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HOW DOES FINANCIAL INCLUSION MEDIATE THE IMPACT OF FINTECH USAGE ON CONSUMER BEHAVIOR?

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Abstract**:** *This study explores the impact of financial technology (fintech) adoption on financial inclusion, its influence on consumer behavior, and the mediating role of financial inclusion. Employing a quantitative approach through structural equation modeling, data were collected via surveys to examine both direct and indirect relationships among the variables. The results indicate that fintech usage plays a key role in enhancing financial inclusion. In turn, financial inclusion contributes significantly to shaping consumer behavior. However, the direct influence of fintech usage on consumer behavior is moderate and statistically inconclusive. The findings confirm that financial inclusion mediates the relationship between fintech usage and consumer behavior, supporting greater financial access and fostering new financial habits. The study concludes that financial inclusion is essential in translating fintech adoption into meaningful behavioral shifts, underscoring the importance of broader financial access initiatives to fully realize the potential of fintech.*

Keywords : Fintech usage, Financial Inclusion, Consumer Behavior

INTRODUCTION

The fast progression of innovation has affected the budgetary segment, which is commonly referred to as money-related innovation or fintech. Fintech encompasses various innovations in financial services that utilise information technology to improve the efficiency and accessibility of financial services. In numerous nations, especially developing countries, fintech plays a significant role in improving budgetary considerations by providing broader access to monetary services such as reserve funds, advances, and protections (Marini et al., 2020; Yuliyanti & Pramesti, 2021). This increased access has the potential to contribute to economic progress and societal well-being (Maulana et al., 2022).

The wonder of fintech utilisation is developing quickly in Indonesia, where numerous people, particularly smaller-scale, little, and medium ventures (MSMEs), are taking advantage of advanced monetary administrations. Less demanding access to monetary items and administrations through fintech is anticipated to drive positive changes in both monetary considerations and shopper behavior. Past studies have shown that fintech can support budgetary considerations by providing broader access to participate in financial activities (Suhardi et al., 2025; Suryanto et al., 2020). While the impact of fintech on financial inclusion has been widely discussed, there is still limited research examining the direct influence of fintech on consumer behavior, particularly in Indonesia.

Furthermore, although there is much literature identifying the relationship between financial inclusion and consumer behavior, there is little discussion on how the ease of access provided by fintech can significantly influence consumption patterns. Some studies have found that the use of fintech can lead to higher consumption due to factors such as ease and convenience; however, this could also increase the risk of uncontrolled

consumption (Anggraeni et al., 2023). Therefore, it is crucial to explore how financial inclusion can moderate consumption behavior influenced by fintech adoption.

Based on the existing literature, a few gaps need to be addressed. To begin with, while numerous studies have recognised the effect of fintech on money-related considerations, few have investigated the direct impact of fintech utilisation on consumer behavior in developing nations, especially Indonesia. Moment, in spite of the fact that there's prove that budgetary consideration can energize more judicious utilization behavior, the relationship between monetary incorporation and utilization behavior has not been broadly investigated, particularly in connection to the utilize of fintech as an instrument for accomplishing budgetary consideration.

The oddity of this enquiry lies in its approach, which interfaces the utilisation of fintech, budgetary incorporation, and customer behavior in a comprehensive expository system. This study considers points to look at the impact of fintech on customer behavior and distinguishes how money-related considerations can moderate this relationship. By utilising a relapse approach, this study is anticipated to supply modern bits of knowledge for the improvement of superior fintech approaches and contribute to a more profound understanding of the social effect of monetary innovation on society's well-being.

This study considers points to determine the impact of fintech utilisation on budgetary incorporation, the impact of fintech utilisation on customer behavior, and the role of finance-related considerations as an intervening variable between fintech utilisation and customer behavior.

THEORETICAL FRAMEWORK AND HYPOTHESES

Financial Technology (Fintech) and Its Development

The rise of Financial Technology (fintech) has changed the worldwide financial scene. Fintech includes different developments, such as blockchain, advanced installments, and manufactured insights, which have in a general sense reshaped how monetary educate work and how shoppers associated with money related administrations (Solihati et al., 2025). These innovations are driven by technological advancements and the growing consumer demand for faster, more transparent, and more accessible financial solutions. Fintech enhances operational efficiency and improves customer experience by streamlining processes and overcoming the limitations of traditional banking. The use of big data enables more personalized services, leading to stronger user engagement and satisfaction (Glushchenko et al., 2019; Zhang et al., 2024).

Within the managing an account segment, Fintech has been appeared to move forward key execution markers such as benefit, particularly in rising markets (Corbet et al., 2024; Wang & Loh, 2023). However, rapid fintech growth has introduced regulatory and security challenges, including data privacy and fraud risks. Adaptive regulatory tools, such as regulatory sandboxes, are now being employed to balance innovation and ecosystem protection (Dong et al., 2021; Panda & Kapoor, 2017). Scholars emphasise the importance of agile and proactive regulation to keep pace with Fintech developments (XU & XU, 2020; Xu et al., 2021). Sustainable Fintech growth requires synergy between technological innovation and responsive public policy.

