

REALIZING FINANCIAL INCLUSION IN THE MEDAN AREA SUBDISTRICT: THE ROLE OF FINANCIAL WELL-BEING, FINANCIAL LITERACY, AND INCOME WITHIN A SOCIO-CULTURAL FRAMEWORK

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Abstract

The objective of this study is to examine and analyze the influence of financial well-being, financial literacy, and income on financial inclusion, as well as to assess the moderating role of socio-cultural factors in these relationships. A quantitative research approach was employed using a survey method. The study population consisted of individuals of productive age residing in the Medan Area Subdistrict. A purposive sample of 100 respondents was drawn from two urban villages with distinct socio-economic characteristics. Data were collected through a structured questionnaire and analyzed using SmartPLS 4.0 software. The findings reveal that financial well-being, financial literacy, and income significantly influence financial inclusion. Socio-cultural factors also exert a direct and significant impact on financial inclusion. However, when tested as a moderating variable, socio-cultural factors were found to significantly moderate only the relationship between financial well-being and financial inclusion. In contrast, no significant moderating effects were observed in the relationships between financial literacy and income with financial inclusion. These results highlight that economic participation in formal financial systems is shaped not only by individual financial conditions but also by the cultural values embedded within the community.

Keywords: *Financial Well-Being, Financial Literacy, Income, Financial Inclusion, Socio-Cultural Factors.*

INTRODUCTION

Financial inclusion is a fundamental pillar of equitable and sustainable economic development. It refers to the condition in which all members of society, regardless of their socioeconomic background, have access to formal financial services that are safe, affordable, of high quality, and tailored to their specific needs. These services include savings, credit, insurance, and other financial instruments that are essential for improving individuals' economic and social well-being. Inclusive access to financial services not only helps reduce poverty and income inequality but also enhances resilience to economic shocks and encourages participation in formal economic activities. As such, financial inclusion serves as a key mechanism for fostering more inclusive and balanced economic growth.

The World Bank (2019) underscores that access to formal financial services enables individuals to plan for the future, manage financial risks, and invest in long-term goals. In response to these challenges and opportunities, the Indonesian government has demonstrated a strong commitment to advancing financial inclusion through the establishment of the National Strategy for Financial Inclusion (SNLIK, 2017), as outlined in Presidential Regulation No. 114 of 2020. Several strategic programs have been launched, including Laku Pandai, which delivers branchless banking services, and QRIS (Quick Response Code Indonesian Standard), a unified digital payment system developed by Bank Indonesia. These initiatives aim to reach underserved populations, especially in remote areas, while simultaneously enhancing public financial literacy.

Literature in the field highlights that financial inclusion is shaped by a complex interplay of multiple factors. Simatele et al. (2021) identified seven key determinants: financial literacy, income, socio-cultural influences, service availability, regulatory frameworks, technological access, and product quality. Additionally, accessibility, affordability, and usage intensity have emerged as critical components that influence the effectiveness of financial inclusion initiatives. Recently, financial well-being has also gained recognition as a crucial factor—not only as an outcome of financial inclusion, but also as a driving force for individuals to engage with the formal financial system. Individuals who demonstrate financial stability, such as having emergency savings or a structured budget, tend to be more confident and proactive in using financial services like savings accounts, credit, or investment instruments.

Medan Area Subdistrict, a densely populated urban region in Medan City, exhibits a distinct socio-cultural landscape. With an area of 4.24 square kilometers, it consists of 12 urban villages inhabited by ethnically diverse populations, including Batak, Malay, Chinese, and Minangkabau communities. The local economy is largely driven by trade and service sectors, particularly the rapidly growing culinary MSME industry. The subdistrict is equipped with adequate infrastructure in education, healthcare, and economic activity, making it a central hub for multiethnic interactions. Despite its strong economic potential, the level of digital financial adoption, such as the use of QRIS, remains suboptimal. A study by Ikhsan (2022) found that while awareness of QRIS is relatively high, cash transactions still dominate daily financial behavior. This suggests that non-economic factors—such as cultural values and social norms—may influence financial decisions more significantly than is often assumed.

Socio-cultural factors play a crucial role in shaping community perceptions and behaviors regarding money management, debt, saving, and the use of financial technology. In certain ethnic groups, traditional financial practices and communal support systems remain prevalent. For example, the Batak tradition of *Martumpol*, observed in wedding ceremonies, reflects a collective approach to financial responsibility within the community (Maria et al., 2024). These cultural values can function either as enablers or barriers to financial inclusion. Although numerous studies have examined the relationships between financial literacy, income, and financial well-being with financial inclusion, few have explored how socio-cultural factors may moderate these relationships in a single integrative model. Therefore, this study seeks to address this gap by investigating the effects of financial well-being, financial literacy, and income on financial inclusion, while also testing the moderating role of socio-cultural factors in the context of Medan Area Subdistrict. The findings are expected to contribute both theoretically and practically to the formulation of inclusive financial strategies that are culturally grounded and locally relevant.

