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Determinants of Financial Inclusion in Nepal: Role of Financial Literacy and Socio-Economic Factors

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Abstract

Purpose: This study aims to examine the determinants of financial inclusion in Nepal, with a particular focus on the role of financial literacy and socio-economic factors.

Design/methodology/approach: The study utilizes data from 9,361 nationally representative individuals of Nepal, obtained from the Nepal Rastra Bank Baseline Survey on Financial Literacy in Nepal (2022). Regression analysis is employed to assess the effects of financial literacy components and socio-economic variables on financial inclusion.

Findings: The results indicate that financial literacy, particularly financial knowledge and financial behavior, significantly enhances financial inclusion, while financial attitude shows mixed effects. Education and income emerge as strong predictors, whereas vulnerable groups remain less financially included. Gender differences reveal higher participation of women in traditional financial services but lower adoption of digital financial tools.

Conclusion: Financial inclusion in Nepal is determined by financial literacy and socio-economic conditions, implying that access alone is insufficient without supporting capabilities and enabling environments.

Implications: The findings highlight the need for capability-centered financial inclusion policies, emphasizing financial literacy and inclusive financial product design.

Originality/value: This study contributes to the literature by adopting a multidimensional approach to financial inclusion and incorporating digital financial inclusion within an empirical framework using nationally representative data from Nepal.

JEL Classification: D14, G21, G53, I32, O16

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Introduction

Financial inclusion has emerged as a prominent strategy for inclusive economic development, gaining significant attention in global policy discourse over the past two decades (Pal et al., 2025). Financial inclusion is defined as the process of promoting affordable, timely, and adequate access to regulated financial products and services and broadening their use by all segments of society through the implementation of tailored and innovative approaches, including financial awareness and education, with a view to promoting financial well-being as well as economic and social inclusion (Atkinson & Messy, 2013). World Bank (WB) and the International Monetary Fund (IMF) have consistently emphasized that higher financial inclusion enhances economic participation, reduces poverty, and promotes income equality. According to the WB's Global Findex Database, global account ownership has climbed from 51% in 2014 to 79% in 2024, signaling meaningful progress over the past decade, but still 1.3 billion adults remain unbanked, and millions more are only nominally included (WB, 2025).

In South Asia, account ownership has risen sharply over this period, with mobile money driving growth in Bangladesh and Pakistan, while Nepal, India, and Sri Lanka recorded gains predominantly through formal bank accounts. Despite this regional momentum, notable progress reflected in the Global Findex Database, approximately 8.47 million adults in Nepal remain unbanked (WB, 2025), highlighting persistent inclusion gaps, raising the question: What are the key determinants of financial inclusion in Nepal?

Financial inclusivity is a major challenge in Nepal, especially in the rural regions, where access to formal financial services is structurally constrained (Shrestha, 2020). A considerable proportion of the population, especially women, older adults, the less educated, and low-income households, remains unbanked or underbanked, reflecting deep-rooted disparities in both access and usage of financial services (Kass-Hanna et al., 2022; Wanzala & Obokoh, 2025). These structural inequalities are compounded by low levels of financial literacy and digital literacy, which limit individuals' ability to meaningfully engage with formal financial systems (Grohmann et al., 2018; Kovács & Terták, 2019; Tulcanaza-Prieto et al., 2025). Emerging evidence indicates that financial access and usage remain uneven across population groups, particularly along gender, age, education, income, and occupation, emphasizing the need for rigorous empirical examination of the determinants of financial inclusion in the Nepalese context (Kumar & Pradhan, 2024).

This study is anchored in three complementary theoretical frameworks that collectively explain why financial inclusion outcomes vary across individuals and communities. First, Human Capital Theory (Becker, 1964) underpins the argument that financial literacy is a form of acquired cognitive capability which enhances individuals' capacity to understand, evaluate, and productively engage with formal financial services; greater human capital investment therefore translates into higher rates of financial inclusion. Second, the Institutional Inclusion Framework contextualizes supply-side barriers that include the regulatory environment, trust in formal institutions, and banking infrastructure, which further shape inclusion outcomes at the system level and explain why expanding access alone is insufficient without enabling institutional conditions (Demirguc-Kunt & Klapper, 2012). Third, Digital Divide Theory (Van Dijk, 2006) provides a lens through which inequalities in internet access, digital skills, and technological readiness translate into uneven digital financial inclusion outcomes across gender, geography, and income groups. Taken together, these frameworks form the conceptual architecture of this study: human capital theory addresses demand-side capability determinants, while institutional theory and digital divide theory address structural and supply-side conditions. Their integration enables a multi-dimensional examination of financial inclusion that moves beyond access to encompass behavioral and systemic drivers.

