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Perceived FinTech Innovation Characteristics and Financial Well-being: The Mediating Role of Financial Inclusion among FinTech-Using Culinary MSMEs in Greater Jakarta

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Abstract: This study examines the relationship between Perceived FinTech Innovation Characteristics and the Financial Well-being of FinTech-using culinary MSMEs in Greater Jakarta (Jabodetabek), Indonesia, with Financial Inclusion as a mediating mechanism. The study addresses the need to understand how perceptions of FinTech innovation characteristics affect MSME financial conditions beyond mere technology use. A quantitative explanatory research design was employed using primary data collected from 500 culinary MSME owners who actively used at least one FinTech service. Since all respondents were existing FinTech users, this study does not examine the adoption decision between users and non-users; rather, it focuses on how users perceive the relative advantage, compatibility, complexity, trialability, and observability of the FinTech services they utilise. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results indicate that Perceived FinTech Innovation Characteristics positively influence Financial Inclusion and Financial Well-being. Furthermore, Financial Inclusion positively affects Financial Well-being and shows complementary partial mediation in the relationship between FinTech innovation characteristics and Financial Well-being. The findings highlight that favourable perceptions of FinTech innovation characteristics may enhance MSMEs' engagement with formal financial services, thereby supporting their financial resilience and decision-making capacity. This study contributes by distinguishing perceptions of innovation from actual adoption behaviour and by demonstrating the mediating role of financial inclusion in strengthening business-level financial well-being. The findings imply that policymakers and FinTech providers should enhance digital financial literacy and develop MSME-oriented financial services.

Keywords: perceived FinTech innovation characteristics, financial inclusion, financial well-being, culinary MSMEs, PLS-SEM

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INTRODUCTION

FinTech has transformed the delivery of financial services through faster, more accessible, technology-based solutions, contributing to business model innovation and new forms of

financial intermediation (Lee & Shin, 2018; Gomber et al., 2018). In developing economies, digital finance can expand access to formal financial services and support financial inclusion (Ozili, 2018; Sahay et al., 2020; Demir et al., 2022; Ullah & Begum, 2025). Culinary MSMEs conduct frequent payments, transfers, financing, and cash-flow transactions, making digital financial services potentially relevant to their daily operations. However, service availability does not automatically imply deep or effective use. Among MSMEs that already use FinTech, owners may differ in how they perceive the relative advantage, compatibility, complexity, trialability, and observability of the services they use. These perceptions may shape how comfortably FinTech is integrated into business routines and how users engage with the formal financial system.

This study draws on Rogers (2003) Diffusion of Innovations (DOI) Theory, which explains adoption through perceived characteristics of the innovation, including relative advantage, compatibility, complexity, trialability, and observability. These characteristics are antecedent perceptions that help explain adoption; they are not equivalent to the actual level or intensity of adoption. Accordingly, the revised manuscript labels the independent construct Perceived FinTech Innovation Characteristics (PFIC). PFIC captures MSME owners' evaluations of the FinTech services they already use, rather than their adoption of FinTech. This distinction is essential because every respondent in the sample was already an active FinTech user. The study therefore examines variation in perceptions of innovation among existing users, rather than the transition from non-adoption to adoption.

FinTech may facilitate financial inclusion by reducing transaction frictions and expanding channels through which users interact with formal financial services (Ozili, 2018; Demir et al., 2022; Yang & Zhang, 2022; Setiawan et al., 2025). Financial Inclusion is conceptually grounded in Sarma's (2008) multidimensional framework, which distinguishes access or penetration, availability, and usage of the formal financial system. These dimensions jointly constitute financial inclusion and are not assumed to be interchangeable. Therefore, the revised measurement specification treats Financial Inclusion as a formative higher-order construct. To reduce content contamination, continuance intention toward FinTech is conceptually separated from Financial Inclusion, and the revised item mapping distinguishes actual service usage from access and availability. Evidence from prior research also indicates that stronger financial inclusion can reduce financial vulnerability and improve households' ability to cope with economic risk (Koomson et al., 2020).

