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Exploring Fintech, financial literacy, and stock market participants nexus in Dar es Salaam Stock Exchange, Tanzania

Abraham Charles Nathanael[1]*, Magwana Ibrahim Ngollo[2]

[1]Department of Accounting and Finance, Tanzania Institute of Accountancy, P.O Box 526, Kigoma, Tanzania

[2]Department of Accountancy, College of Business Education Mbeya campus, P.O Box 3810, Mbeya, Tanzania

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***Corresponding author:**
charlesabraham39@gmail.com

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Abstract

This study investigates the relationship between the adoption of financial technology (Fintech), financial literacy, and participation in the stock market in Tanzania, employing a thorough analysis of primary data collected through an online self-reported survey. By implementing purposive sampling techniques, this research executed a series of diagnostic evaluations, encompassing tests for multicollinearity, normality, and heteroskedasticity, to substantiate the integrity of the regression model utilized. The results indicate that the utilization of fintech substantially enhances involvement in stock market activities, thereby corroborating the hypothesis that fintech acts as a facilitator for individual participation in trading activities. Furthermore, the study emphasizes the essential function of financial literacy, suggesting that elevated levels of financial knowledge are positively correlated with an increase in stock market participation. Notably, the effect of fintech on stock market engagement decreased from a coefficient of $\beta = 0.41$ to $\beta = 0.19$ upon accounting for financial literacy. However, the association persisted as statistically significant ($p = 0.002$), thereby demonstrating a condition of partial mediation. These findings highlight the fundamental significance of financial literacy as a crucial determinant in fostering active involvement in financial markets. In conclusion, this research provides insightful contributions to the understanding of the interrelations among fintech, financial literacy, and investment behaviors in Tanzania, presenting implications for the formulation of policies, enhancement of financial education, and improvement of market accessibility.

Introduction

Financial technology (Fintech) is revolutionizing financial services and enhancing access to markets, particularly in emerging economies (Koloseni & Mandari, 2024). Utilizing digital platforms and Artificial Intelligence (AI), fintech optimizes transactions, provides real-time investment insights, and improves financial literacy (Pratama et al., 2024). It democratizes access by connecting traditional banking with marginalized populations, facilitating stock market participation in countries like Tanzania. Fintech transforms investment methods, enabling efficient stock trading and informed decisions (Hikouatcha et al., 2024). However, challenges like digital illiteracy and cybersecurity threats hinder widespread adoption, highlighting the need for financial education and policy support (Hermawan et al., 2022).

In both developed and developing nations, fintech is instrumental in advancing financial literacy and accessibility, particularly concerning stock market engagement (Zaimovic et al., 2025). It

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provides investors with real-time data, automated trading, and educational resources, empowering informed investment decisions (Soekarni et al., 2024). In Indonesia, fintech adoption among MSMEs has improved financial literacy and sustainability (Mangawing et al., 2023). In Cameroon, frequent fintech use boosts financial competency (Hikouatcha et al., 2024), while in Tanzania, it narrows the financial inclusion gap via digital banking (Matari & Temba, 2025). Fintech's impact is vital for market participation and economic development (Hermawan et al., 2022).

However, in less economically advanced nations such as Tanzania, the implementation of fintech and the level of financial literacy among stock market participants encounter considerable obstacles (Matari & Temba, 2025). Many investors lack the knowledge necessary for informed decisions, leading to limited market participation and poor investment outcomes (Koloseni & Mandari, 2024). Compared to other emerging economies, Tanzania struggles with low fintech adoption and inadequate investor education, compounded by socio-economic factors (Abdinoor & Mbamba, 2017; Baruti et al., 2022; Hikouatcha et al., 2024). Despite these barriers, fintech could enhance financial literacy and inclusion through accessible educational tools (Zaimovic et al., 2025).

Tanzania, similar to other nations within Africa, concurrently encounters structural impediments that obstruct the integration of fintech within financial markets, including insufficient regulatory frameworks, limited financial infrastructure, and a pervasive lack of trust in digital financial services (Matari & Temba, 2025; Ololade, 2024). Political and economic instabilities further dissuade both domestic and international investors from engaging actively in the stock market, thereby diminishing market liquidity and growth prospects (Soekarni et al., 2024). Additionally, a considerable number of Tanzanians remain financially marginalized due to inadequate access to formal banking services and financial products that could facilitate engagement with the stock market (Epaphra & Kiwia, 2021). The prevailing low level of financial literacy further constrains their capacity to utilize fintech solutions for investment purposes effectively (Lotto, 2020). Consequently, the establishment of a meticulously structured fintech-driven financial education framework is essential to empower stock market participants, enhance investor confidence, and ultimately foster the sustainable advancement of the Dar es Salaam Stock Exchange (DSE).

All of these challenges necessitate further scholarly investigation, and there is an increasing interest among researchers, policymakers, and financial practitioners in comprehending how fintech can bolster financial literacy and stock market engagement in Tanzania. Studies in other regions reveal important insights. In Indonesia, Nurohman et al. (2021) found that fintech positively impacts financial inclusion and investor literacy. Cahyawati et al. (2023) showed that Fintech and financial literacy together promote inclusion and market engagement. Sasikirono et al. (2023) linked Fintech literacy to capital market involvement among youth. In Cameroon, Lontchi et al. (2023) demonstrated Fintech's role in improving financial decisions, with literacy acting as a mediator. These studies underscore the transformative potential of fintech in broadening financial knowledge and improving investor engagement within emerging markets.

However, a considerable research deficit persists in Tanzania concerning the nexus between fintech, financial literacy, and stock market engagement. Prior investigations within the country have predominantly analyzed these components as discrete entities rather than probing their interrelations (Epaphra & Kiwia, 2021; Fanta & Mutsonziwa, 2021; Koloseni & Mandari, 2024; Lotto, 2020). Scholarly attention has been primarily directed towards facets such as mobile banking, microfinance services, and overarching financial inclusion; however, insufficient emphasis has been placed on the capacity of fintech to enhance financial literacy and stimulate investor participation in stock markets (Epaphra & Kiwia, 2021). Consequently, this research endeavor seeks to address this lacuna by examining how fintech-enabled financial literacy initiatives may bolster stock market participation in Tanzania, thus promoting enhanced financial inclusion and economic development (FSD, 2024).

Thus, this research seeks to assess the relationship among fintech, financial awareness, and stock market engagement in Tanzania, highlighting the mediating function of financial literacy in the connection between fintech and stock market involvement. To accomplish this aim, the study poses three fundamental research inquiries. First, in what manner does fintech affect stock market participation in Tanzania? What role does fintech play in shaping financial literacy, and how significantly does financial literacy influence the link between fintech and engaging in the stock market? Third, what effect does financial literacy have on stock market participation in Tanzania? Addressing these inquiries will yield significant insights into how digital financial services can enhance investment behavior and expand financial inclusion within the country's economic landscape.

The originality of this investigation is manifested by the combination of Fintech, financial literacy, and stock market participation to assess how digital tools enhance financial understanding and investment in Tanzania. It addresses a critical gap by showing how Fintech can empower marginalized investors in economies with limited traditional financial access. The research aligns with current digitalization trends, offering a model for understanding investment behavior in emerging markets. Supported by recent studies on AI and technology in financial decision-making (Jia et al., 2022; Ren, 2021), it highlights Fintech's role in bridging knowledge gaps and promoting inclusive economic growth beyond Tanzania's borders.

