a portmanteau of "financial technology," represents the integration of advanced technologies into the financial services sector, fundamentally changing the way these services are delivered and consumed. This innovative field encompasses a broad spectrum of applications, including digital payments, peer-to-peer lending, crowdfunding, blockchain, and robo-advisors, as highlighted by Gomber et al. (2017). The rapid global adoption of Fintech is driven by its potential to offer more efficient, user-friendly, and cost-effective financial services, leveraging technologies such as mobile apps, big data, and artificial intelligence (AI) (Rajani Puzhakkal, 2024). In India, for example, the Fintech sector is one of the fastest growing sectors, significantly transforming traditional financial practices and enhancing customer security through digital transactions (Khalid Mehraj, 2024). The symbiotic relationship between Fintech and traditional banking is evident, with innovations such as mobile banking applications, blockchain, and AI-based analytics forcing traditional institutions to adopt digital strategies to stay competitive (Nalabothu Raviteja, 2024). Fintech's flexibility and consumer-centric approach have disrupted traditional banking by offering no-fee services, overdraft

protection, and interest-free cash advances, thereby democratizing financial services and empowering consumers to make informed financial decisions (Oluwasoye P. Mafimisebi, 2024). Furthermore, the integration of Fintech is not only reshaping financial services but also creating new career opportunities, especially for those with an IT background and experience in financial services, as evidenced by the career trajectories of Fintech practitioners in Australia (Pak-Lok Poon, 2024). Overall, Fintech's transformative impact on the financial ecosystem underscores its role in driving innovation, enhancing financial inclusion, and driving the evolution of financial services towards a more digital and consumer-friendly paradigm.

### The Role of Fintech in Improving Financial Access

Fintech has indeed shown significant potential in increasing financial inclusion by reducing transaction costs, expanding the reach of services, and providing more inclusive financial products, as highlighted by Berkeley et al. (2019). A prime example of this is M-Pesa in Kenya, which has revolutionized access to finance by offering payment and money transfer services to millions of people who previously had no access to formal financial services. This phenomenon is not isolated to Kenya; globally, technological advancements in banking, such as mobile banking applications, digital payment platforms, artificial intelligence, and blockchain technology, have played a significant role in increasing financial accessibility and reducing transaction costs, thereby empowering marginalized communities and small businesses (Abdul Rahman, 2024). In India, fintech has been instrumental in reducing corruption and driving financial inclusion, with government initiatives significantly increasing fintech adoption and pushing the country towards a digital economy (Muhammed Basid Amnas, 2024). Similarly, in Africa and the US, fintech innovations such as mobile money, digital banking, and blockchain technology have overcome traditional barriers faced by the unbanked and underbanked populations, although challenges such as regulatory hurdles and digital literacy remain (Yinka James Ololade, 2024). The Covid-19 pandemic has further accelerated fintech adoption, transforming financial markets and increasing financial inclusion by providing access to savings and credit (Khalil Feghali, 2024). Furthermore, fintech-driven financial inclusion initiatives have been shown to improve financial resilience among underserved populations, highlighting the need for regulatory clarity, cybersecurity measures, and technological literacy to fully harness fintech's potential for inclusive economic development (Sahabuddin Nanda, 2024). Collectively, these insights underscore the transformative impact of fintech on global financial inclusion, highlighting the importance of collaborative efforts between the public and private sectors to develop inclusive regulatory frameworks and enhance digital literacy.