Financial Inclusion may support Financial Well-being by enabling businesses to obtain and use financial services that help them meet current needs, manage liquidity pressures, respond to shocks, and make financial decisions with greater flexibility (Brüggen et al., 2017; Ahamed & Jafar, 2025; Chhillar et al., 2025; Asim et al., 2025). Brüggen et al. (2017) developed their framework primarily for individuals, so an organisational adaptation requires conceptual boundaries. In this study, business-level Financial Well-being refers to the perceived ability of an MSME to meet routine financial obligations, maintain adequate liquidity for operations, absorb unexpected financial shocks, preserve short-term financial security, and retain discretion in financial decision-making. It differs from financial performance, which concerns outcomes such as revenue, profit, and growth; from financial health, which is often assessed through objective accounting ratios; and from financial sustainability, which concerns longer-term viability. To avoid overlap with Financial Inclusion, revised Financial Well-being indicators focus on financial condition and resilience rather than access to or use of financial services.

Research on FinTech, Financial Inclusion, and Financial Well-being has expanded. Still, limited empirical work integrates perceived innovation characteristics, financial inclusion, and business-level financial well-being in a single framework. Previous studies have examined

FinTech use and inclusion (Ozili, 2018; Yang & Zhang, 2022; Setiawan et al., 2025), FinTech-related factors and financial well-being (Ahamed & Jafar, 2025; Budiyanto et al., 2025; Sajid et al., 2025), and Financial Inclusion as a mechanism linking digital finance with sustainable outcomes (Ullah & Begum, 2025). The present study contributes by separating perceived characteristics of FinTech innovation from actual adoption and by testing whether Financial Inclusion serves as an intervening mechanism between these perceptions and business-level Financial Well-being among existing FinTech users in culinary MSMEs.

Based on these theoretical and conceptual foundations, this study aims to assess the relationship between Perceived FinTech Innovation Characteristics, Financial Inclusion, and Financial Well-being among FinTech-using culinary MSMEs in Greater Jakarta, and to examine the mediating role of Financial Inclusion. DOI Theory provides the basis for PFIC; Sarma (2008) Financial Inclusion Index provides a multidimensional basis for Financial Inclusion; and Brüggen et al. (2017) Financial Well-being framework informs the business-level outcome. The following hypotheses are proposed:

H1: Perceived FinTech Innovation Characteristics positively influence Financial Inclusion.
H2: Perceived FinTech Innovation Characteristics positively influence Financial Well-being.
H3: Financial Inclusion positively influences Financial Well-being.
H4: Financial Inclusion mediates the positive relationship between Perceived FinTech Innovation Characteristics and Financial Well-being.

METHOD

This explanatory quantitative study examines the relationships among Perceived FinTech Innovation Characteristics (PFIC), Financial Inclusion, and Financial Well-being among FinTech-using culinary MSMEs in Greater Jakarta (Jabodetabek). PFIC is the independent variable, Financial Inclusion is the mediating variable, and Financial Well-being is the dependent variable. The target population is explicitly limited to culinary MSME owners in Jakarta, Bogor, Depok, Tangerang, and Bekasi who already use FinTech. Purposive sampling was employed because respondents were required to have direct experience with digital financial services. Eligibility criteria were: (1) ownership of a culinary MSME; (2) at least one year of business operation; (3) active use of at least one FinTech service such as mobile banking, digital payments, e-wallets, or digital financing; (4) location in Greater Jakarta; and (5) direct involvement in financial or operational decision-making. Because non-users were excluded by design, the study does not explain why some MSMEs adopt FinTech while others do not; it examines variation among existing users.

Data were collected through online Google Forms and paper questionnaires from December 22, 2025, to June 22, 2026. A total of 758 questionnaires were distributed and screened for completeness and eligibility, yielding 500 valid responses (65.96%). All retained respondents met the predefined inclusion criteria. The minimum sample size was assessed using G*Power for a linear multiple regression fixed model with R^2 deviation from zero, effect size $f^2 = 0.15$, significance level $\alpha = 0.05$, statistical power = 0.95, and two predictors of Financial Well-being (Faul et al., 2009). This calculation suggested a minimum sample of approximately 107 respondents; therefore, 500 valid cases exceeded the minimum requirement. Primary data were collected using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Responses were screened for incompleteness, duplicate submissions, and outliers before PLS-SEM analysis.