The organization of this manuscript is delineated as follows: the subsequent section provides a literature review, conceptual framework, and hypothesized relationships. The third section delineates the research methodology. The fourth section explores the results and significant findings, while the concluding section offers policy recommendations and considerations for future research endeavors.

Literature Review and Hypotheses Development

Theoretical Literature Review

This study employs the technology acceptance model (TAM) and financial literacy theory (FLT) to explore how Fintech influences financial literacy and stock market participation in Tanzania. TAM explains individuals' adoption of technology, highlighting Fintech's role in promoting market involvement (Davis, 1989). FLT emphasizes the importance of financial knowledge and skills in making sound financial decisions, mediating Fintech's impact on market engagement (Lusardi & Mitchell, 2017). Together, these frameworks provide a comprehensive basis for understanding how Fintech use enhances financial literacy, ultimately encouraging greater participation in the stock market, especially within emerging economies like Tanzania.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), introduced by Davis (1989), explains how individuals adopt and utilize new technologies based on two primary factors: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the belief that a technology will enhance performance, while PEOU pertains to the perceived effortlessness of the technology. If users view a technology as both beneficial and user-friendly, they are more likely to adopt it (Venkatesh & Davis, 2000). TAM has been widely validated across sectors, including Fintech, where factors such as convenience, security, and efficiency significantly influence adoption (Alalwan et al., 2016; Chuang et al., 2016). In stock market contexts, Fintech applications improve access to trading platforms, real-time data, and educational resources, thereby enhancing users' financial literacy and investment decisions (Andhov, 2018; Geranio, 2017). Moreover, Fintech reduces traditional barriers to market participation like geographic distance and high transaction costs, encouraging engagement among younger, tech-savvy users (Lai & Li, 2005). Applying TAM to this study helps analyze how investors on the Dar es Salaam Stock Exchange perceive Fintech's utility and usability, and how these perceptions, mediated by financial literacy, influence their stock market participation. This model thus highlights the transformative role of technology in informed investing.

Financial Literacy Theory (FLT)

Financial literacy theory (FLT) emphasizes the importance of acquiring and applying financial knowledge for effective money management and planning. It posits that financial literacy strongly influences financial behaviors and economic well-being, with inadequate knowledge often leading to poor financial choices and limited wealth accumulation (Huston, 2010; Lusardi & Tufano, 2015).

FLT highlights the role of financial education in equipping individuals to navigate complex financial systems, manage risks, and optimize outcomes (Remund, 2010). Studies reveal that financially literate individuals tend to have better savings habits, make strategic investments, and plan more effectively for retirement (Lusardi & Tufano, 2015; Van Rooij et al., 2011). Financial literacy also promotes stock market participation, enabling informed investment decisions (Yoong, 2010). It mediates the relationship between access to financial technologies and market engagement, suggesting that those familiar with digital tools are more likely to leverage them for wealth creation (Klapper et al., 2013). This theory is central to the present research, which explores how financial literacy influences the use of Fintech services for stock trading in Tanzania. By applying FLT, the study examines how enhancing digital financial education can foster inclusion, reduce economic disparities, and support investment through technology (Aren & Canikli, 2019; Lusardi & Mitchell, 2017).

Empirical Literature Review and Hypothesis Development

The interplay between fintech, financial literacy, and stock market participants has garnered increasing attention in recent empirical studies. Empirical studies Musabegovic et al. (2019); Sivaramakrishnan et al. (2017); Sophia (2021); Thomas and Spataro (2018) highlight how fintech adoption, financial literacy, and investor behavior collectively shape stock market participation, guiding this study's focus on the Dar es Salaam Stock Exchange.

Fintech and Stock Market Participation

Recent studies highlight the significant impact of fintech on stock market participation, particularly in emerging markets. In India, fintech developments have significantly boosted retail participation in the stock market, with mobile trading platforms and robo-advisors playing a crucial role in reducing entry barriers for retail investors (Kumar et al., 2024). Similarly, fintech apps have democratized access to financial services and increased capital market activity among retail investors (Priyadarshi et al., 2024). In China, internet wealth management products have positively influenced household stock market participation by enhancing financial awareness and reducing information costs (Lu et al., 2023). Mobile trading has democratized stock market access in India, empowering retail investors with real-time data and seamless trade execution, leading to a surge in participation (Hasnain et al., 2023).

The role of social capital in stock market participation via new technologies has been explored, emphasizing the importance of risk attitude and cognitive ability (Cheng et al., 2018). In China, internet wealth management products have positively influenced household propensity to invest and participate in the stock market, with a more pronounced effect among highly educated households and in regions with developed financial markets (Lu, et al., 2023). These findings underscore fintech's role in democratizing investment opportunities and fostering financial inclusion. Fintech literacy, alongside financial literacy, has been shown to positively affect capital market participation, particularly among young adults in Indonesia (Sasikirono et al., 2023).
H_1: Fintech positively influences stock market participation.

Fintech and Financial Literacy

Recent studies suggest that fintech has a positive impact on financial literacy. Kakinuma (2024) found that frequent fintech usage is associated with improved financial literacy, acting as a gateway to broader financial markets. This effect is particularly notable for small businesses, with Kusnendi and Hadiyati (2024) reporting that fintech adoption enhances financial literacy among MSMEs by providing easier access to financial services and education. Hikouatcha et al. (2024) corroborate these findings, emphasizing that the frequency of fintech use, rather than mere awareness, contributes more significantly to improving financial literacy levels. However, Morgan and Trinh (2019) present a nuanced perspective, demonstrating a strong positive relationship between financial literacy and awareness of fintech products in Lao PDR, but insufficient evidence to link financial literacy directly to fintech usage. In Kupang City, Fintech significantly enhances financial

literacy and inclusion, suggesting that increased use of financial technology can lead to better financial understanding and access (Kofi et al., 2023). These studies collectively highlight the potential of fintech in enhancing financial literacy across various contexts.
H_2: Fintech positively influences financial literacy.

Financial Literacy and Stock Market Participation

Financial literacy significantly influences stock market participation and investment decisions. Multiple studies have found a positive relationship between financial literacy levels and stock market engagement (Baveja & Verma, 2024; Kadoya et al., 2017; Lakoni et al., 2023; Soekarno & Pranoto, 2020). Numerous studies investigate the nexus between financial literacy and stock market engagement, offering varied insights.

Research indicates that financial literacy correlates with financial inclusion, where insufficient literacy, especially regarding stocks, hinders market participation (Arts, 2018; Grohmann et al., 2018). Nevertheless, Ozili (2020) challenges the notion that financial literacy is sufficient for promoting inclusive finance, positing that knowledge does not necessarily remove systemic barriers to financial access. Within the realm of limited stock market engagement, many studies have scrutinized its determinants, particularly emphasizing financial literacy's impact. Chikalipah (2017) identifies financial illiteracy as a significant barrier to financial inclusion in Sub-Saharan Africa, suggesting a connection to stock market participation. Blay et al. (2024) confirm a positive association between financial literacy and stock market participation in Ghana. In contrast, Banyen and Nkuah (2015) examine the low stock exchange involvement among Ghanaians, finding that financial literacy is not a primary factor, instead emphasizing behavioral aspects and the prevalence of financial illiteracy.