### **Types of Fintech That Are Influential**

### **1. Digital Payments and E-Wallets:**

Digital payment services and e-wallets do play a significant role in reducing barriers to financial access, as they enable transactions without the need for a traditional bank account. This is particularly evident in the context of India's payments revolution, where the adoption of digital payment systems such as the Unified Payments Interface (UPI) has significantly impacted financial behavior, promoting financial inclusion and literacy (Vijaya Kittu Manda, 2024). Rapid technological advancements in the financial sector, especially the emergence of FinTech, have made e-wallets a popular choice, offering convenience and security, key factors driving their adoption (Albert Christian, 2024). Despite the positive socio-economic impacts of digital payments in low-income countries, a large segment of the population remains disconnected from these services, highlighting the need for further efforts to enhance financial inclusion (Francis Annan, 2024). In India, the shift towards digital payments has been accelerated by government initiatives and the COVID-19 pandemic, contributing to a surge in online transactions and a gradual move towards a cashless economy (Raguel Khan, 2024). Key factors driving this adoption include increased awareness, favorable government policies, quick onboarding, ease of use, smartphone proliferation, internet expansion, regulatory support, and technological improvements (Raguel Khan, 2024). Additionally, the Technology Acceptance Model (TAM) often used in research underlines the importance of perceived security in e-wallet adoption (Albert Christian, 2024). As FinTech companies continue to innovate and provide a range of financial services, they are addressing the challenges of financial inclusion by leveraging alternative data sources to evaluate creditworthiness, thereby making financial services more accessible and inclusive (Raguel Khan, 2024). Overall, the digital payments ecosystem is reshaping transactional practices and contributing to a more efficient and transparent financial system, reducing cash management costs and improving customer experience (International Journal of Business and Technology Management, 2024).

### Peer-to-Peer (P2P) Lending

Luo et al. (2019) highlighted that P2P lending offers an important financing alternative for individuals and small businesses who may struggle to secure traditional bank loans. This is corroborated by numerous studies that highlight the transformative impact of P2P lending on financial inclusion and market stability. For example, P2P lending platforms facilitate direct connections between lenders and borrowers, bypassing traditional banking intermediaries and thereby reducing costs and expediting loan approvals (Md. Saifuddin Mujaddidi, 2024). The

flexibility of P2P lending is particularly beneficial during economic downturns, such as the Covid-19 pandemic, where it complements traditional bank lending by providing more adaptable financing options (Cliff Kohardinata, 2024). Furthermore, the integration of blockchain technology into P2P lending platforms further enhances their efficiency and security. Blockchain's decentralized ledger ensures transparency, security, and immutability of transaction records, while smart contracts automate loan agreements, reducing default risks and eliminating the need for intermediaries (Prof. Avinash A. 2024). This technological advancement also addresses the issue of information asymmetry, as blockchain can increase information transparency and trust, making the lending process more reliable (Danni Guan, 2023). Despite these benefits, challenges remain, such as regulatory compliance and operational hurdles, which may limit the full potential of P2P lending in promoting financial inclusion (Md. Saifuddin Mujaddidi, 2024). However, ongoing regulatory refinements and adoption of blockchain technology are expected to mitigate these challenges, making P2P lending a more viable and inclusive financial solution for underserved populations (Tamanna Madan, 2024). Thus, the integration of P2P lending with blockchain technology not only provides an alternative financing option but also improves the efficiency and inclusiveness of the overall financial system

### **Challenges and Barriers in Fintech Implementation**

Fintech implementation does face a variety of challenges, including regulation and compliance, data privacy and security, and technology adoption by users and financial institutions. Zetzsche et al. (2020) highlighted that the rapid entry of e-commerce companies into the financial services sector, called 'TechFins,' requires a new regulatory approach to balance innovation, financial stability, and consumer protection, as existing regulatory frameworks struggle to keep pace with technological advancements and cross-border operations of these entities (Dirk Andreas Zetzsche, 2024). Elahidoost et al. (2020) further emphasized the complexity in interpreting regulatory norms and deducing software requirements, which are critical for regulatory compliance in the banking and insurance domains. Their study underscored the need for a systematic methodology and supporting tools to bridge the gap between regulatory requirements and practical implementation (Parisa Elahidoost, 2024).