Three conceptual foundations are integrated in the revised model. First, DOI Theory (Rogers, 2003) is used to conceptualise PFIC in terms of relative advantage, compatibility,

complexity, trialability, and observability. These are treated as perceptions of innovation characteristics rather than indicators of actual adoption. Second, Financial Inclusion follows Sarma (2008) and is specified as a multidimensional, higher-order formative construct comprising Usage, Access, and Availability. Items that represent continuance intention rather than financial inclusion are excluded from the revised measurement model. Third, Financial Well-being is adapted from Brüggen et al. (2017) to the organisational level and focuses on the MSME's perceived ability to meet routine financial obligations and withstand financial pressure. Items that merely repeat access to or use of formal financial services are excluded to preserve conceptual separation between the mediator and outcome.

The resulting framework proposes that favourable perceptions of FinTech innovation characteristics may be associated with stronger financial inclusion among existing users and, directly or indirectly, with stronger business-level Financial Well-being. Financial Inclusion is positioned as the mediator because access to, availability of, and actual use of formal financial services may provide a mechanism through which perceptions of FinTech-related innovation translate into improved financial resilience. The cross-sectional design supports testing of directional structural paths but does not establish temporal causality.

Table 1. Revised Measurement of Research Variables

Variable	Dimension	Code	Questionnaire Item
Perceived FinTech Innovation Characteristics	Relative Advantage	FA1	FinTech provides advantages for managing the financial activities of my business.
		FA2	FinTech offers my business a better alternative for handling financial activities than previously used methods.
	Compatibility	FA3	FinTech is consistent with the financial needs of my business.
		FA4	FinTech fits with the existing financial practices of my business.
	Complexity	FA5	The procedures required to use FinTech are understandable for my business.
		FA6	Using FinTech does not involve complicated procedures for my business.
	Trialability	FA7	My business has the opportunity to test FinTech before deciding to use it regularly.
		FA8	My business can experiment with FinTech features before incorporating them into regular financial activities.
	Observability	FA9	The outcomes of using FinTech can be observed in my business's financial activities.
		FA10	The results of FinTech use can be clearly recognized by my business.
Financial Inclusion	Usage	FIC1	My business currently uses FinTech services for its financial activities.
		FIC2	My business regularly incorporates FinTech services into its financial activities.
		FIC3	My business uses FinTech services whenever they are relevant to our financial needs.
	Access	FIC4	My business has access to formal financial services through appropriate channels.
		FIC5	My business can obtain the formal financial services required for its operations.
		FIC6	My business can access formal financial services without substantial barriers.
	Availability	FIC7	The formal financial services required by my business are available when needed.

Variable	Dimension	Code	Questionnaire Item
Financial Well-being		FIC8	My business has access to a sufficient range of formal financial service options.
	Current Financial Adequacy and Obligations	FWB1	My business is able to meet its day-to-day operating financial needs.
		FWB2	My business is able to meet its financial obligations on time.
	Financial Resilience and Shock Absorption	FWB3	My business can maintain its operations without experiencing excessive financial pressure.
		FWB4	My business is able to handle unexpected financial needs when they arise.
		FWB5	My business has sufficient financial capacity to withstand temporary financial pressure or a decline in revenue.

Source: Adapted from Rogers (2003), Sarma (2008), and Brüggen et al. (2017)