Higher financial literacy is associated with an increased likelihood of stock market participation, even after controlling for demographic, socio-economic, and psychological factors (Kadoya et al., 2017). This relationship is particularly evident among millennials and Generation Z, with those possessing higher education levels and economic professions demonstrating greater financial literacy and stock market involvement (Soekarno & Pranoto, 2020). Low financial literacy acts as a barrier to participation, while increased financial knowledge enhances investment confidence and decision-making (Baveja & Verma, 2024). These findings emphasize the importance of financial education programs to improve literacy and promote informed investing practices (Baveja & Verma, 2024; Lakoni et al., 2023). The following research hypotheses are developed based on the arguments above.
H_3: Financial literacy has a significant positive influence on stock market participation.

Financial Literacy as a Mediating Variable

Fintech innovations enhance access to financial services, yet effective use necessitates financial understanding. Merely adopting fintech does not ensure greater stock market participation without sufficient financial literacy to analyze digital information (Pillai et al., 2023). Consequently, financial literacy is a pivotal mediating factor elucidating the impact of fintech on investment behavior. The technology acceptance model (TAM) asserts that user behavior is influenced by both technology access and users' competencies (Alalwan et al., 2016; Chuang et al., 2016; Davis, 1989). Financial literacy improves users' capacity to effectively engage with fintech applications such as financial product analysis, market trend comprehension, and risk management, thus converting technological access into active financial market participation.

Several empirical studies support this mediating role. For instance, Grohmann et al. (2018); Morgan and Trinh (2019) found that financial literacy enhances the impact of digital financial services on financial inclusion and behavior. Similarly, perceived financial knowledge, rather than actual knowledge, appears to influence the use of Fintech services (Nguyen, 2022). This suggests that financial literacy bridges the gap between fintech accessibility and effective market participation.

H_4: Financial literacy mediates the relationship between fintech adoption and stock market participation, such that individuals with higher financial literacy are more likely to leverage fintech tools for investment purposes.

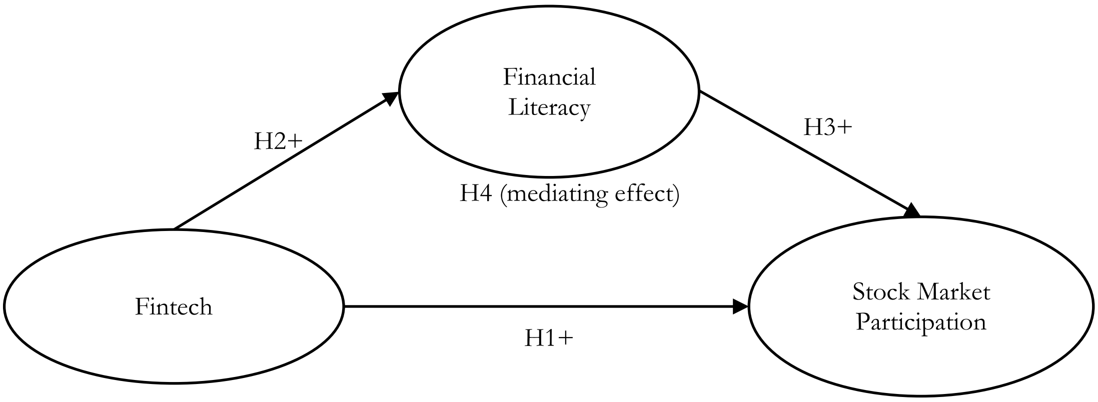

Figure 1. Conceptual Framework of the Research
Source: Updated from SKom et al. (2024)

Research Methods

This research employs primary data acquired through online self-reported surveys. Google Forms were utilized to enhance the efficiency of the online survey methodology. A total of 348 self-administered questionnaires were utilized for the investigation. The principal respondents of the study comprised stock market participants who expressed a willingness to engage in the survey. The researchers developed the questionnaire informed by the existing literature (Lusardi & Mitchell, 2014). A total of 260 responses were received and compiled. The online surveys and questionnaires were disseminated randomly without geographical limitations via social media platforms such as WhatsApp, Instagram, and Facebook.

In order to mitigate the potential for self-report bias stemming from the misunderstanding of participants while completing the questionnaires in the online survey, the author provided a succinct elucidation of the operational definitions of each category of indicator items that signify the variables, and structured the inquiries in a manner that is brief, precise, and unambiguous. Furthermore, the authors communicated to the participants the importance of refraining from disclosing their full names, advocating instead for the use of initials to ensure the preservation of confidentiality, thereby facilitating a comfortable environment for respondents to complete the questionnaire accurately.

This research utilized purposive sampling by establishing critical criteria to align with the objectives of the study. The conditions for choosing participants include that:
1. They should be no younger than 18 years to confirm their legal eligibility for financial transactions.
2. Participants are required to have previous experience utilizing fintech applications for financial management, investment, or participation in the stock market.
3. Candidates should manifest at least a preliminary awareness of financial principles, including but not limited to budgeting, saving, investing, and managing risks.
4. Although not obligatory, preference may be accorded to individuals who have engaged in stock market investments utilizing fintech platforms.
5. The study primarily focuses on respondents from Tanzania, with particular emphasis on urban and semi-urban regions where the adoption of fintech is on the rise.
6. Given that online surveys serve as the principal method of data collection, respondents must possess internet access and demonstrate familiarity with digital survey instruments.
7. Respondents are required to provide voluntary consent to participate in the survey and to furnish truthful, self-reported information about their usage of fintech and their levels of financial literacy.

Measurement and Variable Definition

The designed questionnaires assessed the perceptions and viewpoints of respondents concerning the construct derived from the research framework. All indicators representing the variables were evaluated utilizing a Likert scale ranging from 1 to 5 (1 = strongly disagree and 5 = strongly agree). A preliminary test was executed involving a sample of 50 respondents to authenticate the reliability and validity of the measurement instruments employed in the study. The findings revealed that all variables, including fintech application usage, financial literacy, and stock market participation, exhibited strong psychometric characteristics. Cronbach's alpha scores fluctuated between 0.82 and 0.94, clearly going above the advised standard of 0.70, while the metrics for composite reliability and average variance extracted (AVE) validated strong convergent validity. In addition, the confirmatory factor analysis suggested that every item significantly aligned with its respective construct, with factor loadings exceeding 0.60 and no signs of troubling cross-loadings. These results substantiate the robustness of the measurement model and affirm that all variables are suitable for inclusion in the main study (see Table 2).

Table 1. Reliability Test (Cronbach's Alpha)

Variables	Cronbach's Alpha	Number of Items
Fintech Usage (FT)	0.82	5
Financial Literacy (FL)	0.79	5
Stock Market Participation (SMP)	0.85	5

Data Analysis

The statistical evaluation pertinent to this investigation was performed utilizing the statistical package for the social sciences (SPSS) version 20.0. The information amassed via the questionnaire was initially input into an Excel spreadsheet for data cleansing, coding, and preliminary assessment prior to its transference to SPSS for comprehensive statistical analysis. The responses were categorized based on the relevant variable groups to ensure consistency and validity.

Descriptive statistics, including mean, standard deviation, frequency distributions, and percentage analysis, were used to summarize the demographic characteristics and general responses of the participants. Additionally, correlation analysis was performed to assess the strength and direction of the relationships between key variables.

