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Digital Financial Inclusion and Financial Well-Being: The Mediating Role of Financial Literacy and Financial Self-Efficacy

Mr. SK. Waseem Ahamad[1], Dr. Golli Mohan[2]

[1] Research Scholar, Department of BBA, KLEF, E-mail: wsk05316@gmail.com

[2] Assistant Professor, Department of BBA, KLEF, E-mail: gollimohan@kluniversity.in

ABSTRACT :

Digital financial services (DFS) such as mobile money, instant payments and app-based credit have brought formal finance to millions of previously excluded adults, yet access does not automatically translate into better lives. This paper examines whether, and how, digital financial inclusion (DFI) improves subjective financial well-being, drawing on the capability approach, human capital theory and social cognitive theory. We propose that DFI raises financial literacy and financial self-efficacy, which in turn raise financial well-being, with literacy also strengthening self-efficacy. The design is a cross-sectional household survey analysed with chi-square tests of independence, one-way ANOVA, multiple linear regression and bootstrapped mediation, all implemented in Excel. To demonstrate the workflow, the analysis is run on a simulated sample of 400 respondents (illustrative, not empirical). In that sample, DFI level is associated with residence and literacy level (chi-square $p = .001$ and $p < .001$), well-being differs across DFI tiers ($F(2, 397) = 42.64$, $p < .001$, eta-squared = .18), and DFI predicts well-being ($B = 0.41$, $p < .001$), with about 40% of the effect transmitted indirectly, mainly through self-efficacy and the literacy-to-self-efficacy sequence. The paper contributes a mechanism-focused framework, a transparent Excel replication kit, and implications for policymakers, fintech providers and financial educators.

Keywords: digital financial inclusion; financial well-being; financial literacy; financial self-efficacy; mediation; fintech; structural equation modelling

1. Introduction

Financial inclusion is widely regarded as an enabler of poverty reduction, resilience and economic opportunity. Over the past decade, the dominant channel for expanding inclusion has shifted from bank branches to digital infrastructure: mobile phones, biometric identity systems, real-time payment rails and fintech platforms. The World Bank's Global Findex database documents that account ownership among adults worldwide rose substantially between 2011 and 2021, with digital payments playing a growing role in that increase (Demirgüç-Kunt et al., 2022). In many emerging economies, including India, public digital infrastructure for identity, payments and basic accounts has been central to this expansion.

However, the policy and academic conversation has increasingly recognised that *having an account is not the same as being financially well*. Dormant accounts, over-indebtedness through easily accessible digital credit, susceptibility to fraud, and unintentional misuse of products are well-documented risks. A person who can transfer money in seconds may still struggle to cover an emergency expense, plan for retirement or feel in control of their finances. This gap between access and outcomes motivates a shift from asking *whether* digital financial inclusion matters to asking *through which mechanisms* it improves, or fails to improve, well-being.

Two psychological and cognitive mechanisms are especially plausible. First, **financial literacy**, the knowledge and skills needed to make informed financial decisions, is both a likely *product* of using formal digital finance (learning by doing) and a known *predictor* of better financial behaviour and outcomes (Lusardi & Mitchell, 2014). Second, **financial self-efficacy**, an individual's belief in their capability to manage financial tasks and challenges, derives from Bandura's (1977) social cognitive theory and may be strengthened by successful, low-friction experiences with digital tools. Self-efficacy shapes whether people act on what they know, persist when faced with setbacks and feel in control of their finances.

Despite extensive work on each construct separately, relatively few studies integrate DFI, literacy and self-efficacy within one model of financial well-being. This paper addresses that gap. Its research questions are:

1. Does digital financial inclusion directly improve financial well-being?
2. Does financial literacy mediate the DFI–well-being relationship?
3. Does financial self-efficacy mediate that relationship?
4. Does financial literacy influence financial self-efficacy, creating a serial mediation pathway from DFI to well-being?