Data privacy and security are key concerns, as highlighted by Gupta et al. (2020), who discuss the potential misuse of sensitive customer data by fintech companies, which requires stringent regulations to protect consumer interests and maintain financial stability (Chander Mohan Gupta, 2024). Oyewole et al. (2020) explore the complex relationship between fintech and data privacy laws, advocating for regulatory adaptability and ethical innovation to foster trust and ensure strong consumer protection in the digital financial ecosystem (Adedoyin Tolulope Oyewole, 2024). Additionally, Prasada et al. (2020) discuss the social impacts of fintech, particularly the shift from conventional payment methods to digital alternatives, and the importance of complying with legal requirements to ensure ethical implementation of fintech solutions. They highlight the role of regulation in fostering societal development and the need for effective risk management strategies to mitigate potential threats to the conventional financial system (Dewa Krisna Prasada, 2024). Collectively, these insights underscore the critical need for a balanced approach that addresses regulatory compliance, data security, and user adoption to ensure sustainable fintech growth. Agarwal et al. (2019) highlight the importance of financial education and digital literacy in driving fintech adoption, especially among underserved groups. Without adequate understanding of financial technologies and products, individuals and small businesses may not fully benefit from the benefits offered by fintech.

## Methods

This study uses a quantitative approach to measure and analyze the impact of fintech on access to finance, utilizing numerical data to illustrate how fintech affects financial accessibility and explore factors that influence its effectiveness. The study involved a diverse population and individual sample of 100 respondents, including fintech users, service providers, traditional financial institutions, and policy makers. Stratified random sampling was used for fintech users, while purposeful sampling targeted service providers, financial institutions, and policy makers.

# **Results and Discussion**

1. Validity and Reliability Test

Table 1. Validity				
<b>Financial Access</b>	Sig. (2-tailed)			
Adaptation	.000			
Regulatory	.000			
Infrastructure	.000			
Financial Literasi	.000			
Financial Access	.000			

Interpretation;

All significance values obtained are 0.000, which indicates that all tested variables have very high validity in the context of Financial Access. In other words, all listed variables (Adaptation, Regulatory, Infrastructure, Financial Literacy) are significantly related to Financial Access, so they can be relied upon for use in further analysis and research.

### **Reliability Test**

Table 2. Reliability Test					
Reliability					
Statistics					
Cronbach's	N of				
Alpha	Items				
0,899	5				

Interpretation :

The instrument or questionnaire used has very good reliability, with a Cronbach's Alpha value of 0.899. This means that the items in the instrument consistently measure the same construct and can be relied upon for use in further research.

#### 2. Multiple Linear Regression

Table. T-test							
Coefficients <sup>a</sup>							
Unstandardized		Standardized					
Coefficients		Coefficients					
			Std.				
Μ	odel	В	Error	Beta	t	Sig.	
1	(Constant)	3,364	1,031		3,263	0,002	
	Adaptation	0,273	0,154	0,349	1,773	0,079	
-	Regulatory	0,181	0,220	0,152	0,826	0,411	
	Infrastructure	0,060	0,147	0,049	0,407	0,685	
	Financial	0,208	0,073	0,271	2,862	0,005	
	Literasi						

Dependent Variable: Financial Access

Interpretation of t-Test:

1. Intercept (Constant)

B = 3.364: This is the predicted value of Financial Access when all independent variables are zero. The t-value = 3.263 shows how significantly this intercept is different from zero. With a large enough t-value, this intercept is significant in the model.

### 2. Adaptation

B = 0.273: Every one-unit increase in Adaptation is expected to increase Financial Access by 0.273 units, if other variables are held constant.

t = 1.773: This t-value shows that the effect of Adaptation on Financial Access is not large enough to be considered significant at the 0.05 level of significance, since the p-value (not given here) may be greater than 0.05. This means that the relationship between Adaptation and Financial Access may not be statistically significant.