A comprehensive regression analysis involving multiple variables was undertaken to analyze the ties between Fintech acceptance, financial literacy, and stock market engagement. The research evaluated the direct impact of fintech adoption on stock market engagement and the intermediary function of financial literacy.

Diagnostic tests such as multicollinearity (variance inflation factor-VIF), normality (Kolmogorov-Smirnov test), and heteroskedasticity (Breusch-Pagan test) were conducted to ensure the regression model's validity. The mediating effect of financial literacy between fintech adoption and stock market participation was analyzed using Baron and Kenny's (1986) mediation approach and the Sobel test.

A Sobel test assessed the mediating effect of financial literacy on fintech and stock market participation. Introduced by Sobel (1982) and supported by MacKinnon et al. (2002), this method evaluates indirect effects. The findings from the multiple regression analysis were then interpreted to understand how fintech adoption influences stock market participation in Tanzania and the extent to which financial literacy affects this relationship.

Table 2. Measurement and Questionnaire Items

Constructs	Definition	Code	Questionnaire Items	Sources
Fintech	The use of technology to enhance financial services, including	F1	I use fintech platforms (e.g., mobile apps, robo-advisors, online brokerage services) to manage investments.	(Harsono & Suprapti, 2024; Kumar & Rani, 2024; Pousttchi

Constructs	Definition	Code	Questionnaire Items	Sources
	digital payments, online banking, and mobile trading apps, facilitates stock market participation.	F2	Fintech platforms have made stock market participation easier for me.	& Dehnert, 2018)
		F3	I trust fintech applications to provide accurate and reliable investment information.	
		F4	Fintech services offer user-friendly features that help me make informed investment decisions.	
		F5	The use of fintech has reduced my dependency on traditional financial advisors.	
Financial Literacy	The ability to understand and apply financial knowledge for effective money management, investing, and decision-making.	FL1	I understand key financial concepts such as inflation, interest rates, and risk diversification.	(Epaphra & Kiwia, 2021; Lusardi & Mitchell, 2014; Van Rooij et al., 2011)
		FL2	Fintech platforms have improved my knowledge of financial markets.	
		FL3	I am confident in interpreting stock market trends and financial reports.	
		FL4	Using fintech services has enhanced my ability to manage my investments effectively.	
		FL5	I regularly educate myself on stock investments through fintech learning tools.	
Stock Market Participation	The involvement of individuals in buying, selling, and holding securities in a stock exchange.	SMP1	I actively trade stocks using fintech platforms.	(Blay et al., 2024; Lakoni et al., 2023; Shrestha & Rana, 2024)
		SMP2	I feel comfortable making independent stock investment decisions.	
		SMP3	Fintech has reduced barriers to stock market entry for me.	
		SMP4	I regularly monitor my stock portfolio using fintech applications.	
		SMP5	Fintech has helped me diversify my investments.	
Mediating Role of Financial Literacy	Financial literacy acts as a bridge between Fintech adoption and stock market participation, enhancing the effectiveness of Fintech in driving investment engagement.	MR1	Financial literacy helps me make better stock investment decisions.	(Ansar et al., 2023; Khawar & Sarwar, 2021; SKom et al., 2024)
		MR2	Without financial literacy, I would struggle to use fintech for stock investments.	
		MR3	I prefer using fintech applications that offer financial education features.	
		MR4	Financial literacy has improved my ability to assess fintech-provided investment advice.	
		MR5	The combination of fintech and financial literacy has enhanced my stock market engagement.	

Results and Discussion

Respondent Profile

The demographic profile of the 260 respondents elucidates the characteristics of stock market participants in Tanzania and their engagement with fintech and financial literacy.

Age Distribution: The predominant age group of respondents (34.6%) is 26-35 years, followed by 36-45 years (23.1%), indicating a trend of stock market participation among younger and middle-aged adults. Conversely, only 7.7% are aged 56 and older, suggesting a potential barrier to fintech engagement among older individuals.

Gender Distribution: Males constitute 57.7% of respondents, while females comprise 40.4%, correlating with literature that highlights male dominance in financial investment activities. The 1.9% identifying as "Other" reflects an effort towards inclusivity, yet gender disparities in stock market involvement remain evident.

Table 3. Respondent Profile

Demographic Variable	Category	Frequency (n = 260)	Percentage (%)
Age (years old)	18-25	50	19.2%
	26-35	90	34.6%
	36-45	60	23.1%
	46-55	40	15.4%
	56 and above	20	7.7%
Gender	Male	150	57.7%
	Female	105	40.4%
	Other	5	1.9%
Education Level	High School	30	11.5%
	Diploma	50	19.2%
	Undergraduate	120	46.2%
	Postgraduate	50	19.2%
	Other	10	3.9%
Stock Market Experience	Less than 1 year	70	26.9%
	1-3 years	90	34.6%
	4-6 years	60	23.1%
	More than 6 years	40	15.4%
Monthly Income (TSH)	Less than 1,000,000	80	30.8%
	1,000,000 - 3,000,000	60	23.1%
	Above 3,000,000	120	46.2%
Primary Source of Financial Information	Fintech Apps	90	34.6%
	Traditional Banks	70	26.9%
	Stock Brokers	50	19.2%
	Friends/Family	30	11.5%
	Other	20	7.7%

Education Level: The data reveals that 46.2% of respondents possess undergraduate degrees, followed by 19.2% with postgraduate qualifications, reinforcing the link between higher education and enhanced financial literacy. Conversely, participants with only a high school education (11.5%) exhibit the least engagement, underscoring education's significance in financial decision-making.

Stock Market Experience: A notable percentage of respondents (34.6%) have engaged in the stock market for 1-3 years, while 26.9% are novices with less than a year of experience; only 15.4% have over six years of investment experience. This indicates that fintech solutions are successfully attracting new investors who previously lacked access to financial markets.

Monthly Income: The predominant income bracket (46.2%) ranges from TSH 3,000,000 and above, highlighting high-income earners as key stock market participants. Those earning below TSH 1,000,000 (30.8%) face investment challenges, while middle-income earners (23.1%) possess greater investment potential but are less numerous.

Primary Source of Financial Information: Fintech applications emerge as the preferred financial information source (34.6%), indicating a significant influence of digital platforms on financial literacy and investment behavior. Traditional banks (26.9%) still hold relevance, whereas stock brokers (19.2%) and friends/family (11.5%) play diminished roles, illustrating a transition towards digital financial inclusion and accessible education.

Descriptive Statistics

We computed descriptive statistics to understand the distribution of key variables in the dataset.

Table 4. Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max
Fintech Usage (FT)	3.85	0.78	1	5
Financial Literacy (FL)	3.72	0.83	1	5
Stock Market Participation (SMP)	3.61	0.89	1	5

The utilization of financial technology exhibits the highest average score (3.85), implying that a significant proportion of respondents engage with fintech applications. The level of financial literacy (3.72) is comparatively elevated, signifying that fintech might be contributing to the education of participants in the stock market. Participation in the stock market (3.61) is marginally lower than the level of financial literacy, indicating that although fintech promotes knowledge acquisition, not all individuals possessing financial literacy actively engage in stock market activities.