The contributions are threefold. Theoretically, the study integrates cognitive (knowledge) and motivational (belief) mechanisms in one framework. Empirically, it offers a design for testing parallel and serial indirect effects using bias-corrected bootstrapping. Practically, it distinguishes whether interventions should prioritise access, education or confidence-building to convert inclusion into welfare.

2. Literature Review and Conceptual Background

2.1 Digital financial inclusion

Digital financial inclusion refers to the use of digital technologies to provide formal financial services to excluded and underserved populations at a cost affordable to them and sustainable for providers. A frequently used conceptualisation treats it as multidimensional, covering (a) *access* (digital infrastructure and account availability), (b) *usage* (frequency and range of digital transactions, savings, credit and insurance) and (c) *quality* or depth (affordability, suitability, consumer protection and the ability of services to meet needs). At the individual level, usage and perceived quality are the dimensions most relevant to well-being, because access without use creates little welfare change.

Evidence on benefits is promising but uneven. Studies of mobile money in East Africa, for example, have linked adoption to improved risk-sharing and household resilience, while research on digital credit highlights risks of high costs and repayment stress. These heterogeneous findings suggest that outcomes depend on how well users understand and feel in control of what they adopt, a premise at the heart of our model.

2.2 Financial well-being

Financial well-being is commonly defined as a state in which a person can fully meet current and ongoing financial obligations, can feel secure in their financial future and is able to make choices that allow them to enjoy life (Consumer Financial Protection Bureau, 2015). It combines objective conditions with subjective perceptions, and four elements are widely emphasised: control over day-to-day and month-to-month finances, capacity to absorb a financial shock, being on track to meet financial goals, and having the financial freedom to make choices. We operationalise it as a subjective, perception-based construct, which is better suited to survey research and captures psychological security that income alone does not.

2.3 Financial literacy

Financial literacy combines knowledge (e.g., interest, inflation, risk diversification), attitudes and behaviours (Atkinson & Messy, 2012). Lusardi and Mitchell (2014) review extensive evidence that low literacy is associated with poor planning, costly borrowing and low participation in formal finance, and that higher literacy predicts better outcomes. In digital settings, literacy has an added dimension, since users must interpret fee structures, privacy settings, repayment terms and fraud signals in interfaces that move quickly. For this reason, digital financial literacy is often considered separately; our measure includes both general and digital-specific items.

2.4 Financial self-efficacy

Self-efficacy is the belief in one's ability to organise and execute the actions required to reach a goal (Bandura, 1977). Applied to finance, it captures confidence in managing money, handling unexpected expenses and pursuing financial goals. Bandura identified four sources of efficacy beliefs: mastery experiences, vicarious learning, social persuasion and physiological or emotional states. Digital finance can supply mastery experiences (successfully paying bills, saving through an app, tracking spending), which would raise efficacy. At the same time, poorly designed or error-prone interfaces could produce failure experiences that lower it. Financial self-efficacy has been associated with more positive financial behaviour and lower financial stress in prior work (e.g., Lown, 2011).

2.5 Theoretical framework

Three complementary perspectives frame the hypotheses.

Capability approach. Sen (1999) argues that development should be judged by the real freedoms people have to lead lives they value. Financial services are *means*; well-being arises only when people can convert those means into valued functionings. Literacy and self-efficacy can be viewed as *conversion factors* that determine how effectively access to digital finance becomes well-being.

Human capital theory. Skills and knowledge accumulate through education and experience and raise productivity and decision quality. Using digital financial products can be a form of experiential learning that builds financial human capital.

Social cognitive theory. Behaviour emerges from the interaction of personal factors (knowledge, beliefs), behaviour and environment (Bandura, 1977, 1986). Here, the environment is the digital financial ecosystem, personal factors are literacy and efficacy, and behaviour is financial management, which jointly produce well-being.