LITERATURE REVIEW

Financial Inclusion

Financial inclusion refers to a condition where individuals and businesses, particularly those from underserved or disadvantaged groups, have equitable, affordable, and sustained access to formal financial services such as savings accounts, credit, insurance, and other financial instruments (Akyuwen & Waskito, 2018; Simatele et al., 2021). It encompasses not only the ownership of a bank account but also active and consistent engagement with the financial system that enables individuals to manage their finances, build assets, and enhance their overall well-being. The goal of financial inclusion is to eliminate structural and social barriers that limit financial access and ensure that all segments of society can utilize financial services effectively. The success of financial inclusion is influenced by several interrelated determinants. According to Simatele et al. (2021), seven major factors play a role: financial literacy, income, socio-cultural influences, service availability, government regulation, technological access, and the quality of financial products. Nurlina & Paramitha (2024) further identify key supporting variables, including financial well-being, accessibility, affordability, and usage. Financial literacy and well-being serve as foundational components that empower individuals to understand and confidently engage with financial services, while income and digital access determine the extent of their ability to participate in the formal financial system. Financial inclusion offers broad socioeconomic benefits, ranging from poverty reduction and increased financial stability to the empowerment of marginalized groups. Moreover, an inclusive financial system fosters economic efficiency, promotes innovation, and broadens the customer base of the formal financial sector (Akyuwen & Waskito, 2018; Simatele et al., 2021). Indicators used to measure financial inclusion include access to financial services, frequency and quality of usage, client engagement with financial institutions, and financial resilience. As such, financial inclusion is not merely an economic tool but a strategic instrument for achieving social equity and societal transformation.

Financial Well-being

Financial well-being refers to a stable condition in which individuals are capable of managing their income, assets, and expenses effectively to meet present and future needs, while achieving a sense of security and financial satisfaction (Arianti, 2021; Wahyuni et al., 2024). This concept goes beyond merely covering necessities; it also involves saving for the future, making informed financial decisions, and maintaining a balanced quality of life (Asari et al., 2023; Widhiastuti, 2024). Financial well-being thus reflects an individual's ability to manage money confidently, based on financial knowledge and practical skills. Several factors influence financial well-being, including education level, income, employment status, financial behavior, and financial literacy (Asari et al., 2023; Widhiastuti, 2024). Socio-cultural norms, such as saving habits and communal financial practices, also play a role in shaping individuals' financial decision-making. Strong financial literacy empowers individuals to set realistic

goals, create budgets, and manage financial risks through emergency funds and insurance. Strategic steps toward achieving financial well-being involve comprehensive financial planning, responsible debt management, increased financial literacy, regular saving, and appropriate investment. Indicators of financial well-being include the ability to meet essential needs, make sound financial decisions, plan for long-term goals, and maintain financial resilience through risk mitigation (Asari et al., 2023; Widhiastuti, 2024). Overall, financial well-being is not merely a financial outcome, but a reflection of disciplined and informed financial behavior.

Financial Literacy

Financial literacy refers to an individual's capacity to understand, manage, and make informed decisions regarding their personal finances. This includes budgeting, saving, investing, and protecting one's financial resources (Gunawan et al., 2020; Putri & Siregar, 2022). A financially literate person is better equipped to handle unexpected financial shocks and plan for long-term financial goals with greater confidence and discipline (Wahyuni et al., 2023). Several interrelated factors influence financial literacy, such as financial behavior, demographic characteristics (age, gender, education, income), lifestyle patterns, and foundational knowledge of financial principles (Choerudin et al., 2023; Gunawan & Chairani, 2019). Education and income enhance analytical capabilities and access to financial services, while psychological traits and spending habits can either support or hinder responsible financial practices. The benefits of financial literacy are far-reaching. It fosters the ability to manage income and expenses wisely, avoid excessive debt, and prepare for a more secure financial future (Apriliani, 2024). Key indicators include basic financial knowledge, financial management skills, sound financial behavior, rational decision-making, and awareness of financial products and services (Selvi, 2018; Apriliani, 2024). Ultimately, financial literacy enables individuals to engage meaningfully in formal financial systems and contributes to overall economic resilience.

Income

Income is the result obtained by an individual from various sources such as employment, business, and investments, which are used to meet living needs and increase wealth (Siregar & Simatupang, 2022; Brooks, 2018; Astuti & Putra, 2024). Income includes active earnings, such as salaries or wages, and passive income, such as returns from investments or property rental (Ervina et al., 2022). Income is influenced by various factors, including type of job or business, financial status, financial literacy, education level, as well as experience and ability in investing and financial planning (Astuti & Putra, 2024; Siregar et al., 2023). Both active and passive income play roles in determining a person's income level, where these two types complement each other to create financial security. Income plays a vital role in improving family financial well-being, supporting financial stability, and enabling long-term financial planning (Astuti & Putra, 2024; Brooks, 2018). Income indicators include the source and type of income (active and passive), the continuity of income flow, and its contribution to fulfilling basic needs, saving, investing, and achieving economic independence (Astuti & Putra, 2024; Brooks, 2018).

Socio-Cultural Factors

Socio-cultural factors refer to aspects of community life that include values, norms, customs, beliefs, and collective creations influencing individuals' mindset and behavior in daily life (Syawaludin, 2017; Castanho et al., 2020; Curry et al., 2021). These factors shape how societies live and make decisions, including financial matters. Socio-cultural influences include local norms and culture, education level and financial literacy, trust in financial institutions, social and economic structure, and the advancement of technology and financial modernization (Syawaludin, 2017; Curry et al., 2021). Socio-cultural factors play a role in building trust towards financial institutions, shaping cultural values that affect financial behavior, increasing community participation in decision-making, and adapting external cultural influences in financial practices (Nawangsih et al., 2024; Curry et al., 2021). Indicators include social identity and status, traditional values and practices, gender relations, community participation, and kinship structures that influence decisions and access to financial services (Syawaludin, 2017; Curry et al., 2021).

Theoretical framework

The Influence of Financial Well-being on Financial Inclusion

Financial well-being refers to an individual's ability to meet current and future financial needs while withstanding economic risks without compromising basic necessities. This condition reflects stability in personal financial management and enhances an individual's control over economic decisions. Individuals with good financial well-being tend to have greater confidence in accessing and utilizing formal financial services such as opening bank

accounts, applying for credit, and investing, thereby increasing financial inclusion and strengthening long-term financial security (Adam et al., 2021). Studies by (Asari et al., 2023), (Widhiastuti, 2024), and (Rashid et al., 2022) demonstrate a significant impact of financial well-being on financial inclusion. Their findings suggest that individuals with higher levels of financial well-being are more active and confident in participating in formal financial systems.