Financial Inclusion and the Role of Fintech

Fintech plays a pivotal part in extending money related consideration, especially in underserved populaces. It is respected as a effective instrument for democratizing budgetary get to, advancing financial strengthening, and supporting the accomplishment of Feasible Improvement Objectives (Chatterjee et al., 2023; Odei-Appiah et al., 2022). In countries such as India and other developing economies, fintech has proven effective in simplifying transactions, boosting profitability, and offering low-cost financial solutions (Fajri et al., 2025; Safeer et al., 2023). Nevertheless, Fintech's contribution to financial inclusion remains complex, with challenges such as limited digital infrastructure and regulatory gaps hindering progress (Ozili et al., 2024; Wicaksana, 2023).

Consumer trust and digital literacy are critical for adoption. Targeted education is essential to ensure that users can safely and effectively benefit from Fintech services (Amnas et al., 2024). Strategic collaboration between traditional banks and fintech firms is emerging as a practical approach to broadening financial access. Innovations such as e-money and blockchain help overcome the barriers often faced by conventional financial institutions (Senyo et al., 2022). However, robust attention to data security and clear regulatory frameworks remain vital to ensure inclusive and sustainable fintech growth (Feghali et al., 2024).

Fintech and Consumer Behavior

Fintech significantly influences consumer behavior by altering how individuals perceive and use financial services. Based on the Technology Acceptance Model (TAM), perceived ease of use and perceived usefulness are key factors driving the adoption of fintech. When users find fintech platforms convenient, their trust and willingness

to engage increases (Hu et al., 2019; Nangin et al., 2020). Social influences, such as subjective norms and perceptions of others' use of fintech, also play an important role in shaping individual behavior (Safeer et al., 2023). Research indicates that trust is a primary driver of digital payment adoption among younger consumers (Agarwal, 2023; Al-Majali et al., 2024).

Digital competence also affects user engagement. Individuals with higher digital confidence are more likely to adopt fintech, whereas those experiencing digital anxiety tend to avoid it (Lee, 2021; Putriani & Apriani, 2022). Thus, user-friendly interfaces and responsive technical support are critical for minimising barriers. Perceived risks, such as data breaches or fraud, also influence adoption. For long-term success, fintech firms must implement strong risk management systems and maintain transparent communication (Babu et al., 2024). Overall, Fintech adoption is shaped by a combination of usability, trust, social norms, digital ability, and risk perception.

The Relationship Between Research Variables

Financial Inclusion serves as a crucial factor in enhancing consumer behavior by providing broader access to financial services, increasing financial literacy, and empowering consumers with more options for financial transactions. The availability of digital banking, mobile payments, and microfinance initiatives has enabled consumers to engage more actively in financial activities, influencing their purchasing decisions and financial habits.

Several studies have confirmed this relationship. For instance, Çera et al. (2021) emphasize that financial inclusion strengthens financial capability, leading to improved consumer financial decisions. Similarly, Chipunza & Fanta (2023) found that inclusive financial systems encourage responsible spending and saving behavior.

H1: Financial inclusion influences consumer behavior in the digital financial ecosystem.

Fintech usage transforms consumer interaction with financial services through enhanced accessibility, convenience, and efficiency. The adoption of mobile banking, online payments, and blockchain technology has reduced traditional barriers, making financial transactions faster and more user-friendly. This shift not only improves the customer experience but also drives changes in consumer behavior as users become more comfortable and reliant on digital financial solutions.

According to Darmansyah et al. (2021), fintech fundamentally alters consumer financial behavior by offering greater transaction flexibility and speed. In addition, Qi et al. (2024) observed how fintech usage correlates with changing financial habits, especially among younger consumers.

H2: Fintech usage influences consumer behavior in digital financial ecosystems.

Fintech headways have been instrumental in broadening monetary incorporation by coming to underbanked and unbanked populaces. Portable cash stages, computerized loaning, and peer-to-peer (P2P) loaning frameworks permit people in inaccessible ranges to get to budgetary administrations that were already out of reach. This advancement has helped bridge the financial access gap, contributing to broader economic participation and financial empowerment.

Inquire about Demir et al. (2022) and Adhikari et al. (2024) underpins this contention, highlighting how fintech empowers inclusive financial environments by overcoming geographic and financial obstructions. So also Rehman (2023) affirms the solid positive affect of fintech utilization on monetary consideration, especially in creating economies.

H3: Fintech usage influences financial inclusion by increasing the accessibility of financial services.

Financial Inclusion acts as a mediating variable in the relationship between fintech usage and consumer behavior. Through the increased accessibility and convenience offered by fintech innovations, financial inclusion expands, enabling consumers to participate more actively in financial markets. This enhanced participation influences consumer financial habits and decision-making, suggesting that the impact of fintech on consumer behavior is partly facilitated by increased financial inclusion.