Diagnostic Tests

The results of the diagnostic tests are summarized in the table below:

Table 5. Diagnostic Test Results

Test	Method Used	Test Statistic	Result	Interpretation
Multicollinearity	Variance Inflation Factor (VIF)	1.25 - 2.80	No multicollinearity	All VIF values are below 10, indicating no severe multicollinearity.
Normality	Kolmogorov-Smirnov (K-S) Test	p-value = 0.082	Data is normally distributed	Since $p > 0.05$, we fail to reject the null hypothesis, indicating normality.
Heteroskedasticity	Breusch-Pagan Test	p-value = 0.214	No heteroskedasticity	Since $p > 0.05$, the null hypothesis (homoscedasticity) is not rejected, indicating constant variance of residuals.

The diagnostic test results validate that the dataset adheres to fundamental statistical prerequisites for regression analysis. The VIF values (1.25–2.80) signify the absence of severe multicollinearity, confirming low correlation among independent variables. The Kolmogorov-Smirnov test ($p = 0.082$) indicates that the data approximates a normal distribution, which is critical for parametric analysis. Lastly, the Breusch-Pagan test ($p = 0.214$) verifies the lack of heteroskedasticity, indicating that residual variance is consistent across observations. These results affirm the dataset's robustness for subsequent statistical modeling and hypothesis testing.

Correlation Analysis

Pearson's correlation was used to test relationships between variables.

Table 6. Correlation Analysis

Variables	FT	FL	SMP
Fintech Usage (FT)	1	0.58**	0.52**
Financial Literacy (FL)	0.58**	1	0.63**
Stock Market Participation (SMP)	0.52**	0.63**	1

Fintech usage is positively correlated with financial literacy ($r = 0.58$, $p < 0.01$), meaning fintech applications significantly contribute to improving financial knowledge. Financial literacy is strongly correlated with stock market participation ($r = 0.63$, $p < 0.01$), implying that more financially literate individuals are more likely to invest in the stock market. Fintech usage and stock market participation have a moderate correlation ($r = 0.52$, $p < 0.01$), indicating that fintech influences investment behavior, but other factors (e.g., income, risk perception) may also play a role.

Multiple Regression Analysis

We used a multiple regression model to determine the effect of fintech on financial literacy and stock market participation.

Regression Model

$$\mathrm{SMP} = \beta_0 + \beta_1 \mathrm{FT} + \beta_2 \mathrm{FL} + \epsilon \quad (1)$$

Where:

- SMP represents stock market participation (dependent variable);
- FT is fintech adoption;
- FL is financial literacy;
- $\beta 0$ is the intercept, and $\beta 1$ to $\beta 2$ are the estimated coefficients; and
- ϵ is the error term.

Table 7. Regression Results

Variables	Beta Coefficient (β)	t-statistics	p-value
Fintech Usage (FT)	0.41	5.32	0.000**
Financial Literacy (FL)	0.55	7.81	0.000**
R^2	0.48		
F-Statistics	19.76		

Fintech usage significantly influences stock market participation ($\beta = 0.41$, $p < 0.01$), confirming that fintech platforms help individuals engage in stock trading. Financial literacy has the highest effect ($\beta = 0.55$, $p < 0.01$), suggesting that higher financial literacy leads to greater stock market participation. The model explains 48% of the variation ($R^2 = 0.48$) in stock market participation, meaning other external factors may also contribute.

Mediation Analysis: Financial Literacy as a Mediator

To assess whether financial literacy (FL) mediates the relationship between fintech usage (FT) and stock market participation (SMP), we applied Baron and Kenny's (1986) mediation model. Additionally, we used the Sobel test to confirm the significance of the mediation effect. Baron and Kenny's method is widely used in social sciences for testing mediation effects. The model follows a stepwise regression approach:

- Step 1: Establish that the independent variable (Fintech usage, FT) significantly affects the dependent variable (Stock market participation, SMP).
- Step 2: Establish that the independent variable (FT) significantly affects the mediator (Financial literacy, FL).
- Step 3: Establish that the mediator (FL) significantly affects the dependent variable (SMP) when controlling for the independent variable.
- Step 4: If the effect of FT on SMP reduces when FL is included, mediation occurs. If the direct effect becomes insignificant, full mediation occurs. If it remains significant but reduced, partial mediation occurs.

Mediation Analysis Results

We ran three separate regression models:

1. Model 1: $\mathrm{SMP} = \beta_0 + \beta_1 \mathrm{FT} + \epsilon$ (2)
2. Model 2: $\mathrm{FL} = \beta_0 + \beta_2 \mathrm{FT} + \epsilon$ (3)
3. Model 3: $\mathrm{SMP} = \beta_0 + \beta_1 \mathrm{FT} + \beta_3 \mathrm{FL} + \epsilon$ (4)

Table 8. Regression Results for Mediation Analysis

Model	Independent Variable	Dependent Variable	β (Coefficient)	t-statistics	p-value	R^2
Step 1	Fintech Usage (FT)	Stock Market Participation (SMP)	0.41	5.32	0.002**	0.38
Step 2	Fintech Usage (FT)	Financial Literacy (FL)	0.58	7.81	0.001**	0.46
Step 3	Financial Literacy (FL)	Stock Market Participation (SMP)	0.55	7.24	0.030**	0.51
Step 4	Fintech Usage (FT) + Financial Literacy (FL)	Stock Market Participation (SMP)	FT: 0.19; FL: 0.49	FT: 3.10; FL: 6.92	FT: 0.002; FL: 0.000**	0.58

Significance level: $p < 0.01$
Sobel test ($Z = 5.47$, $p < 0.001$) confirms mediation.

- Step 1: The utilization of fintech reveals a significant influence on participation within the stock market ($\beta = 0.41$, $p = 0.002$).
- Step 2: The application of fintech serves as a significant predictor of financial literacy ($\beta = 0.58$, $p = 0.001$), thereby substantiating that fintech enhances financial knowledge.
- Step 3: Financial literacy acts as a significant predictor of stock market participation ($\beta = 0.55$, $p = 0.030$), indicating that individuals possessing financial literacy are more inclined to engage in stock investments.
- Step 4: Upon the incorporation of financial literacy into the analysis, the impact of fintech on stock market participation diminishes from $\beta = 0.41$ to $\beta = 0.19$, yet remains statistically significant ($p = 0.002$), thereby suggesting a condition of partial mediation.

Recognizing the ongoing influence of fintech (FT) on stock market participation (SMP), even when we include financial literacy (FL) in the equation, we can infer that financial literacy acts as a partial mediator between the two. This indicates that fintech not only directly augments stock market engagement but also enhances financial literacy, which subsequently fosters investment behavior.

Discussion

The present study investigates the intricate relationship between fintech, financial literacy, and stock market participation in Tanzania, revealing several critical insights that align with recent literature. The findings suggest that fintech usage significantly influences stock market participation, affirming the notion that fintech platforms facilitate individual engagement in stock trading. This aligns with emerging trends in other markets, particularly in India, where fintech developments such as mobile trading platforms and robo-advisors have notably lowered entry barriers for retail investors (Kumar et al., 2024). The democratization of financial services through fintech not only enhances access but also stimulates capital market activity among retail investors Priyadarshi et al. (2024), a phenomenon similarly observed in Tanzania.

The study further establishes that financial literacy plays a pivotal role in this dynamic, with a pronounced effect on stock market participation. This finding corroborates existing research indicating that higher financial literacy correlates with increased likelihood of engaging in stock markets, particularly among younger demographics (Soekarno & Pranoto, 2020). In regions like China, the introduction of internet wealth management products has been associated with heightened household stock market participation by enhancing financial awareness and reducing information costs (Lu et al., 2023). This suggests that the impact of fintech in Tanzania may similarly enhance financial literacy, thereby fostering a more informed investor base.