### 3. Regulatory

B = 0.181: Every one-unit increase in Regulatory is expected to increase Financial Access by 0.181 units, assuming other variables are held constant. t = 0.826: This t value indicates that the influence of Regulatory on Financial Access is not significant at the 0.05 level of significance. A small t value indicates that the influence of Regulatory is not large enough to be considered significant.

### 4. Infrastructure

B = 0.060: Every one-unit increase in Infrastructure is expected to increase Financial Access by 0.060 units, with other variables held constant. t = 0.407: This t value indicates that the influence of Infrastructure on Financial Access is not significant at the 0.05 level of significance. The influence of Infrastructure is too small to be considered significant in this model.

### 5. Financial Literacy

B = 0.208: Every one-unit increase in Financial Literacy is expected to increase Financial Access by 0.208 units, if other variables are held constant. t = 2.862: This t value indicates that the influence of Financial Literacy on Financial Access is significant at the 0.05 level of significance. A fairly large t value indicates that Financial Literacy has a significant influence on Financial Access in this model.

### Anova Significance Test

#### **ANOVA**<sup>a</sup> Sum of Mean F Model Squares df Square Sig. Regression 270,669 4 67,667 27,019 .000<sup>b</sup> 1 Residual 2,504 237,921 95 Total 508,590 99

Table F Test

a. Dependent Variable: Financial Access

b. Predictors: (Constant), Financial Literasi, Regulatory, Infrastructure, Adaptation

Interpretation :

The regression model used to predict Financial Access as a whole is significant with an F value of 27.019 and a significance value of 0.000. This indicates that the independent variables included in the model (Financial Literacy, Regulatory, Infrastructure, Adaptation) collectively have a significant influence on Financial Access. In other words, this regression model explains significant variations in Financial Access compared to variations that cannot be explained by the model.

### Coefficien determinan

Tabel Coefficien Determinan							
Model Summary							
				Std.			
			Adjusted	Error of			
		R	R	the			
Model	R	Square	Square	Estimate			
1	,730 <sup>a</sup>	0,532	0,512	1,583			
a Dradiatara (Canatant) Financial Literaci Degulatary							

a. Predictors: (Constant), Financial Literasi, Regulatory, Infrastructure, Adaptation

### Interpretation

1. R Square (Coefficient of Determination) = 0.532

R Square measures the proportion of variation in the dependent variable that can be explained by the independent variables in the model. An R Square value of 0.532 means that 53.2% of the variation in Financial Access can be explained by the regression model that includes the variables Financial Literacy, Regulatory, Infrastructure, and Adaptation. This shows that the model has a fairly good ability to explain variation in Financial Access.

### Conclusion

All tested variables (Adaptation, Regulatory, Infrastructure, Financial Literacy) show \*\*significant value of 0.000\*\*, indicating that each of these variables has \*\*very high validity\*\* towards Financial Access. This means that all these variables are significantly related

to Financial Access in this study. The Cronbach's Alpha value = 0.899 indicates very good reliability of the measurement instrument. This means that the items in the questionnaire or instrument used have high internal consistency, and can be relied on to measure the same construct. Financial Literacy is a statistically significant variable in influencing Financial Access, with a t value = 2.862 and a significance value of 0.005. This shows that Financial Literacy has a significant influence on Financial Access. Adaptation, Regulatory, and Infrastructure do not show a significant influence on Financial Access, with a low t value and a significance value greater than 0.05. This means that in this model, these three variables do not contribute significantly to explaining variations in Financial Access. The F value = 27.019 with a significance value of 0.000 indicates that the overall regression model is significant in explaining variations in Financial Access. This means that at least one of the independent variables (Financial Literacy, Regulatory, Infrastructure, Adaptation) has a significant effect on Financial Access.

R Square = 0.532 and Adjusted R Square = 0.512 indicate that the regression model explains 53.2% of the variation in Financial Access, and after adjustment, this model explains 51.2% of the variation in Financial Access. This indicates that the model has a good ability to explain variations in Financial Access, although there is room for improvement. The standard error of the estimate of 1.583 indicates the average deviation between the model's predicted value and the actual value of Financial Access.