This mediating effect is supported by the findings of Hidayat-ur-Rehman & Hossain (2024), who applied the Technology Acceptance Model (TAM) to show how financial inclusion links fintech adoption with behavioral change. Additionally, Kristanto (2021) notes that financial literacy—enhanced by fintech access—serves as an enabler that connects fintech usage to improved consumer behavior.

H4: Financial inclusion mediates the relationship between fintech usage and consumer behavior in the digital financial ecosystem.

The conceptual framework below illustrates the hypothesised relationships among fintech usage, financial inclusion, and consumer behavior in the digital financial ecosystem. This visually represents the proposed pathways and mediating effects explored in this study.

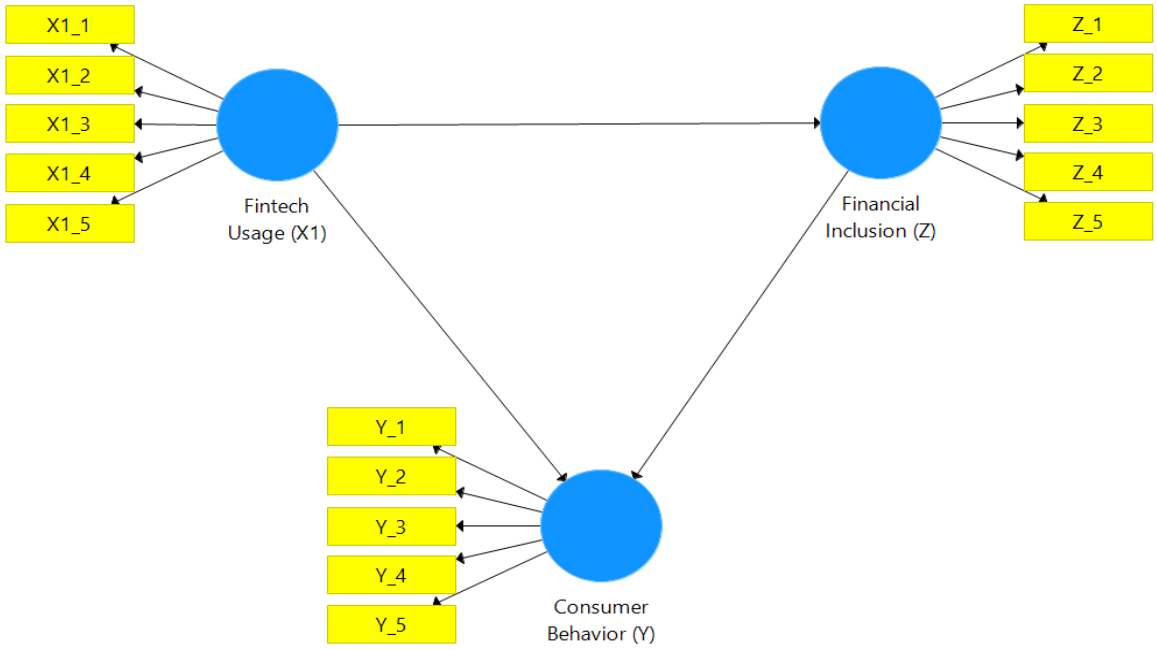

Figure 1. Conceptual Framework

RESEARCH METHODS

Research Design

This study uses a quantitative approach with an informative enquiry about a plan to examine the connections between fintech utilisation, monetary consideration, and consumer behaviour. The examination is conducted utilizing Auxiliary Condition Modeling (SEM), which permits for synchronous testing of different connections between inactive factors (Dhanraj et al., 2024)

Data Collection

The study population consisted of fintech service users in Lhokseumawe City. This city was selected as the research location because it is one of the industrial centers in Aceh Province. Lhokseumawe is home to several major companies such as Pertamina, Pupuk Iskandar Muda (PIM), and ExxonMobil, which contribute to a high level of economic activity. This condition encourages the community to increasingly use digital financial services, including fintech. In addition, the use of the internet and smartphones in Lhokseumawe continues to grow, although the level of digital financial literacy remains relatively low. Therefore, the city is considered an appropriate and empirically relevant location for studying the behavior of fintech service user. A purposive sampling technique was employed with the following criteria:

1. Respondents must be at least 18 years of age.
2. Have actively used fintech services for at least three months.
3. Have access to a smartphone and an internet connection.

These criteria were selected to ensure that respondents had adequate experience and capability in using fintech services, thus providing valid and representative data. According to Hair et al. (2017), the ideal sample size should be 5 to 10 times the number of indicators used in the study. With 15 indicators, the minimum sample size ranged from 75 to 150 respondents. However, to enhance the precision and robustness of the Structural Equation Modeling (SEM) analysis, this study targets 350 respondents (Dhanraj et al., 2024)

All questions used a 5-point Likert scale to gather detailed responses (Firdaus et al., 2025; Mariana et al., 2024; Nanda & Yunus, 2024). Subsequently, an operational variable presented in Table 1.