A conceptual clarification is necessary regarding financial inclusion and digital financial inclusion, as their boundaries are often blurred in the existing literature. In this study, financial inclusion is treated as the core dependent construct, encompassing traditional access indicators such as formal account ownership, savings behavior, and access to and use of credit, as defined by the WB's Global Findex framework

(Demirguc-Kunt & Klapper, 2012; WB, 2025). In contrast, digital financial inclusion refers to access to and use of financial services delivered through technology-enabled platforms, including mobile banking, internet banking, and digital payment systems (GPFI, 2016; Ofosu-Mensah Ababio et al., 2024). Maintaining this distinction allows for a clearer analytical separation, enabling an examination of whether the determinants of conventional and digital financial inclusion converge or diverge, thereby contributing to the existing literature. Although digital financial inclusion has gained strong policy momentum as a pathway to broader financial access, its adoption remains uneven across socio-economic groups, geographic regions, and demographic segments (Hunter et al., 2025; Trotta et al., 2026), indicating a persistent gap between financial access and meaningful digital usage in Nepal.

Despite the growing body of scholarship on financial inclusion, three key gaps justify the present study. First, empirical studies in Nepal and other low-income contexts have largely relied on small, geographically limited, or convenience-based samples, thereby constraining the generalizability of their findings (Kumar & Pradhan, 2024; Shrestha, 2020). This study addresses this limitation by utilizing a nationally representative dataset. Second, although digital financial inclusion has gained prominence in policy discussions, its behavioral and demand-side determinants remain insufficiently explored in developing economy contexts such as Nepal (Hunter et al., 2025; Meniago, 2025). This study responds to this gap by systematically examining the determinants of digital financial inclusion. Third, and most importantly, the three behavioral dimensions of financial literacy, i.e., knowledge, attitude, and behavior, are rarely integrated simultaneously within a unified empirical framework (Lyons & Kass-Hanna, 2021; OECD, 2020). By incorporating all three dimensions, this study offers a more comprehensive understanding of how financial literacy shapes inclusion outcomes.

Against this backdrop, and drawing on the Nepal Rastra Bank's (NRB) Baseline Survey on financial literacy and inclusion, this study aims to examine the determinants of financial inclusion in Nepal, with particular emphasis on the role of financial literacy. Specifically, it pursues three objectives: first, to assess the level of financial literacy and financial inclusion in terms of access, savings, and credit behavior among Nepalese households; second, to examine the effect of financial literacy, comprising knowledge, attitude, and behavior, on financial inclusion; and third, to evaluate the effect of financial literacy on digital financial inclusion. The findings are expected to generate robust empirical evidence to inform policy formulation, particularly in strengthening financial education initiatives, enhancing digital financial infrastructure, and promoting inclusive financial regulation in Nepal.

Literature Review

Conceptualizing Financial Inclusion

Financial inclusion has evolved from a narrow focus on access to banking services toward a multidimensional concept encompassing access, usage, quality, and welfare outcomes. The WB (2025) defines financial inclusion as the access to and use of appropriate financial services by individuals and businesses, incorporating both supply-side (availability and accessibility) and demand-side (usage) dimensions. Similarly, the Asian Development Bank conceptualizes financial inclusion as affordable access to financial services for households and firms (Yoshino & Morgan, 2016). In Nepal, it is commonly measured through indicators such as account ownership, savings behavior, credit access, insurance coverage, and the use of digital financial services (NRB, 2020). Taken together, financial inclusion extends beyond mere access to encompass the actual utilization of financial services and their broader socio-economic impacts.

In developing economies, financial inclusion has become a key driver of inclusive economic development by improving access to formal financial systems for all segments of society. Empirical evidence shows that it enhances savings behavior, supports investment in education and health, and promotes entrepreneurial activity (Rubio & León, 2025). It also contributes to poverty reduction, strengthens economic resilience,

and reduces income inequality (Demirguc-Kunt et al., 2018; Kumar, 2024; Omar & Inaba, 2020), thereby fostering more equitable and sustainable development outcomes.

Theoretical Foundations

Financial literacy has emerged as a key determinant of financial inclusion. The OECD (2020) defines financial literacy as a combination of awareness, knowledge, skills, attitudes, and behaviors required for sound financial decision-making and the attainment of individual financial well-being. It is commonly understood in terms of familiarity with basic financial concepts, numeracy skills, knowledge of financial products, and financial practices (Shrestha, 2020). Empirical evidence broadly confirms a positive relationship between financial literacy and financial inclusion across diverse contexts. For instance, Lusardi and Mitchell (2014) show that financially literate individuals are more likely to participate in formal financial systems, engage in long-term planning, and avoid high-cost borrowing. However, much of this evidence is derived from high-income OECD countries with well-developed financial systems, raising questions about its applicability to low-income contexts such as Nepal, where structural and supply-side constraints remain significant.

Recent studies suggest that the effect of financial literacy on inclusion is context-dependent. Grohmann et al. (2018) argue that financial literacy becomes particularly effective in enhancing the use of financial services when financial infrastructure is more developed. In contrast, Dagnachew and Mawugatie (2022) find that financial literacy plays a stronger role in improving both access to and use of formal financial services in developing economies, especially among vulnerable populations. Similarly, Reddy et al. (2025) emphasize that financial literacy strengthens financial decision-making, risk management, and sustained engagement with formal financial systems. Thus, these findings suggest that financial literacy functions not only as an enabler of access but also as a critical driver of financial behavior and long-term inclusion outcomes, particularly in low-income settings.