H1: Financial Well-Being has a significant influence on Financial Inclusion.

The Influence of Financial Literacy on Financial Inclusion

Financial literacy plays a crucial role in shaping individual financial behavior. A deep understanding of financial concepts, risk management, and financial decision-making encourages active participation in formal financial systems. Individuals with good financial literacy can manage their finances effectively, avoid excessive debt and financial fraud. They also comprehend the benefits and risks of financial products, the importance of diversification, and long-term planning, enabling them to build a strong financial foundation and achieve sustainable financial well-being (Gunawan et al., 2023). Studies by (Choerudin et al., 2023), (Apriliani, 2024), and (Hamdi et al., 2023) confirm a significant influence of financial literacy on financial inclusion. Their research indicates that individuals with higher financial literacy levels tend to be more active and confident in utilizing formal financial services.

H2: Financial Literacy has a significant influence on Financial Inclusion.

The Influence of Income on Financial Inclusion

Income is a fundamental factor influencing an individual's participation in formal financial systems. Adequate income allows fulfillment of basic needs while allocating funds for savings and investments. Income stability provides financial security in decision-making, such as saving and utilizing banking services. Higher income also increases access to more sophisticated financial products, thereby broadening overall financial inclusion (Inoue, 2024). Studies by Budiasni & Ferayani (2023), Park & Mercado (2015), and Yuliani (2021) confirm a significant impact of income on financial inclusion. Individuals with stable and sufficient income tend to be more actively engaged in formal financial services.

H3: Income has a significant influence on Financial Inclusion.

The Influence of Socio-Cultural Factors on Financial Inclusion

Socio-cultural factors significantly shape financial inclusion by influencing community behaviors and preferences toward formal financial services. Cultural values, social norms, and the degree of trust in financial institutions affect how individuals perceive and engage with formal financial systems. In many communities, financial decisions are driven not only by economic reasoning but also by traditional practices, social relationships, and belief systems (Demirgüç-Kunt et al., 2017). Studies by (Allen et al., 2016), (Fungáčová & Weill, 2015), and (Christiaan & Wong, 2025) confirm that socio-cultural factors play a significant role in determining financial inclusion. These findings emphasize that policies promoting financial inclusion must account for cultural contexts and work to build institutional trust within the target communities.

H4: Socio-Cultural Factors has a significant influence on Financial Inclusion.

The Influence of Financial Well-Being on Financial Inclusion Moderated by Socio-Cultural Factors

Financial well-being does not automatically lead to financial inclusion, as its impact is highly contingent on the socio-cultural environment. Socio-cultural factors function as moderating variables that can either enhance or diminish the relationship between financial well-being and participation in the formal financial system. Cultural norms, values, and social practices shape individuals' attitudes and behaviors toward financial services (Brüggen et al., 2017). In cultures that promote formal financial practices, financial well-being is more likely to lead to greater inclusion. In contrast, in communities that rely on informal financial systems, even individuals with financial stability may exhibit low participation in formal financial structures. Empirical studies by (Hassan et al., 2021), (Rashid et al., 2022), and (Suh & James, 2023) confirm that socio-cultural factors significantly moderate the impact of financial well-being on financial inclusion. In culturally supportive environments, financial well-being has a stronger influence on participation in formal financial services, whereas in culturally resistant settings, its impact is comparatively weaker.

H5: Socio-Cultural moderates the influence of Financial Well-Being on Financial Inclusion

The Influence of Financial Literacy on Financial Inclusion Moderated by Socio-Cultural Factors

The relationship between financial literacy and financial inclusion is inherently shaped by the socio-cultural context in which financial knowledge is applied. Socio-cultural factors act as moderating variables that influence how effectively individuals can leverage their financial knowledge to engage with formal financial systems. Cultural values, norms, and community practices strongly dictate how individuals interpret and utilize financial information (Grohmann et al., 2018). In supportive environments where financial education is encouraged and trust in formal institutions is high, the impact of financial literacy on inclusion tends to be more pronounced. Conversely, in communities that rely on informal systems or harbor mistrust toward formal institutions, the effect of financial literacy may be limited. Empirical studies by (Philippas & Avdoulas, 2019), (Hamdi et al., 2023), and (Preez & Ferreira-Schenk, 2024) confirm that socio-cultural contexts significantly moderate the impact of financial literacy on financial inclusion. In culturally supportive settings, financial literacy leads to greater participation in formal financial services, while in culturally constrained environments, its effect is notably diminished.

H6: Socio-Cultural moderates the influence of Financial Literacy on Financial Inclusion

The Influence of Income on Financial Inclusion Moderated by Socio-Cultural Factors

Income is a key driver of financial inclusion, as higher income typically allows individuals to access and utilize formal financial services. However, this relationship is not universal and may be moderated by socio-cultural conditions. In communities with strong trust in formal financial institutions and widespread financial awareness, increased income tends to correlate positively with formal financial participation. Conversely, in societies that rely on informal finance or where distrust of financial institutions prevails, the effect of income on financial inclusion may be significantly reduced (Fungáčová & Weill, 2015). Empirical evidence from (Park & Mercado, 2015), (Jannah et al., 2023), and (Astuti & Putra, 2024) supports the notion that socio-cultural factors moderate the relationship between income and financial inclusion. In culturally supportive settings, income facilitates broader financial engagement, while in contexts characterized by traditional financial norms or institutional distrust, the effect of income on inclusion weakens considerably.