Data Analysis

This consider utilized structural equation modelling (SEM) to dissect the information. SEM is an progressed factual strategy that makes a difference analysts look at the complex connections between watched factors and fundamental (inactive) variables. It permits the synchronous investigation of different connections and gives a more

profound understanding of how the utilize of fintech influences monetary consideration and customer behavior (Deng et al., 2018; Rahmadhani et al., 2025).

Table 1. Operationalization of Variables

Variable	Definition	Indicator	Scale
Fintech Usage (X1)	The degree to which individuals utilize fintech platforms in daily activities (Deng et al., 2018).	1. Usage frequency 2. User comfort 3. Ease of access 4. Variety of fintech services used 5. Trust in fintech	Likert 1–5
Financial Inclusion (Z)	The extent of individuals' access to and use of digital financial services (Islam et al., 2023; López-Lemus et al., 2023).	1. Ownership of fintech account 2. Accessibility of financial services 3. Ability to transact digitally 4. Ease of savings or money management 5. Perceived financial inclusion	Likert 1–5
Consumer Behavior (Y)	The pattern of individual financial decision-making influenced by fintech Reyes-Carreto et al., 2022; Yılmaz et al., 2020).	1. Online consumption behavior 2. Spending management 3. Financial planning awareness 4. Saving and investment behavior 5. Attitude toward debt	Likert 1–5

The primary step in the investigation was to test the legitimacy and unwavering quality of the estimation instruments through Corroborative Calculate Examination (CFA). This step guarantees that each item precisely measures the intended concept. A thing is considered substantial if its stacking figure is over 0.5 (Islam et al., 2023). Unwavering quality is checked using Composite Unwavering quality (CR) and Normal Change Extricated (AVE). A CR esteem over 0.7 and an AVE over 0.5 show that the development is reliable (Yilmaz et al., 2020).

Once the instruments were proven valid and reliable, the next step was to test the overall model fit. This checks whether the proposed model fits the data well. Several fit indices were used, including Chi-square/df, RMSEA, CFI, TLI, and GFI. For example, an RMSEA below 0.06 and CFI and TLI values above 0.90 indicate that the model fits the data well (Esteves et al., 2023; López-Lemus et al., 2024).

Finally, hypothesis testing was conducted to assess both the direct and indirect effects of the latent variables in the model. This helps determine how fintech use and financial inclusion influence consumer behavior in Lhokseumawe, Indonesia. Using SEM, researchers can not only determine whether relationships exist, but also understand the direction of those relationships (Reyes-Carreto et al., 2022).

RESULTS AND DISCUSSION

Results

Validity Test

The results of the validity test, which indicate the strength of each indicator in measuring the variables under study, are presented below. This validity test was conducted by measuring Outer Loading (r-value) to ensure that each indicator significantly contributed to the construction of the measured variables. Table 1 presents the detailed results of the validity test.

The validity test results in Table 1 show that the markers within the demonstrate have exceptionally tall external loadings, ranging from 0.653 to 0.996, showing that all pointers are substantial in measuring their individual factors. The exceptionally tall t-statistics and p-value of 0.000 for all markers illustrate that the connections between the pointers and the factors are noteworthy. Subsequently, the demonstration can be considered substantial by and large, with the pointers viably and reliably speaking to the factors.

Reliability Test

A reliability test was conducted to survey the consistency and solidness of the estimation disobedient utilized within the think about. This appraisal was measured utilizing Cronbach's Alpha and Composite Reliability values, which show the inside consistency of the factors. A tall reliability score demonstrates that the markers reliably speak to the build being measured. Table 2 presents the nitty gritty comes about of this reliability test.

Table 2. Results of the Validity Test

No.	Variable	Indicator	Outer Loading (r-Value)
1	Fintech Usage (X1)	X1_1	0.993
		X1_2	0.996
		X1_3	0.986
		X1_4	0.996
		X1_5	0.992
2	Consumer Behavior (Y)	Y_1	0.916
		Y_2	0.653
		Y_3	0.913
		Y_4	0.653
		Y_5	0.658
3	Financial Inclusion (Z)	Z_1	0.992
		Z_2	0.992
		Z_3	0.986
		Z_4	0.988
		Z_5	0.988

Source: Processed Data (2025)

The reliability test illustrated that most components shown strong inside consistency, with Cronbach's Alpha and Composite Reliability values gathering or outperforming the slightest commendable limits. Cronbach's alpha values over 0.7 indicate that the factors are steady, whereas Composite Reliability values over 0.7 demonstrate that the constructs are reliably measured. Generally, the results indicate that the instrument used in this study is dependable and reasonable for further examination.

Table 3. Results of the Reliability Test

No.	Variable	Cronbach's Alpha	Composite Reliability
1	Fintech Usage (X1)	0.916	0.949
2	Consumer Behavior (Y)	0.863	0.920
3	Financial Inclusion (Z)	0.931	0.965

Source: Processed Data (2025)

Evaluation of the Structural Model (Inner Model)

The structural model evaluation examined the relationships among Fintech Usage (X1), Financial Inclusion (Z), and consumer Behavior (Y). The path analysis results indicate that Fintech Usage has a direct and substantial influence on Financial Inclusion, with a path coefficient of 151.886, and also affects Consumer Behavior with a coefficient of 1.875. In addition, Financial Inclusion exerts a strong influence on Consumer Behavior, with a path coefficient of 2.090.