Moreover, the study highlights that the incorporation of financial literacy into the analysis diminishes the impact of fintech on stock market participation, indicating a condition of partial mediation. This finding resonates with the literature suggesting that while fintech can enhance financial literacy, the latter is a crucial determinant of stock market engagement. For instance, research has shown that financial literacy is a significant barrier to financial inclusion in Sub-

Saharan Africa Chikalipah (2017), and its enhancement is vital for promoting active participation in financial markets.

Interestingly, the role of fintech in shaping financial literacy is further supported by studies indicating that frequent fintech usage is linked to improved financial knowledge (Kakinuma, 2024). This relationship underscores the potential of fintech as a gateway to broader financial markets, particularly for small and medium enterprises (Kusnendi & Hadiyati, 2024). However, it is essential to note that while fintech can enhance financial literacy, it does not automatically lead to increased market participation. As highlighted by Morgan and Long (2019), awareness of fintech products does not necessarily translate into usage, suggesting that additional factors may influence this relationship.

The study also echoes findings from Ghana, where a positive association between financial literacy and stock market participation was confirmed (Blay et al., 2024). However, it is crucial to recognize that financial literacy is not the sole determinant; behavioral aspects and systemic barriers also play significant roles in market engagement (Banyen & Nkuah, 2015). The complexity of this relationship is further evidenced by the nuanced perspectives of (Ozili, 2020), who argues that while financial literacy is essential, it may not suffice to overcome systemic barriers to financial access.

In conclusion, this study highlights Fintech's vital role in enhancing financial literacy and stock market participation in emerging markets like Tanzania. It emphasizes the need for targeted financial education to empower investors, promoting inclusivity and democratizing financial access through evolving digital technologies.

Implication and Conclusion

Implication

The findings of this study carry significant implications for various stakeholders, including policymakers, financial institutions, educators, and investors in Tanzania and similar emerging markets.

Policy Development: The study underscores the necessity for policymakers to create an enabling environment for fintech innovations that enhance financial literacy and facilitate stock market participation. Regulatory frameworks should encourage the growth of fintech platforms while ensuring that consumer protection and financial education initiatives are integrated into these platforms.

Financial Institutions: Traditional financial institutions must recognize the transformative potential of fintech in democratizing access to financial markets. By collaborating with fintech companies, they can develop products that cater to underserved populations, thereby broadening their customer base and promoting greater market participation.

Financial Education Programs: The research highlights the critical role of financial literacy in fostering stock market engagement. Therefore, targeted financial education programs should be developed and implemented, especially for younger demographics and those new to investing. These programs should aim to enhance understanding of financial products, investment strategies, and the benefits of stock market participation.

Fintech Development: As fintech continues to evolve, developers should focus on creating user-friendly platforms that not only facilitate trading but also incorporate educational resources to improve financial literacy. By doing so, they can empower users to make informed investment decisions, ultimately leading to higher levels of market participation.

Investment Strategies: For individual investors, the study suggests that increasing financial literacy through fintech resources can enhance their confidence and ability to engage in stock markets. Investors should seek to leverage fintech tools to improve their financial knowledge and make informed investment choices.

Research and Continuous Monitoring: The findings call for ongoing research to monitor the evolving relationship between fintech, financial literacy, and stock market participation. Understanding these dynamics will be essential for adapting strategies that promote financial inclusion and market engagement as technology and consumer behaviors continue to change.

Conclusion

In conclusion, this research elucidates the complex relationship among fintech, financial literacy, and stock market engagement in Tanzania, reflecting broader patterns in emerging economies. The results indicate that fintech not only promotes stock trading participation but also augments financial literacy, a key factor in market engagement. While fintech reduces entry barriers for retail investors, the significance of financial literacy remains critical for making informed investment choices.

The study reveals a condition of partial mediation, where the impact of fintech on stock market engagement is lessened when accounting for financial literacy, underscoring the importance of targeted educational efforts. As fintech advances, its capacity to democratize financial services and equip individuals with essential market navigation skills is crucial.

This study has several limitations that should be noted. First, the study's focus on Tanzania limits the applicability of findings to other emerging markets. Differences in financial systems and cultural contexts may affect fintech dynamics elsewhere. Second, the research may represent a static snapshot, potentially neglecting the evolving landscape of fintech and financial literacy. Technological and regulatory changes could significantly impact the explored relationships. Third, while correlations between fintech usage, financial literacy, and stock market participation are noted, establishing causality is complex. Additional factors may influence these relationships, warranting further exploration.

For future research, researchers can consider the following points. First, future studies could compare emerging markets to understand how different contexts impact fintech, financial literacy, and stock market participation. Second, research should include diverse demographic factors, especially gender, age, and socioeconomic status, to gain insights into their effects on financial literacy and investment behavior. Third, examining behavioral elements influencing fintech usage and market participation could clarify the motivations and barriers faced by individuals in financial engagement. Fourth, subsequent studies should assess the impact of tailored financial education initiatives on enhancing financial literacy and stock market involvement, particularly among youth and novice investors.

References

Abdinoor, A., & Mbamba, U. O. L. (2017). Factors influencing consumers' adoption of mobile financial services in Tanzania. *Cogent Business & Management*, *4*(1), 1392273. https://doi.org/10.1080/23311975.2017.1392273

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: examining the role of usefulness, ease of use, perceived risk, and self-efficacy. *Journal of Enterprise Information Management*, *29*(1), 118–139. https://doi.org/10.1108/JEIM-04-2015-0035

Andhov, A. (2018). Fintech as a Facilitator for the Capital Market Union?. *Nordic & European Company Law Working Paper*, (18-15). University of Copenhagen Faculty of Law Research Paper No. 2018-63. http://dx.doi.org/10.2139/ssrn.3232710

Ansar, S., Klapper, L., & Singer, D. (2023). The importance of financial education for the effective use of formal financial services. *Journal of Financial Literacy and Wellbeing*, *1*, 28–46. https://doi.org/10.1017/flw.2023.5

Aren, S., & Canikli, S. (2019). Effect of financial literacy and risk perception on individual investors' investment choices. *European Proceedings of Social and Behavioural Sciences*, *54*. https://doi.org/10.15405/epsbs.2019.01.02.68

Arts, L. (2018). *Financial literacy and stock market participation: The moderating effect of country-specific social connectedness*. Master thesis. Uppsala University, Disciplinary Domain of Humanities and Social Sciences, Faculty of Social Sciences, Department of Business Studies. https://www.diva-portal.org/smash/get/diva2:1193563/FULLTEXT01

Banyen, K., & Nkuah, J. (2015). Limited stock market participation in Ghana: a behavioral explanation. *International Journal of Economics and Empirical Research*, *3*(6), 286–305. https://dx.doi.org/10.2139/ssrn.2795036

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182. https://psycnet.apa.org/doi/10.1037/0022-3514.51.6.1173

Baruti, M., James, S., & Chusi, T. (2022). The potential innovative strategies of using mobile money systems for enhancing financial inclusion in Tanzania. *EPRA International Journal of Economic and Business Review, 10*(3), 1–10. https://doi.org/10.36713/epra9815