In the Nepalese context, financial literacy is increasingly recognized as essential for improving access to financial services, especially in rural areas where banking infrastructure remains limited. Women, rural populations, and low-income groups continue to face barriers in accessing and effectively using financial services due to low financial literacy, limited digital skills, and weak institutional trust (International Finance Corporation, 2023). Chand et al. (2025), using a nationally representative household survey, find that financial literacy significantly enhances both access to and use of formal financial services in Nepal. Similarly, Chaulagain (2015), focusing on urban Nepal, reports that financial literacy strongly predicts bank account ownership, savings behavior (Gyawali et al., 2024), and credit access, indicating that financially literate individuals are more likely to participate in the formal financial system.

Building on this evidence and grounded in human capital theory, this study proposes the following hypotheses regarding the relationship between financial literacy and financial inclusion:

H1: Financial knowledge has a significant positive effect on financial inclusion.
H2: Financial attitude has a significant positive effect on financial inclusion.
H3: Financial behavior has a significant positive effect on financial inclusion.

Socio-Economic Determinants of Financial Inclusion

The strength of the financial literacy-inclusion relationship varies depending on contextual factors such as income level, education, institutional trust, and digital infrastructure. In low-income settings, financial literacy alone may not be sufficient to drive inclusion unless complemented by supply-side interventions such as accessible financial products and supportive regulatory frameworks (Ozili, 2023). Among others, education, income, age, gender, and employment status have always become important predictors of financial inclusion (Kumar & Pradhan, 2024).

Valera et al. (2025), researching Southeast Asian economies, established that education, employment status, income, and ownership of a mobile phone are excellent predictors of inclusion. Similarly, OECD-based research in Chile by Francisco et al. (2022)indicates that people with higher education and regular jobs are much more financially literate and therefore more included in the financial system. Notably, both studies rely on cross-sectional data that cannot establish the causal direction between education, employment, and financial inclusion, a limitation that also characterizes much of the Nepalese evidence.

In developing countries, the most consistent factors that have been identified as determinants of financial inclusion are education, income, employment status, gender, and rural-urban divides. Cicchiello et al. (2021) show literacy levels and employment as key determinants of financial inclusion, and the rural-poor people relying mostly on agriculture are more likely to be excluded from formal financial services. In South Asia, Kumar and Pradhan (2024) find that age, gender, education, and income are dominant factors determining financial inclusion. Gender gap theory also attracts attention to the institutional forms of disadvantage that women experience, such as limited mobility, agency in the economy, and cultural values that limit access to and consumption of financial services (Ghosh & Vinod, 2017). In a systematic literature review, Mamun and László (2025) present multidimensional determinants of financial inclusion ranging from personal attributes, such as education, income, and financial awareness, to structural and institutional characteristics, such as technological innovation, availability of financial resources, the quality of institutions, and their stability in regulation.

Based on the Global Findex database, Khushboo and Pradhan (2024) identify education and income levels as important predictors of financial inclusion in Nepal. Similarly, Dahal et al. (2022) and Karki et al. (2024) emphasize that women continue to encounter systemic disadvantages like limited control over domestic finances, restricted mobility, and lower levels of literacy that negatively affect their participation in formal financial services.

These findings align with the broader South Asian pattern reported by Kumar and Pradhan (2024); however, neither study jointly models financial literacy alongside socio-economic determinants, leaving open the question of whether socio-economic indicators and financial literacy affect financial inclusion, indicating a clear gap that this study addresses.

On this basis, the study further hypothesizes that:

H4: Socio-economic and demographic factors (i.e., gender, age, education, income, occupation, and locality) have a significant effect on financial inclusion.

Digital Financial Inclusion

Digital financial inclusion is conceptualized in this study as an extension of financial inclusion through technology-enabled financial services. It encompasses the use of digital platforms for payments, savings, credit, insurance, and investment services, enabling more efficient, convenient, and transparent financial transactions (OECD, 2020). Its effectiveness depends not only on access to digital infrastructure but also on individuals' financial literacy and trust in formal and digital systems (Yadav et al., 2026), as limited capability in these areas often results in underutilized or inactive digital accounts.

In Nepal, digital financial inclusion is particularly significant due to geographical constraints and the high cost of extending traditional banking services to remote and mountainous regions. Digital platforms, such as mobile and internet banking, have helped bridge these access gaps (NRB, 2020). However, barriers such as low digital literacy, inadequate infrastructure, and socio-cultural constraints, particularly gender disparities, continue to limit the full realization of its benefits (IFC, 2023). Consequently, digital finance has become not only a convenience but also a policy imperative for inclusive development in Nepal.

Evidence from international studies further highlights that behavioral factors critically shape digital financial adoption. Perceived security significantly influences digital payment use (Aurazo & Vega, 2021), while risk aversion reduces the likelihood of transitioning from cash to electronic payments (Long et al., 2023). Gender disparities are also widely documented, with women often facing exclusion unless targeted digital literacy initiatives are implemented (Hasan et al., 2021). In some contexts, fintech adoption has even widened gender gaps rather than reducing them (Olaoye et al., 2025; Shakya and Karki, 2025), and similar patterns have been observed in India, where men adopted digital services more rapidly following demonetization (Ghosh & Hom Chaudhury, 2022). Collectively, these studies indicate that behavioral and gender-related constraints are central to digital financial inclusion globally.