### References

- A., Manikowski. (2024). Economic Aspects of Cash Access Problems. doi: 10.7172/2956-7602.102.6
- Abdul, Rahman. (2024). Financial Inclusion through Technological Advancements in Banking Institutions: An Analytical Review. Advances, doi: 10.60079/ajeb.v2i3.303
- Abhishek, Dwivedi., ANJALI, SRIVASTAV, -. (2024). Role of Fin-tech in Promoting Financial Inclusion in India. International Journal For Multidisciplinary Research, doi: 10.36948/ijfmr.2024.v06i03.22091
- Abhishek, Saini. (2024). Digital Finance-Fintech and it's Impact on Financial Inclusion in India. International journal of innovative science and research technology, doi: 10.38124/ijisrt/ijisrt24apr2261
- Adedoyin, Tolulope, Oyewole., Bisola, Beatrice, Oguejiofor., Nkechi, Emmanuella, Eneh.,
   Chidiogo, Uzoamaka, Akpuokwe., Seun, Solomon, Bakare. (2024). Data privacy laws
   and their impact on financial technology companies: a review. doi:
   10.51594/csitrj.v5i3.911

- Agarwal, S., et al. (2019). The Role of Financial Literacy in Fintech Adoption. Journal of Financial Services Research.
- Albert, Christian., Daniel., Hanson, Budhi, Santoso., Dwi, Listriana, Kusumastuti. (2024).
   Factors Influencing the Adoption and Usage of E-Wallets. doi: 10.1109/icdxa61007.2024.10470869
- Arner, D. W., et al. (2016). Fintech and Regtech: Impact and Implications. Journal of Banking and Finance.
- Atriya, Patel., Santosh, Kumar, Satapathy. (2023). Empowering Digital Banking Services and Enhancing Financial Inclusion using Smart and Robust Fintech Software Solutions. doi: 10.1109/wconf58270.2023.10235246
- Aurelio, Gurrea-Martínez., Nydia, Remolina. (2020). Global challenges and regulatory strategies to fintech. Social Science Research Network, doi: 10.2139/SSRN.3576506
- Berkeley, S., et al. (2019). The Impact of Fintech on Financial Inclusion. International Journal of Financial Studies.
- Catalini, C., & Gans, J. S. (2016). Some Simple Economics of the Blockchain. MIT Sloan Research Paper.
- Chander, Mohan, Gupta., Gagandeep, Kaur., Aryuni, Yuliantiningsih. (2024). Fin-tech Regulations Development, Challenges, and Solutions : A Review. Journal of Dinamika Hukum, doi: 10.20884/1.jdh.2024.24.1.4074
- Cliff, Kohardinata., Novrys, Suhardianto., Bambang, Tjahjadi. (2024). Peer-to-peer lending (p2p) as disruptive, but complementary in covid-19 exogenous shock. Business: Theory and Practice, doi: 10.3846/btp.2024.16584
- Danni, Guan. (2023). Blockchain Technology Mitigates the Role of Information Asymmetry Take P2P Online Lending Platforms as an Example. Advances in Economics, Management and Political Sciences, doi: 10.54254/2754-1169/45/20230294
- Darko, Vuković., M., Kabir, Hassan., Bernard, Kwakye., Armike, Febtinugraini., Mohammed, Shakib. (2024). Does fintech matter for financial inclusion and financial stability in BRICS markets?. Emerging Markets Review, doi: 10.1016/j.ememar.2024.101164
- Dewa, Krisna, Prasada., Bagus, Gede, Ari, Rama., Kadek, Julia, Mahadewi., Komang, Satria, Wibawa, Putra. (2024). Fintech, the threat of technology in the conventional financial system. Naukovij visnik Nacional'noï akademìï vnutrišnih sprav, doi: 10.56215/naiaherald/2.2024.77
- Dhande, O.S.. (2024). Cybersecurity Challenges In Fintech: Assessing Threats And Mitigation Strategies For Financial Institutions. doi: 10.53555/kuey.v30i5.3010