Data were analysed and the measurement model and the structural correlations among the constructs were tested using Partial Least Squares Structural Equation Modelling (PLS-SEM). PLS-SEM was chosen because it fits well with predictive-oriented research models with complicated linkages and formative and reflective constructs . The measuring approach was validated by testing indicator reliability and construct validity. For reflective constructs, outer loadings above 0.70 are regarded acceptable to test convergent validity. Discriminant validity was assessed to check the distinctiveness of the constructs. In contrast, Financial Inclusion was defined as a higher-order formative construct, so its measurement evaluation focused on outer weights, indicator significance and the variance inflation factor (VIF) to analyse the contribution and possible multicollinearity among indicators. Next, the structural model was assessed by computing the coefficient of determination (R2) to ascertain the explanatory power of the endogenous constructs. The direct and indirect linkages among constructs were examined using bootstrapping with 5,000 resamples. The significance of the hypothesised associations was tested with path coefficients (β), standard errors, t-values, p-values and 95% bootstrap confidence intervals. In addition, the full-collinearity assessment approach proposed by Kock (2015) was used to test the possible presence of common method bias (CMB) by analysing construct-level full-collinearity VIF values; values below the threshold of 3.3 indicate that CMB is unlikely to impact the research findings.

RESULTS AND DISCUSSION

Results

Table 2. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	210	42%
	Female	290	58%
Age	< 25 years	85	17%
	25–34 years	210	42%
	35–44 years	135	27%
	> 44 years	70	14%
Education	High School/Equivalent	160	32%
	Diploma	95	19%
	Bachelor's Degree	210	42%
	Master's/Doctoral Degree	35	7%
Business Duration	1–3 years	180	36%
	4–6 years	190	38%
	> 6 years	130	26%
	E-wallet	240	48%

Characteristics	Category	Frequency	Percentage
Primary FinTech Service Used	Mobile banking	150	30%
	Digital Loans	80	16%
	Others	30	6%

Source: Data processed (2026)

Table 2 shows that 58% of the 500 culinary MSME respondents were women and 42% were men. By age, 42% were 25–34 years old, followed by 35–44 years (27%), below 25 years (17%), and above 44 years (14%). Regarding education, 42% held a bachelor's degree, 32% had completed high school or equivalent, 19% held a diploma, and 7% held a master's or doctoral degree. Overall, the sample represents MSME owners of working age with diverse educational backgrounds and direct involvement in business management and financial decision-making.

Regarding business tenure, 38% of respondents had operated their businesses for 4–6 years, 36% for 1–3 years, and 26% for more than 6 years. The service category recorded in the respondent profile was e-wallets (48%), followed by mobile banking (30%), digital loans (16%), and other services (6%). This descriptive item records one FinTech service category per respondent and does not imply that respondents used only one service; eligibility required active use of at least one FinTech service. These respondent characteristics are relevant to the study objective of examining relationships among Perceived FinTech Innovation Characteristics, Financial Inclusion, and Financial Well-being among existing FinTech users.

Table 3. Outer Weights

Indicator	Outer Weight	T-Statistic	P-Values	VIF
FIC1	0.151	9.697	0.000	1.978
FIC2	0.168	11.935	0.000	2.469
FIC3	0.193	14.220	0.000	2.661
FIC4	0.169	12.858	0.000	2.194
FIC5	0.158	12.398	0.000	2.135
FIC6	0.068	2.769	0.000	2.290
FIC7	0.092	3.948	0.000	2.141
FIC8	0.209	9.145	0.000	2.041
FA1	0.105	8.324	0.000	1.236
FA2	0.170	9.673	0.000	1.881
FA3	0.145	7.501	0.000	1.673
FA4	0.143	7.786	0.000	2.256
FA5	0.150	10.910	0.000	2.694
FA6	0.025	3.218	0.000	1.475
FA7	0.185	9.099	0.000	1.829
FA8	0.188	11.917	0.000	2.507
FA9	0.186	9.697	0.000	2.456
FA10	0.194	11.387	0.000	1.904
FWB1	0.241	18.445	0.000	2.465
FWB2	0.216	17.937	0.000	2.027
FWB3	0.216	20.902	0.000	2.685
FWB4	0.251	18.023	0.000	2.381
FWB5	0.256	19.400	0.000	2.113

Source: Data processed (2026)