H7: Socio-Cultural moderates the influence of Income on Financial Inclusion

Based on the previous explanation and past studies, the conceptual framework in this study is as follows:

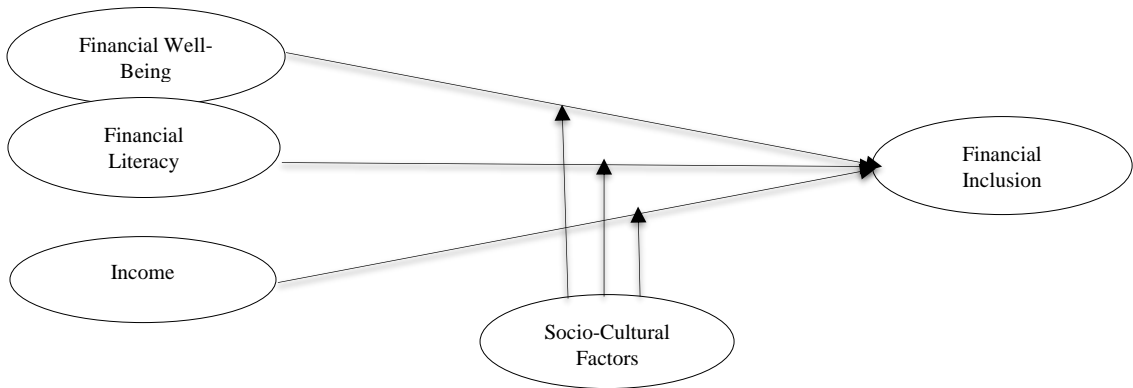


Figure 1 Research Concept Framework Drawing

METHOD

This study employs a quantitative approach with an associative causal design to examine the relationship between financial well-being, financial literacy, and income (independent variables) on financial inclusion (dependent variable), moderated by socio-cultural factors. Operational definitions are outlined through specific indicators for each variable. The research is conducted in Medan Area District, North Sumatra, from November 2024 to March 2025. The population consists of 116,714 residents, with a sample of 100 respondents selected using accidental sampling and Slovin's formula. Two subdistricts—Kota Matsum I and Sei Rengas Permata—are purposively chosen to reflect population density and financial service accessibility. Sampling is proportionally distributed. Data are collected using a Likert-scale questionnaire. Analysis employs Partial Least Square–Structural Equation Modeling (PLS-SEM) using SmartPLS version 4. The analytical process consists of two stages: the outer model (for testing validity and reliability) and the inner model (for hypothesis testing, R-square, and F-square).

RESULTS AND DISCUSSION

Result

Description of Research Variables and Respondent Characteristics

This study examines five primary variables: financial well-being, financial literacy, income, financial inclusion, and socio-cultural factors, each measured through a Likert-scale questionnaire. The instrument consisted of 10 items for X1 (financial well-being), 8 items for X2 (financial literacy), 8 items for X3 (income), 10 items for Y (financial inclusion), and 10 items for Z (socio-cultural factors). Questionnaires were distributed to 100 respondents in the Medan Area District, evenly divided between Kelurahan Sei Rengas Permata and Kota Matsum I.

Based on demographic characteristics, the majority of respondents were male (53%) and predominantly aged between 18–25 years (40%). Most respondents worked as entrepreneurs, employees, or were students and unemployed individuals. In terms of income, over half of the respondents did not have a stable and regular source of earnings. Generally, respondents' levels of financial literacy and well-being were in the moderate to low category, with limited socio-cultural engagement in financial decision-making. These findings indicate that financial inclusion in the region is shaped by a complex interplay of both internal and external factors.

Data Analysis

This research applies data analysis using Structural Equation Modeling (SEM) with the aid of SmartPLS software (Partial Least Squares). The SmartPLS method involves two key components: the measurement model (outer model), which assesses the validity and reliability of the indicators in representing their respective latent constructs, and the structural model (inner model), which examines the causal relationships among latent variables in the overall framework.