Despite this growing evidence, limited empirical research in Nepal has examined the role of financial literacy in shaping digital financial inclusion, particularly in a context where digital infrastructure has expanded more rapidly than behavioral understanding. Addressing this gap, this study proposes the following hypothesis:

H5: Financial literacy (financial knowledge, attitude, and behavior) has a significant positive influence on digital financial inclusion.

Research Methods

This study is based on secondary data derived from the *Baseline Survey on Financial Literacy and Financial Inclusion 2022* conducted by NRB. The survey comprises a nationally representative sample of 9,361 individuals aged 18 years and above, covering all 77 districts of Nepal. A multistage cluster probability sampling technique was employed to ensure representation across provinces, ecological belts, and urban–rural segments. The sampling frame followed a three-stage design: first, districts were selected as primary sampling units; second, wards were selected within districts using probability proportional to size (PPS); and finally, households were systematically sampled within selected wards. Survey weights provided by NRB were applied in all analyses to account for the complex sampling design and to ensure nationally representative estimates. The overall response rate for the survey was approximately 93%. Cases with missing values on key variables were excluded via listwise deletion, resulting in a final analytical sample of 9,361 complete observations.

The analysis was conducted using STATA software following a structured, multi-stage approach. Initially, descriptive statistics were applied to profile respondents and summarize key variables related to financial literacy and financial inclusion. Frequencies, percentages, means, and standard deviations were computed to capture patterns in financial knowledge, attitudes, behaviors, and inclusion dimensions such as access, savings, credit, and digital banking.

Econometric Model Specification

To examine the determinants of financial inclusion, four multiple regression models were estimated, each capturing a distinct dimension: access to finance, savings behavior, credit access, and digital banking adoption. Each dependent variable is operationalized as a continuous composite index, constructed by aggregating binary indicators (Yes=1; No=0) for each inclusion dimension with equal weights assigned to individual indicators (see Table A1). Because the dependent variables are continuous composite indices, rather than binary outcomes, the Linear Probability Model (OLS) framework is appropriate and consistent with established practice in financial inclusion research employing index-based dependent variables (Grohmann et al., 2018). While logistic or probit models are conventionally preferred for binary outcomes, the use of continuous composite indices in this study renders OLS suitable, as it allows direct interpretation of marginal effects across the full distributional range of inclusion scores. The general functional form of the models is specified in equation 1:

$$FI = \beta_0 + \beta_1 \text{FK} + \beta_2 \text{FA} + \beta_3 \text{FB} + \beta_4 \text{ Gender} + \beta_5 \text{ Age} + \beta_6 \text{Income} + \beta 7 \text{Education} + \beta 8 \text{ Employment} + \varepsilon \ldots. (1)$$

Where:

FI represents the dependent variable (financial inclusion) corresponding to each model (Access, Saving, Credit, Digital Banking),

FK, FA, and FB represent financial knowledge, financial attitude, and financial behavior, respectively,

$\beta 0$ is the intercept,

$\beta 1 \ldots \beta 8$ are coefficients of explanatory variables, and

ε is the error term.

The four estimated models are:

Model 1: Determinants of Access to a Formal Bank Account

Model 2: Determinants of Formal Saving

Model 3: Determinants of Access to Credit

Model 4: Determinants of Usage of Digital Banking

All models incorporate composite indices of financial literacy and financial inclusion components alongside socio-demographic variables, including age, gender, education, employment, and income.

Model Diagnostics and Robustness

Model performance was evaluated using R^2, Adjusted R^2, and F-statistics to assess explanatory power and overall model significance. All models were found to be jointly significant at $p < .001$. To ensure robustness, multicollinearity among predictors was examined using the Variance Inflation Factor (VIF). The VIF values for all variables were below the critical threshold of 5, indicating no multicollinearity concerns and confirming the reliability of coefficient estimates (Hair et al., 2019).

Table 1: Model Diagnostics and Robustness

	VIF	1/VIF
Financial Knowledge	1.785	.56
Financial Attitude	1.058	.945
Financial Behavior	1.206	.829
Female	1.631	.613
Log of Age	1.924	.52
Log of Income	1.246	.803
No formal education	1.274	.785
Primary education	1.75	.572
Secondary education	2.166	.462
Higher secondary edu	2.264	.442
Bachelor's degree	1.635	.611
Master's degree	1.344	.744
Salaries/employed	1.575	.635
Seeking employment	1.42	.704
Housewife	2.204	.454
Student	1.318	.759
Unemployed	1.518	.659

The heteroskedasticity issue was addressed by reporting robust standard errors following the recommendation of White (1980). This approach renders the coefficient estimates consistent and standard errors reliable in the presence of non-constant error variance. Regarding the normality of residuals, given the large sample size of 9,361 observations, the Central Limit Theorem ensures that the sampling distribution of the estimators is approximately normal, reducing the practical concern of residual non-normality for inferential purposes (Wooldridge, 2013).