The assessment of the measurement model based on outer weights, t-statistics, p-values, and VIF results shows that all indicators contribute significantly to their respective constructs. For the higher-order formative construct of Financial Inclusion, the outer weights for all indicators (FIC1–FIC8) are positive (0.068–0.209) and statistically significant (t-values = 2.769–14.220; $p < 0.001$). These results demonstrate that the three characteristics of Usage, Access and Availability, together, contribute to the establishment of the construct Financial Inclusion. FIC8 (Availability) has the highest relative contribution indicator with an outer weight of 0.209, followed by FIC3 (0.193), FIC4 (0.169) and FIC2 (0.168), indicating that the availability of financial services and the possibility of using relevant financial facilities are important factors in the formation of financial inclusion for culinary MSMEs. Despite the outer weight for FIC6 being the lowest (0.068), it is statistically significant, captures a distinctive part of the formative construct, and so, stays theoretically important and is kept. Also, all Financial Inclusion indicators had VIF values ranging from 1.978 to 2.661, which are below the suggested threshold, showing no multicollinearity among the indicators.

All the indicators of the Perceived FinTech Innovation Characteristics construct (FA1–FA10) and the Financial Well-being construct (FWB1–FWB5) also have positive and significant outer weights ($p < 0.001$) and VIF values less than 3, showing that each indicator contributes adequately to its respective construct. Overall, these results empirically confirm that the measurement model meets the evaluation criteria of formative and reflective constructs and further support the validity and reliability of the proposed PLS-SEM model.

Table 4. Discriminant Validity

Variable	Financial Inclusion	Financial Well-being	Perceived FinTech Innovation Characteristics
Financial Inclusion	0.818		
Financial Well-being	0.016	0.849	
Perceived FinTech Innovation Characteristics	0.396	0.449	0.642

Source: Data processed (2026)

The discriminant validity of the model is confirmed as shown in Table 4, where the square root values of AVE on the diagonal for Financial Inclusion (0.818), Financial Well-being (0.849) and Perceived FinTech Innovation Characteristics (0.642) are greater than their correlations with other constructs. Such findings indicate that each construct is capturing a conceptually different phenomenon and that there is no significant overlap between the assessed constructs. The biggest association was between Perceived FinTech Innovation Characteristics and Financial Well-being ($r = 0.449$) and then between Perceived FinTech Innovation Characteristics and Financial Inclusion ($r = 0.396$). However the constructions correlation are less than the diagonal value of 0.642 which suggests acceptable construct differentiation. Meanwhile, the relationship between Financial Inclusion and Financial Well-being is quite low ($r = 0.016$) which further underscores the individualistic nature of these two concepts. However, this finding suggests that the direct relationship between Financial Inclusion and Financial Well-being can be relatively weak and needs further research through Structural Model Analysis, especially regarding potential mediating mechanisms or other intervening variables that can explain this relationship.

Table 5. Full-Collinearity Assessment for Common Method Bias (CMB)

Construct	Full-Collinearity VIF
Financial Inclusion	1.186
Financial Well-being	1.186
Perceived FinTech Innovation Characteristics	1.000

Source: Data processed (2026)

The potential presence of common method bias (CMB) was assessed using the full-collinearity assessment approach proposed by Kock (2015). This assessment was performed at the construct level by examining the full-collinearity VIF values of all latent variables in the model. As presented in Table 5, all constructs exhibited VIF values ranging from 1.000 to 1.186, which are substantially below the recommended threshold of 3.3. Therefore, the results indicate that common method bias is unlikely to affect the findings of this study.

Table 6. Coefficient of Determination (R^2)

	R Square	Adjusted R Square
Financial Inclusion	0.159	0.157
Financial Well-being	0.232	0.230

Source: Data processed (2026)

Table 6 presents the coefficient of determination (R^2). Perceived FinTech Innovation Characteristics explains 15.9% of the variance in Financial Inclusion (R^2 = 0.159; adjusted R^2 = 0.157). Perceived FinTech Innovation Characteristics and Financial Inclusion jointly explain 23.2% of the variance in Financial Well-being (R^2 = 0.232; adjusted R^2 = 0.230). The model therefore has limited explanatory power for Financial Inclusion and modest explanatory power for Financial Well-being, while still providing evidence on the proposed mechanism.