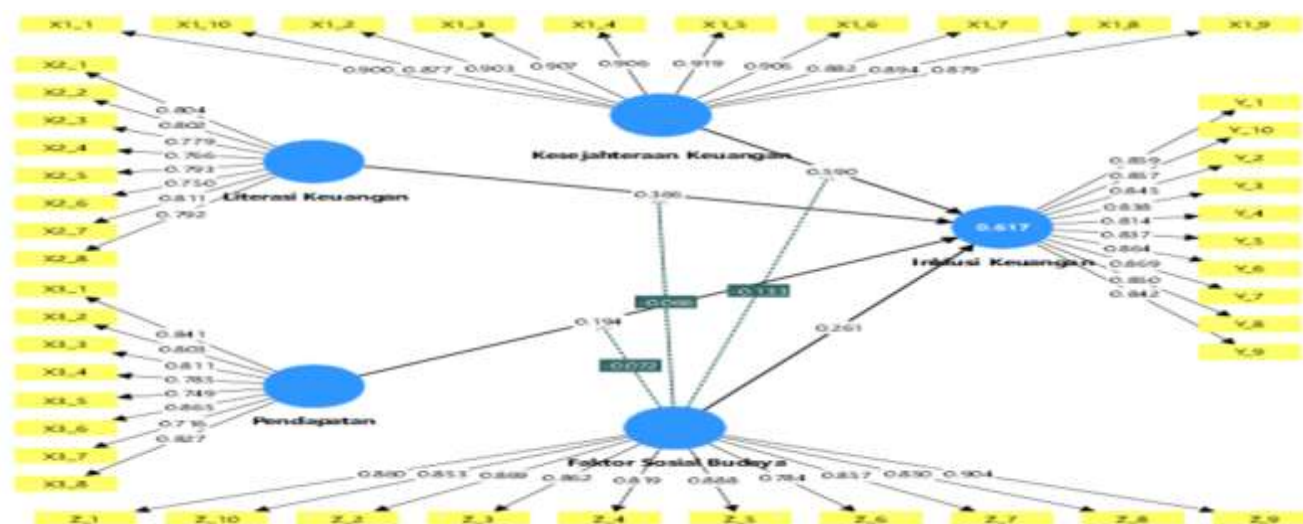


Figure 2 Standardized Loading Factor and Outer Model

Source: Processed from research data, 2025

As illustrated in the previous figure, no indicators were eliminated since all loading values exceeded 0.5. This indicates that each indicator—pertaining to financial well-being, financial literacy, income, financial inclusion, and socio-cultural factors—adequately explains its corresponding latent variable.

Outer Model Analysis

The outer model analysis aims to assess the validity and reliability of indicators in measuring latent constructs. This evaluation involves three main steps: convergent validity, construct reliability and validity, and discriminant validity (Setiabudhi et al., 2025).

Convergent Validity

Convergent validity assesses the consistency of indicators in representing the intended construct. Indicators are considered to have good convergent validity if their outer loading values exceed 0.70 (Setiabudhi et al., 2025).

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Table 1 Convergent Validity

	X1. Finansial Well-Being	X2. Finansial Literacy	X3. Income	Y. Finansial Inclusion	Z. Socio-Cultural Factors
X1.1	0.900				
X1.2	0.877				
X1.3	0.903				
X1.4	0.907				
X1.5	0.906				
X1.6	0.919				
X1.7	0.906				
X1.8	0.882				
X1.9	0.894				
X1.10	0.879				
X2.1		0.804			
X2.2		0.802			
X2.3		0.779			
X2.4		0.766			
X2.5		0.793			
X2.6		0.750			
X2.7		0.811			
X2.8		0.792			
X3.1			0.841		
X3.2			0.803		
X3.3			0.811		
X3.4			0.785		
X3.5			0.749		
X3.6			0.865		
X3.7			0.716		
X3.8			0.827		
Y.1				0.859	
Y.2				0.857	
Y.3				0.845	
Y.4				0.838	
Y.5				0.814	
Y.6				0.837	
Y.7				0.864	
Y.8				0.869	
Y.9				0.850	
Y.10				0.842	
Z.1					0.860
Z.2					0.853
Z.3					0.869
Z.4					0.862
Z.5					0.819
Z.6					0.888
Z.7					0.784
Z.8					0.857
Z.9					0.850
Z.10					0.904

Source: Processed from research data, 2025

Based on Table 1, all indicators across the variables in this study exhibit loading values greater than 0.70, indicating that they meet the criteria for convergent validity. The details are as follows:

1. All indicators for the *financial well-being* variable have outer loading values exceeding 0.70, confirming their validity in representing the corresponding construct.
2. Indicators for *financial literacy* also demonstrate outer loading values above 0.70, indicating their suitability for measuring this construct.
3. Every indicator related to the *income* variable shows loading values above the 0.70 threshold, which signifies their effectiveness in reflecting income.
4. For the *financial inclusion* variable, all indicators report outer loadings above 0.70, supporting their validity in measuring this concept accurately.
5. Similarly, indicators for *socio-cultural factors* yield outer loading values exceeding 0.70, validating their role in explaining the socio-cultural construct.

Thus, all indicators make a strong and meaningful contribution to their respective latent variables, ensuring that the model satisfies the requirements of convergent validity.

Construct Reliability and Validity

The construct reliability test assesses the internal consistency of indicators within a variable. Three metrics are used in this evaluation: Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). A construct is considered reliable if both Cronbach's Alpha and CR exceed 0.60, and AVE is greater than 0.50 (Setiabudhi et al., 2025).

Table 2 Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Reliabilitas Komposit	Average Variance Extracted (AVE)
X1. Finansial Well-Being	0.973	0.977	0.976	0.805
X2. Finansial Literacy	0.913	0.927	0.929	0.620
X3. Income	0.920	0.928	0.935	0.642
Y. Finansial Inclusion	0.956	0.958	0.962	0.718
Z. Socio-Cultural Factors	0.959	0.978	0.965	0.731

Source: Processed from research data, 2025

As presented in Table 2, all latent constructs in the model demonstrate satisfactory reliability and validity. The Financial Well-Being variable achieved a Composite Reliability score of 0.976 and an AVE of 0.805, indicating excellent internal consistency and strong construct validity. Similarly, Financial Literacy shows acceptable reliability with a Composite Reliability of 0.929 and AVE of 0.620. The Income variable yielded values of 0.935 (Composite Reliability) and 0.642 (AVE), reflecting good internal consistency and adequate validity. The Financial Inclusion construct recorded a Composite Reliability of 0.962 and AVE of 0.718, while the Socio-Cultural Factors variable reported 0.965 and 0.731, respectively—both indicating strong and consistent measurement of their latent constructs.

Discriminant Validity

Discriminant validity serves to confirm that each construct within the model captures a distinct conceptual domain and does not overlap with other latent variables. In this study, the discriminant validity assessment employed the *Heterotrait-Monotrait Ratio* (HTMT), as recommended by Henseler et al., (2015). HTMT is considered a more reliable measure compared to traditional methods like cross-loading and the Fornell-Larcker criterion, as it offers a more precise evaluation of construct distinctiveness. According to Henseler et al., (2015), a construct satisfies the criteria for discriminant validity if the HTMT value between constructs does not exceed 0.85 for conceptually distinct constructs, or 0.90 for constructs with conceptual similarity. The HTMT results in this study show that all inter-construct values are below the recommended thresholds. Therefore, it can be concluded that each construct in the model is conceptually distinct and measures a unique aspect.