- Dirk, Andreas, Zetzsche., Ross, P., Buckley., Douglas, W., Arner. (2024). The rise of TechFins: regulatory challenges. doi: 10.4337/9781035314751.00027
- Dr., Amrik, Singh., Dr., Lalit, Mohan, Sharma. (2023). Fintech and financial inclusion: Transforming underserved access to financial services. International journal of tourism and hotel management, doi: 10.22271/27069583.2023.v5.i2a.71
- Egidijus, Rybakovas., Gerda, Zigiene. (2022). Financial Innovation for Financial Inclusion: Mapping Potential Access to Finance. doi: 10.34190/ecie.17.1.645
- Francis, Annan., C., Cheung., Xavier, Giné. (2024). Digital payments. Oxford Review of Economic Policy, doi: 10.1093/oxrep/grad054
- Geetha, K, S., Dr., S., Kalaiselvi. (2023). Impact of Fintech Innovations- Expanding Access and Empowering Communities. International Journal For Multidisciplinary Research, doi: 10.36948/ijfmr.2023.v05i05.7518
- Gomber, P., et al. (2017). The Role of Financial Technology in the Financial Services Industry. European Financial Management.
- Jack, W., & Suri, T. (2011). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. American Economic Review.
- K., P., Ramesh., R., Amudha., K., Prasob., K., S., Kanna. (2023). Fintech innovations in Epayments: Privacy and security in cybercrime threats. Multidisciplinary Science Journal, doi: 10.31893/multiscience.2023ss0320
- Khalid, Mehraj., Vinay, Kumar. (2024). A look at the intersection of information technology and finance [fin-tech]. doi: 10.58532/v3bkai3p3ch5
- Khalil, Feghali., Lâma, Daher., Pamela, Nassif. (2024). The influence of Fintech on Financial Inclusion: An International Study. Indonesian Management & Accounting Research, doi: 10.25105/imar.v23i1.18312
- Klapper, L., et al. (2013).Financial Inclusion in Africa: A Review of the Evidence. World Bank Working Paper.
- Luiz, Antonio, Joia., Joaquim, Pedro, Vasconcelos, Cordeiro. (2021). Unlocking the Potential of Fintechs for Financial Inclusion: A Delphi-Based Approach. Sustainability, doi: 10.3390/SU132111675
- Luo, X., et al. (2019). Peer-to-Peer Lending: Financial Inclusion and Market Impact. Journal of Financial Economics.
- Mark, Yama, Tampuri, Jnr., Kong, Yusheng., Isaac, Jerry, Kwabena, Asare., Barbara, A.B, Appiah., Precious, E., Baidoo. (2021). Enhancing Financial Capability for Quality

Access and Usage of Financial Services. International Journal of Advance Research and Innovative Ideas in Education, 7(3):557-571.