The model demonstrated strong predictive capability, as reflected in the high indicator loadings associated with each latent construct. The indicators for Fintech Usage (X1_1 to X1_5), Financial Inclusion (Z_1 to Z_5), and Consumer Behavior (Y_1 to Y_5) showed consistently high values, indicating good construct reliability and convergent validity.

These findings suggest that the increased utilisation of financial technology significantly promotes financial inclusion, which in turn shapes consumer behavior. Thus, the integration of digital financial innovation and accessible financial services plays a strategic role in influencing economic behavior in the digital economy. The structural relationships and their significance are further illustrated in Image 1, which displays the results of the bootstrapping process, highlighting the path coefficients and the strength of each relationship in the model.

Model Fit Test

The table presents the R-squared and balanced R-squared values obtained from the auxiliary show investigation, providing experiences into the illustrative control of the autonomous factors on the subordinate factors. Based on the table above, it is obvious that the R-squared values for all factors are moderately moo, demonstrating that the relapse show does not clarify a significant portion of the inconstancy within the information. For Customer Behavior (Y), an R-Square esteem of 0.061 proposes that as it were 6.1% of the inconsistency in customer behavior can be clarified by the show. The balanced R-squared is marginally lower at 0.055, showing

that after altering the number of factors within the show, the clarification of shopper behavior becomes more restricted.

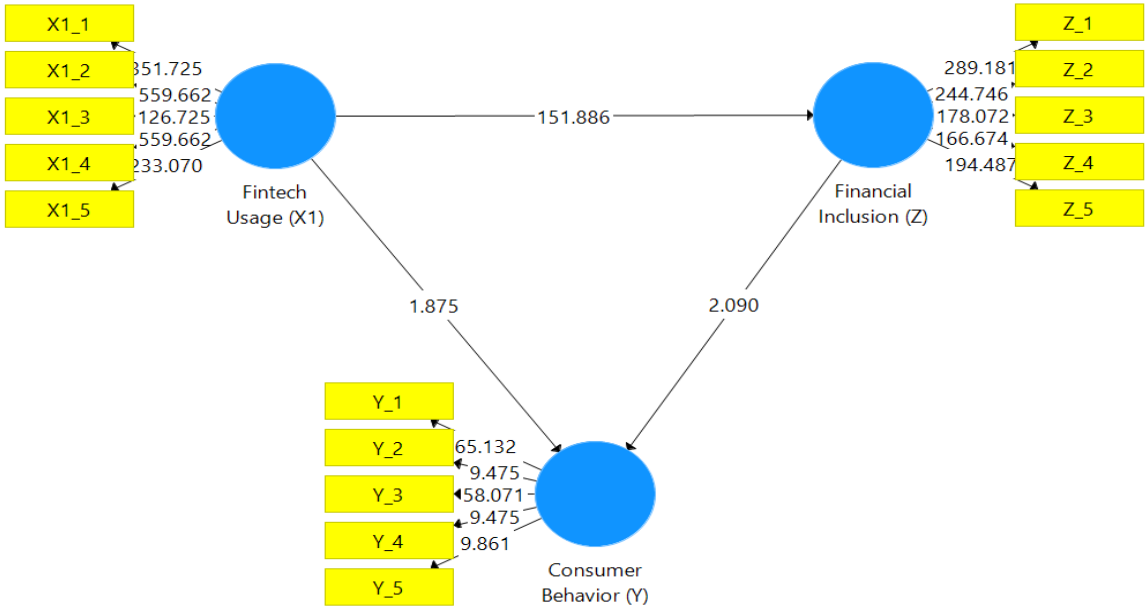

Figure 2. Bootstrapping Results of the Structural Model

Similarly, for Budgetary Incorporation (Z), with an R-squared of 0.027, the show clarifies as it were 2.7% of the inconstancy in financial inclusion. The balanced R-squared estimate of 0.024 emphasises that the show is not exceptionally compelling in clarifying the inconstancy in the money-related consideration. For fintech utilisation (X1), the R-squared value of 0.026 demonstrates that the model can only explain 2.6% of the variation in fintech utilisation. The balanced R-squared value of 0.028 is somewhat higher, indicating a slight improvement after the alteration of the number of factors.

Table 4. R-Square Values

Variable	R-Square	Adjusted R-Square
Consumer Behavior (Y)	0.061	0.055
Financial Inclusion (Z)	0.027	0.024
Fintech Usage (X1)	0.026	0.028

Source: Processed Data (2025)

Overall, the low R-squared values across all variables suggest that the model does not provide a strong explanation for the variability in the data. This indicates that the model may require additional variables or more advanced analytical techniques to improve its explanatory and predictive capabilities.

Hypothesis Testing

Table 4 presents the results of the hypothesis testing, illustrating the relationships between the variables and their respective direct and indirect influences.