Baveja, G. S., & Verma, A. (2024). Impact of financial literacy on investment decisions and stock market participation using extreme learning machines. *Preprints*. https://doi.org/10.48550/arXiv.2407.03498

Blay, M. W., Musah, A., Ayariga, C., & Okyere, D. O. (2024). Determinants of financial literacy and its effect on stock market participation among university students in Ghana. *International Journal of Economics and Financial Issues*, *14*(2), 15. https://doi.org/10.32479/ijefi.15613

Cahyawati, N. E., Nantungga, K. H., & Tumewang, Y. K. (2023). The influence of financial technology & literacy on MSMEs sustainability with financial inclusion as a mediating variable. *Journal of Contemporary Accounting*, *5*(2), 71–82. https://doi.org/10.20885/jca.vol5.iss2.art2

Cheng, Y. F., Mutuc, E. B., Tsai, F. S., Lu, K. H., & Lin, C. H. (2018). Social capital and stock market participation via technologies: the role of households' risk attitude and cognitive ability. *Sustainability*, *10*(6), 1904. https://doi.org/10.3390/su10061904

Chikalipah, S. (2017). What determines financial inclusion in Sub-Saharan Africa? *African Journal of Economic and Management Studies*, *8*(1), 8–18. https://doi.org/10.1108/AJEMS-01-2016-0007

Chuang, L. M., Liu, C. C., & Kao, H. K. (2016). The adoption of Fintech service: TAM perspective. *International Journal of Management and Administrative Sciences*, *3*(7), 1–15.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. https://doi.org/10.2307/249008

Epaphra, M., & Kiwia, B. P. (2021). Financial literacy and participation in the financial markets in Tanzania: an application of the logit regression model. *Journal of Economic and Financial Sciences*, *14*(1),13. https://doi.org/10.4102/jef.v14i1.545

Fanta, A., & Mutsonziwa, K. (2021). Financial literacy as a driver of financial inclusion in Kenya and Tanzania. *Journal of Risk and Financial Management*, *14*(11), 561. https://doi.org/10.3390/jrfm14110561

FSD. (2024). *Digital Financial Services and Financial Technology in Tanzania*. Periodical Report.

Geranio, M. (2017). Fintech in the exchange industry: potential for disruption? *Masaryk University Journal of Law and Technology.*, *11*(2), 245–266.

Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross country evidence. *World Development*, *111*, 84-96. https://doi.org/10.1016/j.worlddev.2018.06.020

Harsono, I., & Suprapti, I. A. P. (2024). The role of fintech in transforming traditional financial services. *Accounting Studies and Tax Journal (COUNT)*, *1*(1), 81–91.

Hasnain, S. I., Mohanty, S., Acharya, K. K., & Behera, B. (2023). Role of fintech in the growth of Indian stock broking industry with special reference to Algo trading & mobile trading. *Asian Journal of Management and Commerce*, *4*(2), 202–208.

Hermawan, A., Gunardi, A., & Sari, L. M. (2022). Intention to use digital finance MSMEs: the impact of financial literacy and financial inclusion. *Jurnal Ilmiah Akuntansi dan Bisnis*, *17*(1), 171-182. https://doi.org/10.24843/jiab.2022.v17.i01.p12

Hikouatcha, P., Foka, A. G. T., Fossi, A. D., & Asongu, S. A. (2024). Empirical investigation of the Fintech and financial literacy nexus: small business managers' insights in Cameroon. *African Journal of Science, Technology, Innovation and Development*, *16*(2), 219–237. https://doi.org/10.1080/20421338.2023.2287818

Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, *44*(2), 296-316. https://doi.org/10.1111/j.1745-6606.2010.01170.x

Jia, T., Wang, C., Tian, Z., Wang, B., & Tian, F. (2022). Design of digital and intelligent financial decision support system based on artificial intelligence. *Computational intelligence and neuroscience*, *2022*(1), 1962937. https://doi.org/10.1155/2022/1962937

Kadoya, Y., Khan, M. S. R., & Rabbani, N. (2017). Does financial literacy affect stock market participation? *Working Paper*. https://dx.doi.org/10.2139/ssrn.3056562

Kakinuma, Y. (2024). Fintech as a gateway to enhance financial literacy. *Working Paper*. Social Science Research Network (SSRN).

Khawar, S., & Sarwar, A. (2021). Financial literacy and financial behavior with the mediating effect of family financial socialization in the financial institutions of Lahore, Pakistan. *Future Business Journal*, *7*(1), 27. https://doi.org/10.1186/s43093-021-00064-x

Klapper, L., Lusardi, A., & Panos, G. A. (2013). Financial literacy and its consequences: evidence from Russia during the financial crisis. *Journal of Banking & Finance*, *37*(10), 3904–3923. https://doi.org/10.1016/j.jbankfin.2013.07.014

Kofi, M. V., Tungga, C. A., & Kiak, N. T. (2023). The influence of the use of fintech on the development of literacy and financial inclusion among MSMEs in Kupang City. *Formosa Journal of Sustainable Research*, *2*(10).

Koloseni, D., & Mandari, H. (2024). Expediting financial inclusion in Tanzania using FinTech: the perspective of diffusion of innovation theory. *Technological Sustainability*, *3*(2), 171-194. https://doi.org/10.1108/TECHS-11-2023-0048

Kumar, J., & Rani, V. (2025). Financial innovation and gender dynamics: a comparative study of male and female FinTech adoption in emerging economies. *International Journal of Accounting & Information Management*, *33*(2), 334-353. https://doi.org/10.1108/IJAIM-03-2024-0098

Kumar, K., Das, D., Shenoy, R., & Likitha, D. (2024). The role of fintech in increasing retail participation in the Indian stock market. *International Journal of Scientific Research in Engineering and Management (Ijsrem)*, *8*(11).

Kusnendi, K., & Hadiyati, S. N. (2024). The influence of financial technology on improving financial literacy for MSMEs in Cirebon Regency. *Indonesian Journal of Advanced Research*, *3*(7), 1221–1240. https://doi.org/10.55927/ijar.v3i7.10525

Lai, V. S., & Li, H. (2005). Technology acceptance model for internet banking: an invariance analysis. *Information & Management*, *42*(2), 373–386. https://doi.org/10.1016/j.im.2004.01.007

Lakoni, I., Nurazi, R., Aziza, N., & Novitasari, N. (2023). Relationship of financial literacy to stock market participation. *Journal of Economics and Business Letters*, *3*(6), 33-48. https://doi.org/10.55942/jebl.v3i6.270

Lontchi, C. B., Yang, B., & Shuaib, K. M. (2023). Effect of financial technology on SMEs performance in Cameroon amid COVID-19 recovery: the mediating effect of financial literacy. *Sustainability*, *15*(3), 2171. https://doi.org/10.3390/su15032171

Lotto, J. (2020). Towards improving households' investment choices in Tanzania: does financial literacy really matter?. *International Journal of Financial Studies*, *8*(2), 29. https://doi.org/10.3390/ijfs8020029

Lu, Z., Wu, J., Li, H., & Galloway, B. (2024). Digital finance and stock market participation: the case of internet wealth management products in China. *Economic Systems*, *48*(1), 101148. https://doi.org/10.1016/j.ecosys.2023.101148

Lusardi, A., & Mitchell, O. (2017). How ordinary consumers make complex economic decisions: financial literacy and retirement readiness. *Quarterly Journal of Finance*, *7*(3), 1–31. https://doi.org/10.1142/S2010139217500082

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: theory and evidence. *American Economic Journal: Journal of Economic Literature*, *52*(1), 5-44. https://doi.org/10.1257/jel.52.1.5

Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics & Finance*, *14*(4), 332–368. https://doi.org/10.1017/S1474747215000232

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, *7*(1), 83–104.