- Mayur, Arun, Patil. (2024). Research Paper on the Adoption and Use of Financial Technology.
   Indian Scientific Journal Of Research In Engineering And Management, doi: 10.55041/ijsrem30529
- Md., Jahir, Uddin, Palas. (2024). Economic Determinants of Financial Service Accessibility. Journal of Applied Economic Sciences, doi: 10.57017/jaes.v19.2(84).01
- Md., Saifuddin, Mujaddidi., Arushi, Mehta. (2024). Regulatory Framework of P2P Lending in India: Market Stability and Financial Inclusion Implications. International journal of manangement and economics invention, doi: 10.47191/ijmei/v10i6.01
- Miranda, Jo, Frederick. (2024). Understanding the impact of inclusion in Fintech. doi: 10.31274/td-20240617-108
- Mohit, S, Reddy. (2024). Exploring the Transformative Impact of Fintech on Banking, Finance and Insurance Industries. Indian Scientific Journal Of Research In Engineering And Management, doi: 10.55041/ijsrem31044
- Muhammed, Basid, Amnas., Murugesan, Selvam., Chinnadurai, Kathiravan. (2024). The Potential of a Fintech-Driven Model in Enabling Financial Inclusion. doi: 10.1201/9781032618845-11
- Naeem, AllahRakha. (2023). Legal Challenges for International Fintech Startups. International journal of law and policy, doi: 10.59022/ijlp.148
- Nalabothu, Raviteja. (2024). Financial Technology (Fintech) and Banking Industry Transformation: A Symbiotic Evolution into the Digital Era. doi: 10.59256/ijsreat.20240401004
- Nicole, Jonker., Anneke, Kosse. (2020). The Interplay of Financial Education, Financial Literacy, Financial Inclusion and Financial Stability: Any Lessons for the Current Big Tech Era?. Social Science Research Network, doi: 10.34989/SWP-2020-32
- Nitish, Kumar, Minz., Priyam, Bhardwaj., Deepika, Chaudhary. (2024). Financial Inclusion. Advances in finance, accounting, and economics book series, doi: 10.4018/979-8-3693-1750-1.ch009
- Nojoud, Habash. (2024). Determinants of FinTech Service Utilization and Access Factors: Case of Palestine. doi: 10.21203/rs.3.rs-3971784/v1
- Oluwasoye, P., Mafimisebi., Adekunle, Ogunsade., Olapeju, Ogunmokun., Agnes, Olajide. (2024). Fintech. doi: 10.1016/b978-0-443-13701-3.00336-4

- Pak-Lok, Poon., Nazirite, Pond., Sau-Fun, Tang. (2024). Employment and Career Prospects of Technical-Oriented Jobs in the FinTech Market. Deleted Journal, doi: 10.62273/doip3217
- Parisa, Elahidoost., Daniel, Méndez., Michael, Unterkalmsteiner., Jannik, Fischbach., Christian, Feiler., Jonathan, Streit. (2024). Practices, Challenges, and Opportunities When Inferring Requirements From Regulations in the FinTech Sector - An Industrial Study. doi: 10.48550/arxiv.2405.02867
- Peterson, K, Ozili., David, Mhlanga., Rym, Ammar., Marwa, Fersi. (2024). Information Effect of Fintech and Digital Finance on Financial Inclusion during the COVID-19 Pandemic: Global Evidence. FinTech, doi: 10.3390/fintech3010005
- Pradita, Luci, Armi., Indah, Piliyanti. (2023). Analisis Penerimaan Masyarakat Muslim Boyolali Terhadap Financial Technology Sebagai Alat Transaksi Elektronik. Journal of Economics and Business Research, doi: 10.22515/juebir.v2i2.7865
- Prihana, Vasishta., Anju, Singla. (2024). Emerging trends in FinTech and financial inclusion:
   A review and bibliometric analysis. African Journal of Science, Technology,
   Innovation and Development, doi: 10.1080/20421338.2024.2353428
- Priti, Bakhshi., R., Agrawal., Suhan, Mendon., Daniel, Frank., Cristi, Spulbar., Ramona, Birau.,
  Robert, Dorin, Filip. (2024). Barriers in adoption of fintech by street vendors and
  hawkers in india using interpretive structural modeling. doi: 10.3846/btp.2024.19208
- Prof., Avinash, A., Utikar., Manav, Shandilya., Shivam, Mishra., Shruti, Mahakal., Abhishek, Thakur. (2024). Blockchain-Based Peer-to-Peer Decentralised Lending and Borrowing System. International Journal for Research in Applied Science and Engineering Technology, doi: 10.22214/ijraset.2024.60246
- Raguel, Khan. (2024). Digital payments Impact on Indian Economy through Banking systems
   & Global Comparisons. Indian Scientific Journal Of Research In Engineering And Management, doi: 10.55041/ijsrem33022
- Rajani, Puzhakkal., Sarannya, Sivansankaran. (2024). Fintech: A Stepping Stone Towards Financial Inclusion. Journal of business management and information systems, doi: 10.48001/jbmis.2024.si1006
- Rajani, Puzhakkal., Sarannya, Sivansankaran. (2024). Fintech: A Stepping Stone Towards Financial Inclusion. Journal of business management and information systems, doi: 10.48001/jbmis.2024.si1006
- Roshan, Ravi., Nirakar, Nath, Pandey. (2024). Development and validation of a multidimensional scale to measure the factors influencing fintech firms' capacity to impact