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	X1. Finansial Well-Being	X2. Finansial Literacy	X3. Income	Y. Finansial Inclusion	Z. Socio-Cultural Factors
X1. Finansial Well-Being					
X2. Finansial Literacy	0.108				
X3. Income	0.093	0.097			
Y. Finansial Inclusion	0.564	0.397	0.303		
Z. Socio-Cultural Factors	0.127	0.100	0.292	0.251	

Source: Processed from research data, 2025

Based on the data analysis, all HTMT values between constructs in this model fall below the 0.85 threshold, as recommended by (Henseler et al., 2015). This indicates that each construct demonstrates satisfactory discriminant validity and is empirically distinct from the others. For instance, the HTMT value between Financial Well-Being (X1) and Financial Literacy (X2) is 0.108, and between X1 and Income (X3) is 0.093—both notably low and indicating strong discriminant separation. Similarly, the HTMT values for other construct pairs, such as X1 and Y (0.564), X2 and Z (0.100), and Y and Z (0.251), remain well below the maximum threshold. Thus, it can be concluded that no measurement overlap occurs between constructs. Each latent variable is conceptually and empirically distinct, thereby confirming the overall discriminant validity of the model (Henseler et al., 2015)

Inner Model Analysis

R-Square

The R-square value is utilized to assess the extent to which exogenous variables can explain the variance in endogenous constructs within the structural model. A higher R-square indicates stronger predictive power of the model in capturing the variance of the dependent variables. In this study, data processing using SmartPLS version 4 yielded R-square values that reflect the model's explanatory capacity regarding the relationships among latent constructs (Setiabudhi et al., 2025).

Table 3 R-Square

	R-Square	R-Square Adjusted
Y. Finansial Inclusion	0.617	0.588

Source: Processed from research data, 2025

As presented in Table 3, the R-square value of 0.617 indicates that the independent variables—financial well-being (X1), financial literacy (X2), income (X3), and socio-cultural factors (Z)—collectively explain 61.7% of the variance in financial inclusion (Y). The remaining 38.3% is attributed to other variables not included in the current model. The Adjusted R-Square value of 0.588 reflects a correction for the number of predictors and remains within a strong explanatory range, as it exceeds the threshold of 0.50. This confirms that the model possesses a robust predictive capacity regarding financial inclusion as the endogenous variable.

F-Square Value

The F-square metric is applied to assess the extent to which each exogenous construct contributes to the variance of the endogenous construct in the structural model. It serves as an indicator of the relative impact of each independent variable on the dependent variable (Setiabudhi et al., 2025). The F-square values derived from the SmartPLS 4 analysis are summarized in the following table.

Table 4 F-Square

	X1. Finansial Well-Being	X2. Finansial Literacy	X3. Income	Y. Finansial Inclusion	Z. Socio-Cultural Factors
X1. Finansial Well-Being				0.873	
X2. Finansial Literacy				0.347	
X3. Income				0.084	
Y. Finansial Inclusion					
Z. Socio-Cultural Factors				0.146	

Source: Processed from research data, 2025

Based on Table 4, it can be concluded that the impact of the variables on financial inclusion varies in strength. Financial well-being exhibits a large effect on financial inclusion with an F^2 value of 0.873, indicating a strong influence. Financial literacy shows a moderate effect with an F^2 value of 0.347. Meanwhile, income and socio-cultural factors each exert a small effect on financial inclusion, with F^2 values of 0.084 and 0.146, respectively.

Hypothesis

The purpose of hypothesis testing in this study is to verify the significance of path coefficients within the structural model, encompassing both direct and moderating effects. This process assesses whether the proposed relationships among variables are statistically significant. The results of hypothesis testing for direct and moderating effects are presented in the following figure, derived from data processed with SmartPLS 4.0.

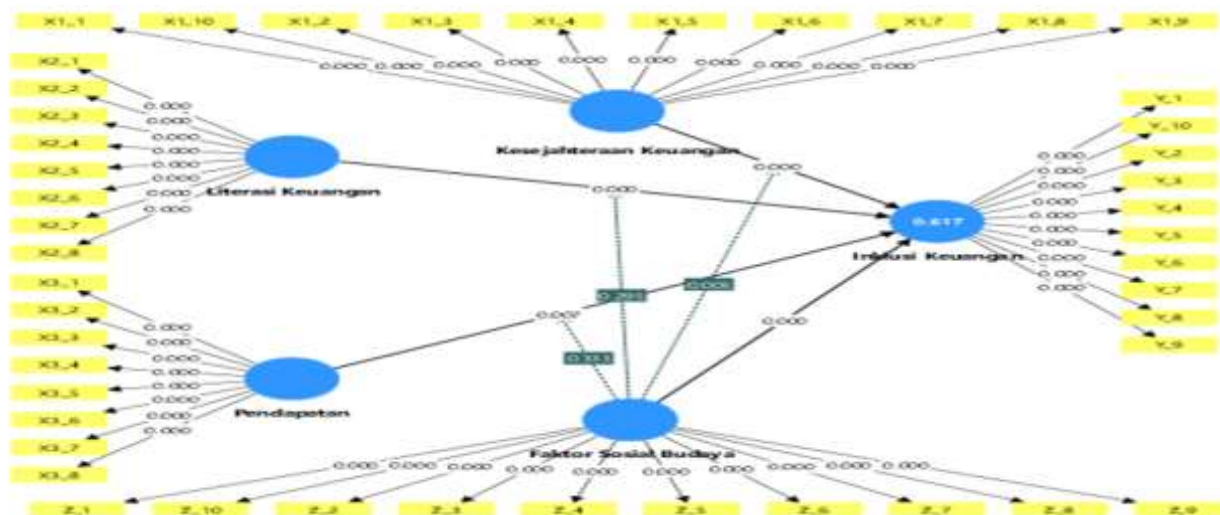


Figure 3 Hypothesis

Source: Processed from research data, 2025

Direct Effect

The hypothesis test for direct effects is presented in the following table, which displays the results of the significance analysis of relationships between variables in the research model.