Operationalization and Measurement of Variables

The operationalization of variables used in this study is summarized in Annex (see Table A1), which presents a comprehensive mapping of key constructs, their respective indicators, and coding schemes. The table highlights the construction of both dependent and independent variables, including financial inclusion dimensions (formal account, saving, credit, and digital banking) and financial literacy components (knowledge, attitude, and behavior), along with relevant socio-demographic controls. Each variable is measured using standardized binary or categorical coding, and composite indices are developed by assigning equal weight to the respective indicators, ensuring consistency and comparability in empirical analysis. Specifically, each financial inclusion dimension is operationalized as a continuous composite index by summing equally weighted binary indicators (coded Yes=1; No=0) for each component of the respective dimension, such that higher index values reflect greater levels of inclusion along that dimension.

Results and Analysis

Demographic Profile of the Respondents

The demographic composition of the sample (see Table 2) reflects a relatively balanced gender distribution, with 51.5% male and 48.5% female respondents. The education profile indicates that a significant share of the population has low educational attainment, with over one-third either illiterate or without formal education. Employment status is also diverse, with a large proportion engaged in self-employment, wage employment, and household activities.

Table 2 : *Demographic Profile of Respondents*

Variables	Categories	Frequency	Percent (%)
Gender	Male	4,821	51.5
	Female	4,540	48.5
Educational Level	Illiterate	2,510	26.81
	No formal education	983	10.5
	Primary education	1,966	21
	Secondary education	1,874	20.02
	Higher secondary education	1,249	13.34
	Bachelor's degree	529	5.65
	Master's degree or higher	250	2.67
Employment Status	Self-employed	2,276	24.31
	Salaries/wages employed	2,318	24.76
	Seeking employment	1,021	10.91
	Housewife	2,466	26.34
	Student	325	3.47
	Unemployed and not seeking employment	955	10.2

Note. NRB Baseline Survey (2022)

Descriptive Statistics

Table 4 reveals important baseline insights into financial inclusion and literacy dimensions. The average financial knowledge score (.486) suggests moderate literacy levels, while financial behavior exhibits a relatively high mean (.892), indicating that basic financial practices such as bill payment and affordability assessment are widely adopted. However, access indicators remain relatively low, with formal account ownership (.347), savings (.126), credit (.148), and digital banking usage (.155) reflecting limited penetration of formal financial services.

Table 3 :Descriptive Statistics

Variable	Obs	Mean	Std. Dev.
Age in Years	9361	43.65	15.29
Income in NPR.	9018	27579.93	43847.09
Log of Income	9018	9.828	.884
Financial Knowledge	8889	.486	.36
Financial Attitude	9361	.542	.498
Financial Behavior	9361	.892	.31
Financial Access	8921	.347	.222
Access to Savings	8944	.126	.204
Access to Credit	8930	.148	.206
Digital Banking Use	8999	.155	.293

Note. NRB Baseline Survey (2022)

Determinants of Access to Formal Financial Accounts

Financial knowledge and behavior have strong positive and statistically significant effects on formal account ownership, indicating that individuals with higher financial literacy are more likely to hold accounts. Financial attitude shows a small but significant negative effect, suggesting that certain attitudinal factors, such as risk aversion or liquidity preference, may reduce the likelihood of account ownership. As shown in Table 4, female respondents are more likely than males to have formal accounts. Education exhibits a strong positive gradient, with all levels significantly increasing the likelihood of account ownership compared to illiterate individuals, and stronger effects observed at higher education levels. Income also has a positive and significant effect. Occupational status shows mixed results: compared to self-employed individuals, those seeking employment, housewives, students, and unemployed individuals are less likely to own formal accounts, while salaried employment does not differ significantly from self-employment.

Table 4 : *Determinants of Financial Inclusion (Access to a Formal Bank Account)*

	Coef.	Robust St.Err.	*t-value*	*p-value*	[95% Conf	Interval]
Financial Knowledge	.108	.008	13.58	.000	.092	.124
Financial Attitude	-.008	.003	-3.24	.001	-.013	-.003
Financial Behavior	.038	.003	13.49	.000	.032	.043
Female	.027	.005	5.03	.000	.017	.038
Log of Age	.006	.008	.75	.456	-.01	.022
Log of Income	.043	.003	16.10	.000	.038	.048
No formal education	.063	.008	7.98	.000	.047	.078
Primary education	.065	.007	9.40	.000	.051	.078
Secondary education	.08	.008	10.19	.000	.065	.095
Higher secondary edu	.121	.009	12.86	.000	.103	.14
Bachelor's degree	.099	.012	8.31	.000	.075	.122
Master's degree	.104	.015	6.74	.000	.073	.134
Salaries/employed	.000	.006	-.04	.964	-.012	.012
Seeking employment	-.036	.008	-4.48	.000	-.052	-.021
Housewife	-.015	.007	-2.13	.033	-.029	-.001
Student	-.058	.014	-4.12	.000	-.085	-.03
Unemployed	-.041	.009	-4.69	.000	-.058	-.024
Constant	-.326	.042	-7.75	.000	-.408	-.244
Mean dependent var		.351	SD dependent var			.221
R-squared		.234	Number of obs			8231
F-test		125.551	Prob > F			.000
Akaike crit. (AIC)		-3658.398	Bayesian crit. (BIC)			-3511.069

Determinants of Formal Savings

Financial knowledge, attitude, and behavior all have positive effects on formal savings, indicating that savings decisions are driven by both cognitive and behavioral factors (see Table 5). Female respondents are more likely than males to engage in formal savings. Age and income both have positive and significant effects, reflecting life-cycle patterns and resource availability in savings behavior. Education has a strong positive association with savings, with higher education levels significantly increasing the likelihood of formal savings compared to illiterate individuals, particularly among bachelor's and master's degree holders. Occupational status also matters, as salaried individuals are more likely to save than self-employed individuals, while those seeking employment, housewives, students, and unemployed individuals are significantly less likely to engage in formal savings.