Mangawing, L. A., Sulianto, T., Sari, A. P., Jafri, L. A. U., & Ramadhan, W. (2023, November). The influence of digital financial literacy on MSME performance in Balikpapan City. In *Proceeding of The International Seminar on Business, Economics, Social Science and Technology (ISBEST)* (Vol. 3, No. 1). https://doi.org/10.33830/isbest.v3i1.1348

Matari, D., & Temba, R. (2025). The factors affecting the adoption of financial technologies (fintech) by Tanzania's informal sector for the growth of their assets. *International Journal of Research and Scientific Innovation*, *VIII*(XII), 227–241. https://doi.org/10.51244/ijrsi.2024.11120023

Morgan, J. P., & Trinh, L. Q. (2019). Determinants and impacts of financial literacy in Cambodia and Viet Nam. *Journal of Risk and Financial Management*, *12*(1), 19. https://doi.org/10.3390/jrfm12010019

Morgan, P. J., & Long, T. Q. (2019). *Fintech and financial literacy in the Lao PDR* (No. 933). ADBI working paper series.

Musabegovic, I., Özer, M., Djukovic, S., & Jovanovic, S. (2019). Influence of financial technology (fintech) on financial industry. *Ekonomika Poljoprivrede*, *66*(4), 1003–1021. https://doi.org/10.5937/ekoPolj1904003M

Nguyen, T. A. N. (2022). Does financial knowledge matter in using fintech services? evidence from an emerging economy. *Sustainability*, *14*(9), 5083. https://doi.org/10.3390/su14095083

Nurohman, Y. A., Kusuma, M., & Narulitasari, D. (2021). Fin-tech, financial inclusion, and sustainability: a quantitative approach of muslims SMEs. *International Journal of Islamic Business Ethics*, *6*(1), 54. https://doi.org/10.30659/ijibe.6.1.54-67

Ololade, Y. J. (2024). Conceptualizing fintech innovations and financial inclusion: comparative analysis of African and U.S. initiatives. *Finance & Accounting Research Journal*, *6*(4), 546–555. https://doi.org/10.51594/farj.v6i4.1012

Ozili, P. K. (2020). Theories of financial inclusion. In *Uncertainty and Challenges in Contemporary Economic Behaviour* (pp. 89-115). Emerald Publishing Limited.

Pillai, D., Singh, A. S., Bhosale, T., & Doifode, A. (2023, August). A perspective on the application of fintech as a gateway for financial literacy. In *2023 International Conference on Information Technology (ICIT)* (pp. 811-814). IEEE. https://doi.org/10.1109/ICIT58056.2023.10225810

Pousttchi, K., & Dehnert, M. (2018). Exploring the digitalization impact on consumer decision-making in retail banking. *Electronic Markets*, *28*(2), 1–22. https://doi.org/10.1007/s12525-017-0283-0

Pratama, I., Rismawati, R., Pribadi, I., Aqsa, M., & Duriani, D. (2024). Digital finance and financial literacy: key drivers of MSME success in emerging economies. *International Journal of Entrepreneurship and Management Practices*, *7*(27), 01–11. https://doi.org/10.35631/ijemp.727001

Priyadarshi, A., Singh, P., Dawadi, P., Dixit, A. K., & Prasad, D. (2024). Role of fintech apps in increasing investment decisions: a study on the capital market. *Financial Markets, Institutions and Risks, 8*(2). https://doi.org/10.61093/fmir.8(2).186-197.2024

Remund, D. L. (2010). Financial literacy explicated: the case for a clearer definition in an increasingly complex economy. *Journal of Consumer Affairs*, *44*(2), 276–295. https://doi.org/10.1111/j.1745-6606.2010.01169.x

Ren, J. (2021). Research on financial investment decision based on artificial intelligence algorithm. *IEEE Sensors Journal*, *21*(22), 25190-25197. https://doi.org/10.1109/JSEN.2021.3104038

Sasikirono, N., Meidiaswati, H., Rachman, N. M., & Madyan, M. (2023). Financial literacy, financial technology literacy, and capital market participation. *Jurnal Manajemen Teori dan Terapan (Journal of Theory and Applied Management)*, *16*(3), 612–625. https://doi.org/10.20473/jmtt.v16i3.49550

Shrestha, P. M., & Rana, M. (2024). The influence of financial inclusion on stock market participation in Nepal: exploring the mediating effect of financial knowledge. *Journal of Mathematics Instruction Social Research and Opinion*, *3*(319–334). https://doi.org/10.58421/misro.v3i3.304

Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). Attitudinal factors, financial literacy, and stock market participation. *International Journal of Bank Marketing*, *35*(5), 818-841. https://doi.org/10.1108/IJBM-01-2016-0012

SKom, I. F., Rosdiana, R., & Ermalina, M. S. (2024). Financial literacy and financial attitudes as mediation from the effect of the ease of financial technology on interest stock investment. *International Journal of Management Studies and Social Science Research*, *6*(4).

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equations models. *Sociological Methodology*, *13*, 290–321. https://doi.org/10.2307/270723

Soekarni, M., Adam, L., Thoha, M., Sarana, J., Ermawati, T., Saptia, Y., Adityawati, S., Sujianto, & Wibowo, M. (2024). Strengthening financial literacy of smallholder farmers through agricultural fintech peer-to-peer lending: evidence and practical implications. *Cogent Social Sciences*, *10*(1), 9011. https://doi.org/10.1080/23311886.2024.2359011

Soekarno, S., & Pranoto, S. (2020). Influence of financial literacy on the stock market participation and financial behavior among Indonesian millennials. In Barnett, W. A., & Sergi, B. S. (Eds.), *Advanced Issues in the Economics of Emerging Markets* (Vol. 27, pp. 115-125). Emerald Publishing Limited. https://doi.org/10.1108/S1571-038620200000027009

Sophia, S. (2021). Financial literacy and financial innovation, fintech. *Journal of the International Academy of Case Studie*, *27*(1).

Thomas, A., & Spataro, L. (2018). Financial literacy, human capital and stock market participation in Europe. *Journal of Family and Economic Issues, 39*(4), 532-550. https://doi.org/10.1007/s10834-018-9576-5

Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, *101*(2), 449-472. https://doi.org/10.1016/j.jfineco.2011.03.006

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, *46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Yoong, J. (2010). Financial illiteracy and stock market participation: evidence from the RAND American Life Panel. In Mitchell, O. S., & Lusardi, A. (Eds.), *Financial Literacy: Implications for Retirement Security and the Financial Marketplace* (pp.76-100). New York: Oxford University Press. https://www.zbw.eu/econis-archiv/bitstream/11159/99560/1/EBP073447579_0.pdf

Zaimovic, A., Omanovic, A., Dedovic, L., & Zaimovic, T. (2025). The effect of business experience on fintech behavioural adoption among MSME managers: the mediating role of digital financial literacy and its components. *Future Business Journal*, *11*(1), 26. https://doi.org/10.1186/s43093-025-00432-x