Table 5 Direct Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
X1. Financial Well-Being → Y. Financial Inclusion	0.590	0.587	0.062	9.566	0.000
X2. Financial Literacy → Y. Financial Inclusion	0.366	0.366	0.067	5.468	0.000
X3. Income → Y. Financial Inclusion	0.194	0.196	0.072	2.703	0.007
Z. Social-Cultural Factors → Y. Financial Inclusion	0.261	0.260	0.067	3.891	0.000

Source: Processed from research data, 2025

Based on Table 5, the hypothesis testing results indicate that:

1. Financial well-being has a significant positive effect on financial inclusion, with a path coefficient of 0.590 and a p-value of 0.000 (<0.05), signifying a statistically significant impact in the Medan Area community.
2. Financial literacy also significantly influences financial inclusion, with a path coefficient of 0.366 and a p-value of 0.000 (<0.05), underscoring the important role of financial literacy in enhancing financial inclusion.
3. Income shows a significant effect on financial inclusion with a path coefficient of 0.194 and a p-value of 0.007 (<0.05), indicating a meaningful but relatively smaller influence compared to other variables.
4. The socio-cultural factor exerts a significant impact on financial inclusion, evidenced by a path coefficient of 0.261 and a p-value of 0.000 (<0.05), highlighting that social and cultural aspects also affect financial inclusion in the area.

Moderation Hypothesis Testing (Interaction Effect)

The results of the moderation hypothesis test can be seen in the following table:

Table 6 Interaction Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Socio-Cultural Factors x Financial Well-Being → Financial Inclusion	-0.133	-0.134	0.047	2.821	0.005
Socio-Cultural Factors x Financial Literacy → Financial Inclusion	-0.066	-0.064	0.063	1.048	0.295
Socio-Cultural Factors x Income → Financial Inclusion	-0.072	-0.066	0.074	0.969	0.333

Source: Processed from research data, 2025

Based on Table 4.16, the hypothesis testing results indicate:

1. The interaction between socio-cultural factors and financial well-being has a significant effect on financial inclusion, with a path coefficient of -0.133 and a p-value of 0.005 (<0.05). This implies that the interaction between these two variables significantly influences financial inclusion in the Medan Area community.
2. The interaction between socio-cultural factors and financial literacy has a path coefficient of -0.066 and a p-value of 0.295 (>0.05), indicating that this interaction does not significantly affect financial inclusion in the studied population.
3. The interaction between socio-cultural factors and income shows a path coefficient of -0.072 with a p-value of 0.333 (>0.05), suggesting that this interaction has no significant impact on financial inclusion among the Medan Area community.

Discussion

The Influence of Financial Well-being on Financial Inclusion

The hypothesis testing results show a path coefficient of 0.590 for the effect of financial well-being on financial inclusion, with a p-value of 0.000, which is less than 0.05. The t-statistic value of 9.566 exceeds the critical t-value of 1.985 with 94 degrees of freedom at a 5% significance level (two-tailed test). This indicates that financial well-being significantly influences financial inclusion among the community in Medan Area District. Financial well-

being reflects an individual's ability to manage finances effectively, including meeting basic needs, saving, and planning for long-term financial goals. A stable financial condition enhances individuals' confidence in accessing and utilizing formal financial services such as bank accounts, QRIS, and insurance. Improved financial well-being also strengthens motivation to engage in modern financial systems, as individuals feel more in control of their expenditures and capable of setting aside funds for other needs. In this context, financial inclusion depends not only on access but also on individuals' readiness and comfort in utilizing financial services. This aligns with the findings of (Asari et al., 2023), (Widhiastuti, 2024), and (Arianti, 2021), who reported a significant effect of financial well-being on financial inclusion.

The Influence of Financial Literacy on Financial Inclusion

The hypothesis testing results reveal that financial literacy has a path coefficient of 0.366 with a p-value of 0.000, which is below the significance threshold of 0.05. The t-statistic value of 5.468 exceeds the critical t-value of 1.985 with 94 degrees of freedom at a 5% significance level (two-tailed test). Thus, it can be concluded that financial literacy significantly affects financial inclusion in the Medan Area community. This finding implies that an individual's use of formal financial services increases with their level of financial knowledge and management skills. People who understand basic financial concepts such as savings, loans, interest rates, and financial risks tend to feel more secure and confident when using financial products like QRIS, bank accounts, and e-wallets. Although financial knowledge does not always directly translate into action, in this context, improved financial literacy has been shown to encourage more active participation in available financial services. This underscores the importance of financial education as a key tool for enhancing comprehensive financial inclusion. These conclusions align with the findings of (Choerudin et al., 2023), (Apriliani, 2024), and (Selvi, 2018), who assert that financial literacy has a significant impact on financial inclusion.