1. Financial Inclusion (Z) ⟶ Consumer Behavior (Y)

   The coordinate impact of financial inclusion on shopper behavior was 0.613, indicating a direct positive relationship. The backhanded impact of 0.642 assists reinforces this association, showing that financial inclusion has both coordinate and circuitous impacts on customer behavior. The relationship is noteworthy, with a T-statistic of 2.870 and a P-value of 0.004, indicating that it may be a dependable finding.

2. Fintech Usage (X1) ⟶ Consumer Behavior (Y)

   The direct influence of fintech usage on consumer behavior was 0.312, which was moderate; however, the indirect effect of 0.283 indicated a weaker influence. With a T-statistic of 1.439 and a P-value of 0.151, this relationship is not statistically significant, indicating that the effect of fintech usage on consumer behavior may be less reliable or weaker.

3. Fintech Usage (X1) → Financial Inclusion (Z)

The direct influence of fintech usage on financial inclusion was strong at 0.982, and the indirect effect was almost equal at 0.983. With a T-statistic of 160.016 and a P-value of 0.000, this relationship is highly statistically significant, suggesting that fintech usage has a profound and consistent effect on financial inclusion.

Table 5. Hypothesis Testing Results

No.	Variable Relationship	Direct Influence	Indirect Effect	Remarks
1	Financial Inclusion (Z) → Consumer Behavior (Y)	0.613	0.642	Statistically significant, moderate effect
2	Fintech Usage (X1) → Consumer Behavior (Y)	0.312	0.283	Not statistically significant, moderate effect
3	Fintech Usage (X1) → Financial Inclusion (Z)	0.982	0.983	Highly significant, strong effect
4	Fintech Usage (X1) → Financial Inclusion (Z) → Consumer Behavior (Y)	0.613 (mediated)	0.642 (mediated)	Statistically significant, indicates that financial inclusion mediates the impact of fintech usage on consumer behavior

Source: Processed Data (2025)

4. Fintech Usage (X1) → Financial Inclusion (Z) → Consumer Behavior (Y)

The mediating relationship between fintech usage and consumer behavior through financial inclusion indicates that fintech has a significant indirect impact on consumer behavior by improving financial inclusion. The direct effect through this path was 0.613, while the indirect effect was 0.642. The significant T-statistic and P-value below 0.05 demonstrate that financial inclusion serves as a crucial pathway linking fintech usage to changes in consumer behavior.

Discussion

The Influence of Financial Inclusion (Z) on Consumer Behavior (Y)

The association between monetary incorporation and shopper behavior is progressively noteworthy in understanding how access to monetary administrations influences buyer decision-making and budgetary propensities. Research indicates a direct impact of financial inclusion on consumer behavior, with key findings such as a t-statistic of 2.870 and a p-value of 0.004, affirming its relevance in the modern financial landscape (Irfan et al., 2023).

Previous studies support this relationship by showing that both objective and subjective financial knowledge affects consumer financial behavior. For example, research in Poland revealed that financial knowledge is specifically related to payment choices rather than general financial behavior, suggesting that specific financial knowledge impacts consumer decisions regarding financial transactions (Świecka et al., 2021). This aligns with earlier research, which states that banking behavior drives financial inclusion and influences household consumption patterns, indicating a pathway through which financial inclusion changes consumer behavior (Herispon, 2018).

Furthermore, the complexity of this relationship is explained by the mediating role of financial behavior (Çera et al., 2021). Their research shows that financial inclusion fosters improved financial capability, which, in turn, positively strengthens consumer behavior. This reflects a broad consensus in the literature that financial inclusion not only increases access to financial services but also empowers consumers by enhancing their financial literacy. This empowerment leads to better financial decision-making and ultimately influences saving and spending behaviors (Chipunza & Fanta, 2023; Huda et al., 2024).

Prior studies have also revealed that financial inclusion encourages saving behavior among students and consumers, confirming that greater access to financial services leads to behavioral changes that enhance financial well-being (Irfan et al., 2023; Mahrizal et al., 2023). Additionally, other research emphasises that high-quality financial inclusion— characterised by accessible and affordable financial products—reduces financial vulnerability and encourages more responsible consumer behavior (Chipunza & Fanta, 2023).

Moreover, unique consumer characteristics indicate different preferences for financial products shaped by their financial behavior. Their findings suggest that different consumer segments respond variably to financial offerings, which are influenced by their previous interactions with financial services. This supports the idea that

financial inclusion significantly impacts consumer behavior, shaping meaningful financial decisions (Liu & Deng, 2019).

This synthesis of the existing literature demonstrates that financial inclusion is a key driver of consumer behavior, enhancing not only financial capability but also resilience in the face of economic challenges. Thus, financial inclusion plays a vital role in shaping consumer behavior across various demographics, ultimately leading to better financial decision-making and improved financial stability (Chipunza & Fanta, 2023; Huda et al., 2024).