3. Hypotheses Development

3.1 DFI and financial well-being

Digital financial services lower transaction costs, offer safe places to save, enable smoothing of consumption and provide access to credit and insurance. These features should increase control over finances and improve resilience to shocks. Greater and better-quality use of DFS should therefore be associated with higher perceived financial well-being.

H1: Digital financial inclusion has a positive effect on financial well-being.

3.2 DFI and financial literacy; literacy and well-being

Regular use of digital finance exposes users to concepts such as balances, interest, fees, repayment schedules and risk, and many platforms embed nudges, summaries and educational content. Learning by doing should raise literacy. In turn, more literate individuals plan better, compare products and avoid costly mistakes, improving well-being.

H2a: Digital financial inclusion has a positive effect on financial literacy.

H2b: Financial literacy has a positive effect on financial well-being.

H2c: Financial literacy mediates the relationship between digital financial inclusion and financial well-being.

3.3 DFI and financial self-efficacy; self-efficacy and well-being

Successful use of digital tools provides mastery experiences, and the convenience, transparency and immediacy of digital finance can reduce anxiety about managing money. Higher efficacy in turn encourages proactive saving, budgeting and goal pursuit, and is associated with lower financial stress.

H3a: Digital financial inclusion has a positive effect on financial self-efficacy.

H3b: Financial self-efficacy has a positive effect on financial well-being.

H3c: Financial self-efficacy mediates the relationship between digital financial inclusion and financial well-being.

3.4 The serial pathway

Knowledge is a source of confidence: individuals who understand financial concepts are more likely to believe they can manage financial tasks. Literacy may therefore raise self-efficacy, so that DFI improves literacy, which improves self-efficacy, which improves well-being.

H4a: Financial literacy has a positive effect on financial self-efficacy.

H4b: Financial literacy and financial self-efficacy serially mediate the relationship between digital financial inclusion and financial well-being (DFI → Literacy → Self-efficacy → Well-being).

3.5 Conceptual model

The model contains one exogenous variable (DFI), two mediators (financial literacy, M1; financial self-efficacy, M2) and one outcome (financial well-being). Paths: DFI → FWB (direct, c′); DFI → M1 (a1); DFI → M2 (a2); M1 → M2 (d21); M1 → FWB (b1); M2 → FWB (b2). Three indirect effects follow: a1·b1, a2·b2 and a1·d21·b2. Control variables are age, gender, education, household income, employment status, rural/urban residence, smartphone ownership and years of digital finance use.

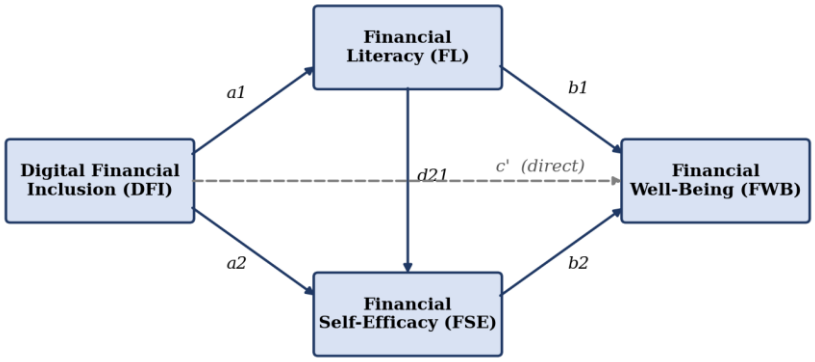


Figure 1. Conceptual model: DFI → Financial Literacy (a1) and Financial Self-Efficacy (a2); Literacy → Self-Efficacy (d21); Literacy → FWB (b1); Self-Efficacy → FWB (b2); direct path DFI → FWB (c').

3.6 Additional hypotheses for group comparisons

The mediation model is complemented by categorical and group-level tests, which show where inclusion is unevenly distributed and whether the outcome differs between inclusion tiers. DFI scores are split into tertiles (Low, Medium, High), financial literacy at its median.