Table 7. Direct Effects with Bootstrapping

Path	β	SE	t-value	p-value	95% Bootstrap CI	Decision
Perceived FinTech Innovation Characteristics → Financial Inclusion	0.396	0.062	6.373	< 0.001	(0.270; 0.511)	H1 supported
Perceived FinTech Innovation Characteristics → Financial Well-being	0.525	0.058	9.060	< 0.001	(0.406; 0.634)	H2 supported
Financial Inclusion → Financial Well-being	0.192	0.046	2.198	< 0.001	(0.282;0.100)	H3 supported

Source: Data processed (2026)

The results of the direct effects analysis utilising the bootstrapping approach, as shown in Table 7, indicate that all hypothesised structural correlations are positive and statistically significant, thereby empirically supporting H1, H2, and H3. Perceived FinTech Innovation Characteristics has a positive and significant effect on Financial Inclusion (β = 0.396; SE = 0.062; t = 6.373; p < 0.001; 95% CI [0.270, 0.511]) which indicates that the more positive the perception of FinTech innovation characteristics, the better the individual's access to and use of financial services, such as perceived usefulness, ease of use, compatibility, and technological advantages. The confidence interval is entirely above zero, further supporting the robustness and stability of this relationship. The strongest effect in the model is between Perceived FinTech Innovation Characteristics and Financial Well-being (β = 0.525; SE = 0.058; t = 9.060; p < 0.001; 95% CI [0.406, 0.634]), suggesting that positive perceptions of FinTech innovation have a significant direct effect in improving financial well-being and a stronger effect than its effect on financial inclusion.

This outcome demonstrates that the benefits of FinTech extend beyond improving access to financial services to improving people's capacity to engage in transactions, govern their financial resources, access financial information and make more efficient financial decisions. Further, Financial Inclusion has a favourable effect on Financial Well-being (β = 0.192). However, the strength of this impact is somewhat lower than that of FinTech innovation characteristics on

financial well-being. Thus, access to and use of financial services remain crucial processes in shaping financial well-being. The coefficient patterns (β = 0.396, 0.525, and 0.192) suggest that FinTech innovation characteristics are the dominant determinant in the model. At the same time, financial inclusion serves as a supporting mechanism, explaining how access to financial services can lead to financial well-being. But the mediating role of financial inclusion should be demonstrated by evaluating the specific indirect effect using the bootstrapping approach.

Table 8. Specific Indirect Effect with Bootstrapping

Path	β	SE	t-value	p-value	95% Bootstrap CI	Decision
Perceived FinTech Innovation Characteristics → Financial Inclusion → Financial Well-being	0.076	0.020	3.831	< 0.001	(0.119; 0.040)	H4 supported

Source: Data processed (2026)

Table 8 shows the particular indirect effect analysis using the bootstrapping approach. This demonstrates that Financial Inclusion plays a mediating role in the association between Perceived FinTech Innovation Characteristics and Financial Well-being. The indirect effect is positive and statistically significant (β = 0.076; SE = 0.020; t = 3.831; p < 0.001), demonstrating that perceived FinTech innovation traits contribute to better financial well-being through increased financial inclusion. The large indirect route suggests that more acceptance and good impressions of FinTech innovation promote wider access and use of financial services, and hence enhance individuals' financial well-being. This result confirms H4 and indicates that Financial Inclusion is an important tool to translate the advantages of FinTech innovation into better financial outcomes.

As the direct effect of Perceived FinTech Innovation Characteristics on Financial Inclusion and Financial Well-being remains positive and significant, the mediation effect is in the complementary partial mediation category. This means that FinTech innovation affects financial well-being directly and indirectly through financial inclusion. However, this categorisation should be verified by the final bootstrapping confidence interval, checking that the 95% bootstrap CI for the specific indirect effect does not include zero and that both direct and indirect effects are significant and in the same direction.