The Relationship Between Fintech Usage and Consumer Behavior

The relationship between fintech usage and consumer behavior has garnered significant attention, particularly in light of the rapid advancement of financial technology and its transformative implications for financial services. However, research findings regarding the impact of fintech usage on consumer behavior often vary, indicating the need for a nuanced interpretation. While some studies reveal a positive association between fintech usage and consumer behavior, others highlight the barriers and challenges to adoption.

Demographic factors have been reported to significantly influence consumer behavior regarding fintech usage. Risk-averse consumers, for example, tend to experience anxiety when using fintech services, which can diminish their overall engagement and negatively affect their financial behavior (Qi et al., 2024). Additionally, concerns about data security remain a major concern for consumers considering fintech options, which further complicates their decision-making process (Stewart & Jürjens, 2018).

Gupta et al. (2022) highlighted that a substantial percentage of micro, small, and medium enterprises (MSMEs) recognise the benefits of fintech solutions. This underscores the potential of fintech providers to enhance consumer engagement through educational efforts. Al Rubaiai & Pria (2022) further support this notion by indicating that security concerns and trust are critical factors in determining the intention to adopt fintech products. This suggests that while fintech has the potential to transform financial interactions, consumer trust remains a key barrier to its widespread adoption.

Demir et al. (2022) argue that fintech plays a crucial role in enabling financial inclusion by overcoming the barriers that limit access to traditional banking services. They emphasise the role of mobile financial services in reaching underbanked populations, thus highlighting the opportunities that fintech innovations can provide to these underserved groups.

Moreover, Darmansyah et al. (2021) suggest that fintech is a critical intermediary, fundamentally changing how consumers conduct financial transactions and creating a new consumer landscape driven by innovation. However, it is important to note that challenges beyond fintech usage may also drive consumer behavior and influence effectiveness.

The COVID-19 pandemic notably accelerated the adoption of fintech services, leading to shifts in consumer behavior concerning finance and technology use (Abis et al., 2025). Abis et al. (2025) further discuss how the pandemic influenced consumer trust and triggered a broader transition towards digital financial solutions. These behavioral changes challenge the adoption mechanisms of fintech and underscore the importance of examining how fintech advancements intersect with changing consumer behavioral patterns.

In conclusion, the existing writing highlights the complex and variable affect of fintech utilization on customer behavior. Whereas fintech presents critical openings for budgetary incorporation and advancement, challenges such as shopper believe, demographic factors, and security concerns must be addressed to fully harness its potential in developing countries. Future research should explore not only the technological adoption process but also the sociocultural contexts that shape consumer engagement with fintech. This will provide a more comprehensive understanding of the role of fintech in consumer behavior, enabling the industry to better meet the needs of diverse consumer groups.

The Influence of Fintech Usage on Financial Inclusion

The enquiry into the discoveries shows that fintech utilisation has a profoundly critical effect on money-related considerations. The coordinate impact of fintech utilisation on monetary consideration is recorded at 0.982, whereas the circuitous impact is nearly comparable at 0.983. A T-statistic value of 160.016 and a p-value of 0.000 illustrate that this relationship is measurably critical, proposing that fintech utilisation features a solid and reliable impact on upgrading budgetary incorporation.

Theoretically, the strong relationship between fintech usage and financial inclusion aligns with the principles of service accessibility, affordability and adaptability. Fintech platforms are known for their capacity to democratise access to financial services, particularly for populations that have traditionally been unserved or underserved by conventional financial systems. The existing literature consistently highlights that fintech solutions

can effectively overcome geographical and socio-economic barriers to financial access, thereby promoting greater financial inclusion (Adhikari et al., 2024; Demir et al., 2022; Odei-Appiah et al., 2022). The high coefficients illustrate that fintech not only increases access to financial services but also facilitates user adoption through simplified processes and lower expenses.

Research also indicates that digital literacy plays a crucial role in mediating this relationship. Individuals who increase their use of fintech platforms often enhance their digital financial literacy, further facilitating their engagement with formal financial systems (Adhikari et al., 2024). Informing consumers about the functions and benefits of Fintech products can improve their financial behaviour and encourage greater use of financial services (Adhikari et al., 2024). This demonstrates a reinforcing feedback loop between usage and literacy, opening pathways to increased financial inclusion.

Rehman (2023) confirms that access to fintech and banking services has a significantly positive relationship with financial inclusion, consistent with the findings of this study. This study strengthens the idea that increased accessibility through fintech acts as a catalyst for financial inclusion, supporting the existing literature on the transformative impact of technology on financial access.

However, Wicaksana (2023) presents a more nuanced perspective, suggesting that while fintech promises advancements in financial inclusion, inconsistent research findings reveal the complexities that need to be addressed. These complexities may include regulatory environments and socioeconomic factors that influence consumer adoption of fintech solutions.

Additionally, research conducted by İltas & Demirgunes (2020) assert that fintech can significantly reduce barriers to financial services, contributing to broader economic growth and potential reductions in income inequality across various demographic groups. Their findings indicate that tailored fintech solutions, particularly those aimed at previously marginalised communities, can effectively bridge the gaps left by traditional financial systems.