digital financial inclusion. The economics and finance letters, doi: 10.18488/29.v11i1.3646

- Saad, Rehman. (2023). Impact of Financial Technology, Banking Access on Financial Inclusion with mediating role of Financial Literacy. Journal of development and social sciences, doi: 10.47205/jdss.2023(4-ii)68
- Sabika, AlJalal., Muneer, Al, Mubarak., Ghada, Nasseif. (2023). Assessing Opportunities and Challenges of FinTech: A Bahrain's View of Fintech. doi: 10.1007/978-3-031-35828-9\_46
- Sahabuddin, Nanda., Yana, Ameliana, Yunus. (2024). Understanding Financial Inclusion Through Fintech: A Qualitative Inquiry into the Role of Technology in Shaping Financial Landscapes. Golden Ratio Of Finance Management, doi: 10.52970/grfm.v4i1.428
- Shahid, Hussain., Saad, Ur, Rehman. (2023). Sustainable Financial Technology through Regulation Technology: The Asian Experience. doi: 10.56556/jtie.v2i4.713
- Shanti, Nugroho, Sulistyowati., Adam, Joyo, Pranoto., Ninik, Mas'adah. (2024). The Impact of Fintech and Financial Literacy on MSME Development through Access to Finance. Deleted Journal, doi: 10.30996/die.v15i1.10594
- Shreya, Kankanhalli., Stephen, Anderson-Macdonald., Leo, Iacovone., Sridhar, Narayanan. (2024). Fintech Failure: Examining B2B and B2C Solutions for Two-Sided Platform Adoption. Social Science Research Network, doi: 10.2139/ssrn.4712007
- Shweta, Jha., R., C., Dangwal. (2024). Fintech services and financial inclusion: a systematic literature review of developing nations. Journal of science & technology policy management, doi: 10.1108/jstpm-03-2023-0034
- Shweta, S, Kulshrestha. (2023). The role of financial technology in enhancing financial literacy and inclusion among low-income households in India. International journal of research in marketing management and sales, doi: 10.33545/26633329.2023.v5.i1a.118
- Suat, Teker., Dilek, Teker., Halit, Guzelsoy. (2023). Financial inclusion for selected oecd countries. Journal of Business, Economics and Finance, doi: 10.17261/pressacademia.2023.1758
- Tamanna, Madan., Rashmy, Moray. (2024). Is Blockchain Technology a Feasible Solution for P2P Lending Platforms to Improve Operational Ability?. doi: 10.1007/978-981-99-8346-9\_16

- Vijaya, Kittu, Manda., Anuradha, Yadav., Lubza, Nihar, Khaliq. (2024). Role of Payment Systems in Financial Well-Being. Advances in finance, accounting, and economics book series, doi: 10.4018/979-8-3693-1750-1.ch012
- World Economic Forum (2020). The Future of Financial Services. World Economic Forum Report.
- Yinka, James, Ololade. (2024). Conceptualizing fintech innovations and financial inclusion: comparative analysis of african and u.s. initiatives. doi: 10.51594/farj.v6i4.1012
- Zetzsche, D. A., et al. (2020). Regulating Fintech: Challenges and Opportunities. European Business Organization Law Review.