Discussion

The relationship between perceived FinTech innovation characteristics and Financial Inclusion

The structural results indicate a positive relationship between Perceived FinTech Innovation Characteristics and Financial Inclusion (β = 0.396, t = 6.373, p < 0.001), supporting H1. Among MSMEs already using FinTech, more favourable perceptions of relative advantage, compatibility, ease of use, trialability, and observable benefits are associated with stronger engagement with formal financial services. This finding does not imply that the study explains whether an MSME adopts FinTech, because the sample contains only existing users. Instead, the result concerns variation in innovation perceptions and financial inclusion among adopters, consistent with evidence that digital financial services can expand financial access and use (Ozili, 2018; Demir et al., 2022; Yang & Zhang, 2022; Setiawan et al., 2025).

The five innovation characteristics capture how current users evaluate FinTech rather than actual adoption intensity. The contribution is therefore to show that favourable perceptions of innovation among existing users are associated with differences in their connection to the formal financial system. The R^2 for Financial Inclusion (0.159) indicates that these perceptions explain only part of the variation in inclusion. Financial literacy, digital capability, trust, security,

infrastructure, service cost, and product suitability may also shape access to and use of formal financial services. FinTech should therefore be treated as an enabling channel whose benefits depend on the surrounding institutional and user-capability context.

The relationship between perceived FinTech innovation characteristics and Financial Well-being

Perceived FinTech Innovation Characteristics has a strong positive association with Financial Well-being ($\beta = 0.525$, $t = 9.060$, $p < 0.001$), supporting H2. This relationship should not be interpreted as evidence that adoption itself causes financial well-being. Rather, among existing FinTech users, favourable perceptions of the services they use are associated with stronger perceived business financial condition. FinTech may facilitate payment processing, transaction management, access to financing channels, and cash-flow administration, but the cross-sectional design does not establish temporal causality.

This interpretation is broadly consistent with studies linking FinTech use and digital financial behaviour with financial well-being or related financial outcomes (Ahamed & Jafar, 2025; Anggraini et al., 2025; Budiyanto et al., 2025; Sajid et al., 2025; Shoaib et al., 2025). At the organisational level, however, Financial Well-being should be distinguished from financial performance. In the revised construct, Financial Well-being refers to the MSME's perceived ability to meet operating needs and obligations, withstand financial pressure, and respond to unexpected financial needs, rather than objective profitability, sales growth, or market performance.

The magnitude of the PFIC → Financial Well-being coefficient should be interpreted with caution because all focal constructs were measured from the same respondent and questionnaire at a single time point. The revised measurement specification reduces conceptual overlap between Financial Inclusion and Financial Well-being, while the construct-level full-collinearity assessment provides a separate sensitivity check for common method variance. Future studies should triangulate subjective assessments with objective indicators, including revenue, liquidity, cash-flow stability, arrears, debt-service capacity, and profitability.

The relationship between Financial Inclusion and Financial Well-being

Financial Inclusion positively influences Financial Well-being ($\beta = 0.192$, $t = 2.198$, $p < 0.001$), supporting H3. The theoretical direction is from Financial Inclusion to Financial Well-being: greater access to, availability of, and effective use of formal financial services may help MSMEs manage liquidity, obtain financing, meet obligations, and cope with unforeseen financial needs. The interpretation should not be reversed by claiming that higher Financial Well-being leads to greater financial inclusion.

This reasoning is consistent with literature showing that financial inclusion can reduce financial vulnerability and improve the capacity to cope with economic pressure (Koomson et al., 2020), while broader financial well-being research emphasises the importance of financial security, resilience, and the ability to meet present and future needs (Brüggen et al., 2017; Chhillar et al., 2025). In the MSME context, access alone is unlikely to be sufficient; services must also be available, usable, affordable, and appropriate to business cash flow and financing needs.

The smaller Financial Inclusion → Financial Well-being coefficient relative to the PFIC → Financial Well-being path suggests that financial inclusion represents only one pathway associated with business financial well-being. Financial management capability, digital financial literacy, credit quality, transaction efficiency, business maturity, and external market conditions may also contribute to financial resilience and perceived financial adequacy.