H5: DFI level is associated with place of residence (urban or rural), reflecting a digital divide.

H6: DFI level is associated with financial literacy level.

H7: Mean financial well-being differs across DFI levels, rising from Low to High.

H8 (exploratory): Mean financial well-being differs across education groups. No direction is predicted, because earlier evidence on education and subjective well-being is mixed.

4. Research Methodology

4.1 Research design

The study uses a quantitative, cross-sectional, survey-based design grounded in a post-positivist paradigm. Hypotheses are tested with covariance-based structural equation modelling (CB-SEM), with partial least squares SEM as a robustness check if sample size or non-normality warrants it.

Structural equation modelling is the recommended primary approach for the full study. For transparency and replication, the paper also reports a complementary analysis built from chi-square tests, one-way ANOVA and regression-based mediation, which can be reproduced in Excel (Section 4.6). Section 5 reports this Excel-based analysis.

4.2 Population, sampling and sample size

The target population is adults (18 and above) who hold at least one formal account and have used at least one digital financial service in the previous 12 months, in [study region, e.g., selected districts of a state in India]. A multi-stage sampling approach is proposed: districts are stratified by urban/rural character and digital infrastructure; within each, villages or wards are selected randomly; and households are then selected systematically with one eligible adult interviewed per household. Quotas on gender and age are used to avoid skew.

Sample size is guided by (a) a ratio of at least 10 respondents per estimated parameter, (b) conventional SEM guidance of 300 or more cases for models of this complexity and (c) a priori power analysis for indirect effects. Target N = [ ], allowing for 10 to 15 per cent attrition from incomplete or invalid responses.

4.3 Measures

All constructs are measured with multi-item reflective scales on 5-point or 7-point Likert formats, adapted from established instruments and translated and back-translated into the local language(s). Items below indicate the intended content; final wording will follow the sources cited.

Construct	Operationalisation	Illustrative content	Basis
Digital financial inclusion	Second-order construct: access, usage, quality	Availability of mobile/internet and accounts; frequency of digital payments, savings, credit, insurance use; affordability, trust, ease of use	Adapted from Global Findex indicators and prior DFI index work
Financial literacy	Knowledge, behaviour, attitude, plus digital items	Interest, inflation, diversification questions; budgeting and bill-paying behaviours; recognising fraud and understanding digital fees	OECD/INFE toolkit (Atkinson & Messy, 2012); Lusardi & Mitchell (2014)
Financial self-efficacy	Confidence in financial tasks	Confidence in handling an unexpected expense, sticking to a budget, achieving savings goals	Lown (2011) Financial Self-Efficacy Scale
Financial well-being	Control, resilience, goals, freedom	Ability to cover expenses, absorb a shock, feel on track for goals, enjoy life	CFPB (2015) Financial Well-Being Scale

A pilot test with 30 to 50 respondents will check item clarity and preliminary reliability.

4.4 Data collection

Data are collected through trained enumerators using tablet-based or paper questionnaires, with informed consent, voluntary participation and assurance of anonymity. Ethical approval will be sought from the relevant institutional review board before fieldwork. Financial questions are sensitive, so no account numbers or identifying financial details are collected.