Overall, the analysis of fintech usage as a driver of financial inclusion provides compelling evidence to support the assertion that technology can fundamentally reshape access to financial services. This significant impact underscores the importance of fintech innovation and digital literacy in facilitating inclusion. As the financial landscape continues to evolve, ongoing research and policy efforts must prioritise bridging existing gaps to leverage the full potential of fintech to achieve inclusive financial systems.

The Mediating Role of Financial Inclusion in the Influence of Fintech Usage on Consumer Behavior

The intervening relationship between fintech utilization and customer behavior through financial inclusion gives basic bits of knowledge into the flow of the affect of fintech on shopper propensities and decision-making. The investigation shows that fintech utilization contains a noteworthy circuitous impact on buyer behavior by improving it. Usually prove by the coordinate impact of 0.613 and an backhanded impact of 0.642, underscoring the importance of financial inclusion as a pathway linking fintech usage to changes in consumer behavior. The significant T-statistic and P-value below 0.05 demonstrate the reliability of this mediating effect.

From a hypothetical point of view, these discoveries reverberate with set up models of innovation selection and behavior alter. The Innovation Acknowledgment Show (TAM) sets that seen ease of utilize and seen value are basic determinants of innovation acknowledgment (Hidayat-ur-Rehman & Hossain, 2024). Within the setting of fintech, progressed budgetary incorporation coming about from broader get to to budgetary administrations increases consumers' discernments of the benefits related with fintech stages, in this manner impacting their budgetary behaviors.

Additionally, financial literacy is a crucial enabler of this mediation process. Financial literacy equips individuals with the knowledge to effectively utilise fintech services, thereby expanding their engagement with formal financial systems (Kristanto, 2021). This notion is consistent with the argument that informed consumers are more inclined to adopt financial technology, ultimately influencing their financial decision-making patterns.

The current findings align with existing research emphasising the interplay between financial inclusion and consumer behavior. Hidayat-ur-Rehman & Hossain (2024) explored how fintech adoption transforms consumer performance, demonstrating that increased financial inclusion leads to enhanced financial behavior and sustainability. This mirrors the results of the present study, where financial inclusion acts as a critical bridge that facilitates the transition from fintech engagement to positive changes in consumer behavior.

Moreover, Irimia-Diéguez et al. (2023) found that social norms and attitudes toward fintech significantly influence consumer adoption and behavior, reinforcing the notion that financial inclusion plays a mediating role in this relationship. As fintech expands financial access, it fosters positive consumer behaviors, enabling better financial planning and economic participation.

In contrast, Tan (2022) highlighted the challenges associated with fintech adoption, noting that despite its potential to enhance financial access, socioeconomic barriers still affect user engagement. This observation suggests that while fintech promotes financial inclusion, disparities in digital literacy and accessibility may limit its impact on consumer behavior. These findings suggest that achieving broader financial inclusion through fintech requires addressing socioeconomic inequalities and enhancing digital financial literacy.

The relationship between fintech, financial inclusion, and consumer behavior has substantial implications for both policymakers and industry practitioners. Policymakers are encouraged to develop regulatory frameworks that promote financial literacy and digital accessibility, making fintech services comprehensible and accessible to a wider demographic (Kharisma, 2021). Additionally, educational programs aimed at improving financial literacy can empower consumers to utilise fintech platforms better, driving transformative changes in financial behaviors.

For practitioners, the results imply that expanding fintech services to underserved populations could significantly impact financial behaviors, leading to improved financial stability and inclusion. Collaborations between fintech companies, educational institutions, and government agencies can further support these initiatives, ensuring that the benefits of fintech are distributed equitably.

These findings emphasise the strategic role of fintech in promoting financial inclusion and influencing consumer behavior. The mediating effect of financial inclusion underscores its critical function as a bridge between fintech usage and consumer financial practices. Moving forward, efforts to enhance financial literacy and equitable fintech access will be crucial in leveraging the full potential of technology to drive inclusive financial growth.

CONCLUSION

This study reveals that financial inclusion significantly influences consumer behavior in Pakistan. Higher levels of financial inclusion lead to more positive changes in consumers' financial decision making. Fintech adoption improves accessibility to financial services, although challenges such as consumer trust and data security hinder its widespread acceptance.

Moreover, fintech usage greatly expands access to financial services, especially benefiting communities that were previously excluded from traditional banking systems. Financial inclusion also plays a key mediating role between fintech adoption and consumer behavior, indicating that increasing financial inclusion through fintech can drive positive changes in consumer financial habits.

Implications and Recommendations

This study highlights the importance of developing fintech solutions that not only improve access but also build consumer trust by enhancing data security and consumer protection. Regulators and industry players should collaborate to create an environment that supports fintech innovation while ensuring safety and transparency.

Furthermore, financial literacy and digital education programs must be strengthened so that underserved populations can fully benefit from fintech services. This will enable fintech to effectively promote financial inclusion and improve economic well-being.

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