Table 5 : Determinants of Financial Inclusion (Formal Savings)

	Coef.	Robust St.Err.	*t-value*	*p-value*	[95% Conf	Interval]
Financial Knowledge	.068	.007	9.24	.000	.054	.083
Financial Attitude	.007	.002	2.95	.003	.002	.012
Financial Behavior	.022	.003	8.28	.000	.016	.027
Female	.019	.005	3.72	.000	.009	.029
Log of Age	.07	.008	9.07	.000	.055	.085
Log of Income	.028	.002	11.44	.000	.024	.033
No formal education	.014	.007	1.86	.063	-.001	.028
Primary education	.02	.006	3.07	.002	.007	.032
Secondary education	.049	.007	6.76	.000	.035	.063
Higher secondary edu	.112	.009	12.82	.000	.095	.129
Bachelor's degree	.159	.011	14.48	.000	.138	.181
Master's degree	.252	.014	17.64	.000	.224	.28
Salaries/employed	.026	.006	4.54	.000	.015	.037
Seeking employment	-.026	.008	-3.49	.000	-.041	-.012
Housewife	-.026	.007	-3.88	.000	-.039	-.013
Student	-.038	.013	-2.89	.004	.063	-.012
Unemployed	-.025	.008	-3.11	.002	-.041	-.009
Constant	-.598	.039	-15.29	.000	-.674	-.521
Mean dependent var		.127	SD dependent var			.204
R-squared		.223	Number of obs			8248
F-test		118.009	Prob > F			.000
Akaike crit. (AIC)		-4895.081	Bayesian crit. (BIC)			-4747.709

Determinants of Formal Credit

Financial knowledge and financial behavior have a positive and significant effect on access to formal credit, whereas financial attitude is not statistically significant, indicating that borrowing decisions are primarily driven by capability and behavioral factors rather than attitudes (see Table 6). Female respondents are more likely than males to access formal credit, suggesting relatively inclusive credit outreach. Income has a positive and significant effect, while age is not significant. Education shows mixed effects: compared to illiterate individuals, lower to mid-level education significantly increases access to credit, whereas higher education levels do not show significant differences. Occupational status also matters, with all groups other than self-employed individuals being significantly less likely to access formal credit, highlighting the central role of self-employment in credit access.

Table 6 : Determinants of Financial Inclusion (Formal Credit)

	Coef.	Robust St.Err.	*t-value*	*p-value*	[95% Conf	Interval]
Financial Knowledge	.064	.008	7.87	.000	.048	.08
Financial Attitude	-.003	.003	-1.05	.295	-.008	.002
Financial Behavior	.017	.003	5.76	.000	.011	.022
Female	.023	.006	4.15	.000	.012	.034
Log of Age	-.001	.009	-.13	.894	-.018	.016
Log of Income	.017	.003	6.25	.000	.012	.023
No formal education	.041	.008	5.04	.000	.025	.057
Primary education	.041	.007	5.84	.000	.027	.055
Secondary education	.028	.008	3.48	.001	.012	.044
Higher secondary edu	.05	.01	5.17	.000	.031	.069
Bachelor's degree	.003	.012	.27	.789	-.021	.027
Master's degree	.01	.016	.66	.508	-.02	.041
Salaries/employed	-.017	.006	-2.64	.008	-.029	-.004
Seeking employment	-.043	.008	-5.18	.000	-.059	-.027
Housewife	-.026	.007	-3.55	.000	-.041	-.012
Student	-.08	.014	-5.56	.000	-.109	-.052
Unemployed	-.068	.009	-7.60	.000	-.085	-.05
Constant	-.108	.043	-2.51	.012	-.193	-.024
Mean dependent var		.150	SD dependent var			.206
R-squared		.075	Number of obs			8235
F-test		33.475	Prob > F			.000
Akaike crit. (AIC)		-3251.273	Bayesian crit. (BIC)			-3103.934

Determinants of Digital Financial Inclusion

Financial knowledge has the strongest positive effect among all models, highlighting its critical role in digital financial adoption (see Table 7). Financial attitude and behavior also positively influence digital usage. In contrast to other dimensions, female respondents are significantly less likely than males to use digital financial services, indicating a clear digital gender gap. Age also has a negative effect, suggesting that older individuals are less likely to adopt digital finance, while income strongly increases adoption. Education has a strong and increasing positive effect: compared to illiterate individuals, higher education levels substantially increase digital financial usage, with particularly large effects at bachelor's and master's levels. In terms of occupation, relative to self-employed individuals, seeking employment, housewives, students, and unemployed individuals are significantly less likely to use digital financial services, while salaried employees do not differ significantly.