The Influence of Income on Financial Inclusion

Based on the hypothesis testing results, the path coefficient of income's effect on financial inclusion is 0.194 with a p-value of 0.007, which is below the 0.05 significance level. The t-statistic value of 2.703 exceeds the critical t-value of 1.985 with 94 degrees of freedom at a 5% significance level (two-tailed test). This indicates that income significantly influences financial inclusion among the community in Medan Area. A stable and adequate income enables individuals to allocate funds for savings, investments, and access to digital financial services more effectively. Conversely, those with limited income tend to prioritize basic needs and are less inclined to use formal financial services perceived as less urgent. The influence of income on financial inclusion highlights the crucial role of purchasing power in driving financial participation. The higher an individual's income, the greater their capacity to access and utilize diverse financial products. This finding aligns with studies by (Budiasni & Ferayani, 2023), (Park & Mercado, 2015), and (Yuliani, 2021), which confirm that income significantly impacts financial inclusion.

The Influence of Social-Cultural Factors on Financial Inclusion

Based on hypothesis testing, the path coefficient for the effect of socio-cultural factors on financial inclusion is 0.261, with a p-value of 0.000, which is less than the significance threshold of 0.05. The t-statistic value of 3.891 exceeds the critical t-value of 1.985, with 94 degrees of freedom and a 5% significance level (two-tailed test). This indicates that socio-cultural factors have a significant influence on financial inclusion in the community. Socio-cultural elements such as social norms, community values, and trust in financial institutions shape individual perceptions and attitudes toward the adoption of formal financial services. In social environments that support financial literacy and the use of banking services, individuals are more inclined to access and engage with a variety of financial products. The influence of socio-cultural factors is also evident in how financial knowledge and experiences are shared within social networks, thereby enhancing awareness and participation in formal financial systems. A supportive social environment serves as a key driver in encouraging broader adoption of financial services. These findings are consistent with the studies conducted by (Allen et al., 2016), (Fungáčová & Weill, 2015), and (Grohmann et al., 2018), which affirm that socio-cultural factors significantly affect financial inclusion.

The Influence of Financial Well-Being on Financial Inclusion Moderated by Socio-Cultural Factors

Based on the results of the moderation interaction analysis, the path coefficient was -0.133 with a p-value of 0.005, which is less than the 0.05 significance level. The t-statistic of 2.821 exceeds the critical value of 1.985 at a degree of freedom (df) of 94 and a 5% significance level (two-tailed test), indicating that socio-cultural factors significantly moderate the relationship between financial well-being and financial inclusion. In essence, the positive

influence of financial well-being on financial inclusion is not absolute but is shaped by the prevailing socio-cultural context. In communities that are receptive to innovation and digital finance, financial well-being tends to enhance engagement with formal financial systems. Conversely, in societies that uphold traditional values or exhibit skepticism toward formal financial institutions, financial well-being may not translate as strongly into increased inclusion. This finding aligns with previous studies by (Brüggen et al., 2017), (Hassan et al., 2021), and (Demirgüç-Kunt et al., 2017), which affirm that the link between financial well-being and financial inclusion is significantly moderated by socio-cultural factors.

The Influence of Financial Literacy on Financial Inclusion Moderated by Socio-Cultural Factors

The moderation analysis revealed that the interaction coefficient between financial literacy and socio-cultural factors was -0.066 with a p-value of 0.295, which exceeds the 0.05 significance threshold. The t-statistic of 1.048 is also lower than the critical t-value of 1.985 at a degree of freedom of 94 and a 5% significance level (two-tailed). These results indicate that socio-cultural factors do not significantly moderate the relationship between financial literacy and financial inclusion among the population of Medan Area District. This suggests that although financial literacy has a direct and significant impact on financial inclusion, its effect does not vary substantially across different cultural contexts. Financial knowledge and skills appear to be more strongly driven by individual-level factors such as education, personal experience, and internal motivation, rather than by prevailing social norms or cultural values. These findings are consistent with previous studies conducted by (Cole et al., 2011), (Stolper & Walter, 2017), and (Grohmann et al., 2018), which also reported the absence of significant moderating effects of socio-cultural factors on the financial literacy–inclusion relationship.

The Influence of Income on Financial Inclusion Moderated by Socio-Cultural Factors

The interaction analysis revealed that the coefficient between income and socio-cultural factors on financial inclusion was -0.072 with a p-value of 0.333, exceeding the 0.05 significance level. The t-statistic value of 0.969 is also lower than the critical t-value of 1.985 at 94 degrees of freedom and a 5% significance level (two-tailed). These results indicate that socio-cultural factors do not significantly moderate the relationship between income and financial inclusion among the residents of Medan Area District. In other words, income remains the primary driver of an individual's engagement with formal financial services, regardless of the prevailing social norms or cultural values in their environment. Financial decisions related to income are typically more rational and directly linked to actual financial capacity. These findings align with prior studies by (Fungáčová & Weill, 2015), (Jones, 2016), and (Zins & Weill, 2016), which emphasize that economic ability outweighs cultural preferences when it comes to accessing formal financial systems.

CONCLUSION

Based on the findings from research conducted in the Medan Area District, it was concluded that financial well-being, financial literacy, and income significantly influence financial inclusion. Additionally, socio-cultural factors also directly affect financial inclusion. However, as a moderating variable, socio-cultural factors were found to significantly influence only the relationship between financial well-being and financial inclusion. No significant moderating effect was found for the relationship between financial literacy or income and financial inclusion. In light of these results, it is recommended that individuals improve their personal financial management through practices such as budgeting, maintaining emergency funds, and regular saving. Government institutions and relevant agencies should provide accessible and continuous community-based financial education. Moreover, enhancing financial literacy from an early age is crucial to reinforcing financial inclusion. Active efforts to increase income through job creation and entrepreneurial initiatives should also be prioritized. From a cultural perspective, financial education should be tailored using local values such as communal support and traditional wisdom to increase its reach and effectiveness.

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