The mediating role of Financial Inclusion between perceived FinTech innovation characteristics and Financial Well-being

The specific indirect effect of Perceived FinTech Innovation Characteristics on Financial Well-being through Financial Inclusion is positive and statistically significant ($\beta = 0.076$, $t = 3.831$, $p < 0.001$), while the direct PFIC → Financial Well-being effect remains significant. The direction and significance of both paths are consistent with complementary partial mediation. The indirect coefficient is much smaller than the direct coefficient, indicating that most of the modelled association between PFIC and Financial Well-being operates through pathways other than Financial Inclusion.

Two pathways can therefore be distinguished. First, favourable perceptions of FinTech may be directly associated with more effective transaction processing, payment management, and financial administration. Second, these perceptions may be indirectly associated with Financial Well-being through stronger engagement with formal financial services. The mediation mechanism should be interpreted using the magnitude and uncertainty of the specific indirect effect together with the direct and total effects, rather than relying only on p-values.

The principal contribution of the revised framework is conceptual clarity. It distinguishes perceived characteristics of a FinTech innovation from actual adoption, narrows the empirical claim to existing users, treats Financial Inclusion according to its multidimensional logic, and separates business Financial Well-being from financial-service access and usage. Financial Inclusion is positioned as a bridge through which favourable perceptions of innovation may be associated with financial resilience, rather than as a mechanism that drives FinTech adoption. The modest indirect effect also suggests room for other mechanisms, including financial literacy, self-efficacy, financial management capability, and transaction efficiency.

The findings do not imply that the availability of FinTech alone guarantees better financial outcomes. Policymakers and providers should focus on an enabling digital financial ecosystem that combines accessible services with digital and financial literacy, transaction security, provider trust, transparent pricing, and products suited to MSME cash-flow patterns. For culinary MSMEs, practical support should emphasise effective use and integration of digital financial services rather than simply increasing the number of registered users.

CONCLUSIONS

This study examines FinTech-using culinary MSMEs in Greater Jakarta and focuses on Perceived FinTech Innovation Characteristics rather than actual adoption. The results show that favourable perceptions of innovation are positively associated with Financial Inclusion and business-level Financial Well-being. Thus, the way existing users evaluate the relative advantage, compatibility, complexity, trialability, and observability of FinTech is relevant to their engagement with formal financial services and their perceived financial resilience.

Financial Inclusion mediates the relationship between Perceived FinTech Innovation Characteristics and Financial Well-being. The positive and significant indirect effect, together with the significant direct effect, indicates complementary partial mediation. The indirect effect is considerably smaller than the direct effect, showing that Financial Inclusion explains part, but not most, of the association between perceptions of FinTech innovation and MSME Financial Well-being.

The theoretical contribution lies in clarifying the boundaries among the three constructs. DOI attributes are treated as perceived innovation characteristics rather than actual adoption; Financial Inclusion is treated as a multidimensional construct comprising access, availability, and usage; and business Financial Well-being is defined as subjective financial adequacy and resilience rather than financial-service access or objective financial performance. This clearer separation is essential for interpreting the mediation mechanism without conceptual circularity.

In practice, access to technology alone is insufficient. Governments, financial institutions, and FinTech providers should support an inclusive, secure, transparent, affordable, and MSME-oriented digital financial ecosystem. Capacity-building should strengthen digital and financial literacy so that business owners can select, evaluate, and use digital financial services effectively. Providers should design products that are easy to understand and aligned with the transaction patterns, liquidity cycles, and financing needs of MSMEs.

Several limitations should be acknowledged. First, the sample includes only existing FinTech users, so the findings cannot explain the transition from non-adoption to adoption and should be generalised only to FinTech-using culinary MSMEs in Greater Jakarta. Second, the study is cross-sectional and therefore cannot establish temporal causality. Third, all focal variables were self-reported by the same MSME owner in the same questionnaire, creating a residual risk of common method variance despite procedural and statistical checks. Fourth, the organisational Financial Well-being construct remains perception-based and should be triangulated with objective measures in future research, such as revenue, liquidity, cash-flow stability, arrears, debt-service capability, and profitability. Future studies should include non-users, recent adopters, and established users; use longitudinal or mixed-methods designs; and examine digital financial literacy, financial self-efficacy, financial management capability, trust, and service quality as additional mechanisms.

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