Table 7 : Determinants of Financial Inclusion (Digital Banking Services)

	Coef.	Robust St.Err.	*t-value*	*p-value*	[95% Conf	Interval]
Financial Knowledge	.131	.009	13.97	.000	.112	.149
Financial Attitude	.007	.003	2.26	.024	.001	.013
Financial Behavior	.021	.003	6.25	.000	.014	.027
Female	-.026	.006	-4.02	.000	-.038	-.013
Log of Age	-.049	.01	-4.96	.000	-.068	-.029
Log of Income	.047	.003	14.78	.000	.041	.053
No formal education	-.016	.009	-1.70	.088	-.034	.002
Primary education	-.016	.008	-2.00	.046	-.032	.000
Secondary education	.037	.009	4.01	.000	.019	.055
Higher secondary edu	.194	.011	17.48	.000	.172	.215
Bachelor's degree	.311	.014	22.26	.000	.283	.338
Master's degree	.414	.018	23.00	.000	.379	.449
Salaries/employed	.003	.007	.37	.711	-.012	.017
Seeking employment	-.076	.01	-7.97	.000	-.095	-.058
Housewife	-.03	.008	-3.57	.000	-.047	-.014
Student	-.056	.016	-3.38	.001	-.088	-.023
Unemployed	-.033	.01	-3.22	.001	-.053	-.013
Constant	-.316	.05	-6.37	.000	-.414	-.219
Mean dependent var		.156	SD dependent var			.294
R-squared		.397	Number of obs			8297
F-test		272.225	Prob > F			.000
Akaike crit. (AIC)		-909.867	Bayesian crit. (BIC)			-762.370

Discussion

The results highlight financial literacy as a key determinant of financial inclusion, supporting its explanatory relevance in the existing literature. In line with Dagnachew and Mawugatie (2022), Grohmann et al. (2018), and Lusardi and Mitchell (2014), the current study establishes that financial knowledge and behavior are critical to access and usage of formal financial services. Likewise, the findings also coincide with Nepal-specific data (e.g., Chand et al., 2025; Chaulagain, 2015) to prove that financially literate citizens are more inclined to engage in formal finance. Yet, the ambivalent and sometimes negative impact of financial attitude is different from the OECD (2020) framework, which considers attitude a positive aspect of financial literacy. This implies that risk aversion or distrust might be captured by attitudinal factors in the Nepalese context, which means that the behavioral and psychological levels do not work as well in low-income and institutionally changing settings.

The findings on socio-economic determinants are consistent with prior empirical evidence. Education and income emerge as strong and reliable predictors of financial inclusion across all dimensions, in line with Cicchiello et al. (2021), Kumar and Pradhan (2024), and Valera et al. (2025). The positive education gradient supports the human capital perspective, suggesting that higher education enhances individuals' capacity to engage with financial systems, particularly in digital contexts. The lower inclusion of vulnerable groups

such as the unemployed, students, and economically inactive individuals reinforces structural disparities identified in previous studies (Mamun & Laszlo, 2025). Gender patterns show partial consistency with existing literature; while prior studies in Nepal (Dahal et al., 2022; Karki et al., 2024) highlight systemic disadvantages for women, the present findings indicate that women are more likely to use traditional financial services but less likely to engage with digital financial services, reflecting a persistent digital gender gap.

The findings contribute to the evolving discourse on digital financial inclusion by highlighting the central role of financial knowledge in digital adoption, consistent with Świecka et al. (2021) and Yadav et al. (2026). The study also reveals persistent inequalities in digital inclusion shaped by socio-demographic and capability-related factors such as age, gender, and education, aligning with recent global evidence (Hunter et al., 2025; Trotta et al., 2026). This supports the argument that technological expansion alone does not ensure inclusive financial access. Moreover, the observed gap between financial capability and actual usage reinforces prior findings (Grohmann et al., 2018; OECD, 2020), emphasizing that financial literacy is critical for meaningful utilization of financial services. Thus, the results suggest that financial inclusion in Nepal is shaped by the interplay of literacy, socio-economic conditions, and structural barriers, emphasizing the need for multi-dimensional policy interventions beyond infrastructure development.

Conclusion and Implications

This study presents empirical evidence on the determinants of financial inclusion in Nepal based on nationally representative data from the NRB baseline survey 2022. The study offers a more comprehensive perspective on financial inclusion by adopting a multidimensional approach that captures access to formal accounts, savings, credit, and digital financial services, rather than relying on a single indicator. The results indicate that financial literacy, especially financial knowledge and financial behavior, is a key driver of financial inclusion in all aspects, whereas financial attitude has mixed effects. Moreover, socio-economic variables, education, income, and employment status are also important in determining financial participation, with better education and income increasing inclusion, and vulnerable groups still facing the risk of being excluded.

The study also brings out relevant structural and behavioral dynamics that influence financial inclusion in Nepal. Although women display a comparatively high level of use of conventional financial services, they are seen to be lower in terms of digital financial use, which means that an enduring digital gender gap exists. Further, the findings indicate that there is a mismatch between financial capability and actual use, indicating that access is not enough, but it is accompanied by other supportive conditions like trust, skills, and enabling institutional conditions.

Theoretically, the findings extend human capital theory and behavioral finance to a low-income institutional context, revealing that financial attitude operates differently than OECD-based frameworks predict, and that gendered digital exclusion persists even as conventional inclusion expands. Practically, the findings call for a capability-building policy paradigm that integrates targeted financial literacy programs for women, rural, and low-income groups with trust-building mechanisms and simplified digital products. Creating confidence in financial systems and matching supply-side growth with demand-side capacity-building will be crucial to transform financial access to meaningful and lasting inclusion.

Limitations and Future Research

This study has several limitations that provide avenues for future research. First, the use of cross-sectional data limits the ability to draw causal inferences among the variables, suggesting that future studies should employ longitudinal or experimental designs to better capture dynamic relationships over time. Second, although the research takes into consideration major dimensions of financial literacy and inclusion, it does not directly consider institutional factors like trust, service quality, or geographical differences, which can

also affect the results of financial inclusion. Third, the analysis is based on quantitative measures, and it might not be able to capture behavioral and contextual nuances behind financial decision-making.

Future studies might take this study a step further by utilizing longitudinal data to examine causal relationships, using regional and rural-urban heterogeneity, and studying how institutional trust, digital readiness, and behavioral biases influence financial inclusion. Moreover, further exploration of the adoption of fintech and its effect on inclusiveness would offer insights into the development of more effective and inclusive financial ecosystems, especially in the context of developing countries, such as Nepal.

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Conflict of Interest

The Authors declare that there is no conflict of interest.

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Ethical Statement

This study relied exclusively on secondary data obtained from publicly available sources and did not involve human participants, personal data collection, or animal subjects. Accordingly, formal ethical approval and informed consent were not required. The research was conducted in accordance with established principles of research ethics, academic integrity, and the responsible use of secondary data.

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Annex

Table A1 : Variable Definition, Measurement, and Index Construction

Variable	Indicators	Coding and Index
Formal account (Dependent variable)	**1.** Bank savings account **2.** Current account **3.** Microfinance savings account **4.** Cooperative savings account **5.** Group savings participation **6.** Life insurance coverage **7.** Non-life insurance coverage **8.** Receiving remittance from abroad **9.** Sending/receiving domestic remittance	Yes=1; No=0 Index was constructed by assigning equal weightage to each indicator
Formal saving (Dependent variable)	**1.** Fixed deposit account **2.** Provident fund account **3.** Citizen investment fund **4.** Citizen investment fund **5.** Shares **6.** Bonds	Yes=1; No=0 Index was constructed by assigning equal weightage to each indicator
Formal credit (Dependent variable)	1. Bank loan 2. Microfinance loan 3. Unsecured loan 4. Cooperative loan 5. Group loan 6. Government grant loan	Yes=1; No=0 Index was constructed by assigning equal weightage to each indicator
Digital banking (Dependent variable)	**1.** Mobile banking **2.** Internet banking **3.** Credit/Debit card **4.** PSP services (Electricity, water, etc.)	Yes=1; No=0 Index was constructed by assigning equal weightage to each indicator
Financial Knowledge (Independent Variable)	**1.** Can the amount received now buy more/less of the same goods compared to others? **2.** If you lent Rs. 25,000/- to your friend and they returned the exact amount to you the next day, how much interest did they pay you? **3.** Suppose you deposited Rs. 100/- in a savings account with a guaranteed annual interest rate of 2%, free of fees and taxes. If you did not make any payments or withdraw any money from the account, how much will be in your account at the end of the first year after interest is paid? **4.** In an account with annual interest payments, will the amount deposited at the end of five years be Rs. 110/- or more/less? **5.** In an account with annual interest payments, will the amount deposited at the end of five years be Rs. 110/- or more/less? **6.** In high-return investments, is the risk also low or high? **7.** When inflation is high, what happens to the cost of living?	Correct=1; Incorrect=0 Index was constructed by assigning equal weightage to each indicator

Financial Attitude (Independent Variable)	**1.** Even if I have money, I avoid spending it unnecessarily and save it for future needs. **2.** I feel more satisfied spending money now rather than saving it for many future purposes. **3.** I am prepared to take risks related to savings, investments, and other financial matters involving my own money. **4.** I believe that money is meant to be spent	I always do it=1; I usually do it=2; I sometimes do it, sometimes don't=3 I usually don't do it=4 I never do it=5 First, the scale was converted into binary using mean as mid point as follows for ach item: Less than mean value = 0 Mean and above = 1 Then, Index was constructed by assigning equal weightage to each indicator.
Financial Behavior (Independent Variable)	**1.** I consider affordability before purchase **2.** I pay bills on time **3.** I track financial transactions **4.** I set financial goals and planning	Yes=1; No=0 Index was constructed by assigning equal weightage to each indicator
Gender (Independent Variable)	Gender of respondent	Male = 1; Female=2
Age (Independent Variable)	Age of the respondent	Actual age in years
Education (Independent Variable)	Education level of respondents	Illiterate=1 No formal education=2 Primary education=3 Secondary education=4 Higher secondary= 5 Bachelor's degree=6 Master's degree =7
Employment (Independent Variable)	Employment status of respondent	Self-employed=1 Salaries/employed=2 Seeking employment=3 Housewife=4 Student=5 Unemployed =6
Income (Independent Variable)	Household monthly income in NRS	Actual monthly income

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