4.5 Analytical strategy

1. **Data screening:** missing data, outliers, normality (skewness and kurtosis) and multicollinearity (VIF).
2. **Common method bias:** procedural remedies (anonymity, separated scale sections, varied anchors), Harman's single-factor test and a common latent factor or marker-variable check (Podsakoff et al., 2003).
3. **Measurement model (CFA):** standardised loadings above 0.60 to 0.70, composite reliability and Cronbach's alpha above 0.70, average variance extracted above 0.50 (Fornell & Larcker, 1981), and discriminant validity via the Fornell–Larcker criterion and HTMT ratio. Measurement invariance across gender and rural/urban groups is tested.
4. **Structural model:** fit assessed by χ^2/df, CFI, TLI, RMSEA and SRMR, using conventional cut-offs as guidance rather than rigid rules.
5. **Mediation testing:** indirect effects are estimated with 5,000-resample bootstrapping and bias-corrected 95 per cent confidence intervals rather than the Sobel (1982) test, because bootstrapping does not assume a normal sampling distribution of the product term (Hayes, 2018). Partial versus full mediation is judged from the significance of the direct effect.
6. **Robustness and endogeneity:** alternative operationalisations (formative DFI index, objective usage measures where available), controls for prior financial status, and instrumental-variable or propensity-score approaches if suitable instruments (e.g., local network coverage, agent density) are available. Alternative orderings of the mediators are tested to examine the plausibility of the serial path.
7. **Moderation (exploratory):** multi-group analysis by gender, age group, education and rural/urban residence.

4.6 Tests implemented in Excel

All tests are built with live formulas in the accompanying workbook, so pasting real survey scores into the Data sheet recalculates every table. Results were cross-checked against Python (numpy, scipy) to four decimals.

Test	Purpose	Excel implementation	Decision rule
Chi-square test of independence	H5, H6: association between categorical variables	COUNTIFS for observed counts; expected = row total x column total / N; CHIDIST and CHITEST; Cramer's V for effect size	Reject independence if p < .05; expected counts should be at least 5
One-way ANOVA	H7, H8: difference in mean FWB across groups	AVERAGEIFS, SUMPRODUCT for between and within sums of squares; F = MSB / MSW; FDIST; eta-squared; Bonferroni pairwise t-tests	Reject equal means if p < .05
Simple and multiple linear regression	H1, H2, H3, H4: paths of the mediation model	LINEST with statistics; t = B / SE; TDIST; standardised beta; adjusted R-squared; VIF from the inverse correlation matrix	Coefficient significant if p < .05; VIF below 5
Mediation	Indirect effects	Products of path coefficients; Sobel z; percentile bootstrap (5,000 resamples, run offline)	Mediation supported if the bootstrap interval excludes zero

Data used for the demonstration. Because no survey had been collected when this draft was prepared, the Data sheet contains 400 simulated respondents with plausible associations among DFI, financial literacy, financial self-efficacy and financial well-being (1-5 composite scores) and four demographic variables. This lets the analysis workflow be shown end to end. The simulated associations were built in by design, so the results demonstrate method, not evidence about the real world.

5. Results

Illustrative results: every number in this section comes from a simulated dataset (N = 400, random seed 2026) built to demonstrate the analysis in the accompanying Excel workbook (DFI_FinancialWellbeing_Analysis.xlsx). They are not empirical findings. Replace the Data sheet with real survey scores and update this section from the recalculated sheets before submission.

The analyses show that higher digital financial inclusion is associated with higher financial well-being, and that most of the indirect route runs through financial self-efficacy rather than literacy alone. Analyses were run in Excel (formulas, LINEST, CHIDIST, FDIST, TDIST); results were cross-checked in Python (numpy, scipy) and matched to four decimals. Significance is judged at alpha = 0.05.

5.1 Sample characteristics

Characteristic	Category (n)
Gender	Male 206 (51.5%); Female 194 (48.5%)
Age group	18-30: 126 (31.5%); 31-45: 169 (42.3%); 46+: 105 (26.2%)
Education	Secondary or below 156 (39.0%); Graduate 168 (42.0%); Postgraduate 76 (19.0%)
Residence	Urban 182 (45.5%); Rural 218 (54.5%)

5.2 Descriptive statistics and correlations

All four composites sit near the scale midpoint and are approximately normal (skewness between -0.08 and -0.02; excess kurtosis between -0.34 and -0.02). Multicollinearity is low: variance inflation factors are 1.40 (DFI), 1.42 (FL) and 1.33 (FSE), well under 5.

Variable	Mean	SD	1. DFI	2. FL	3. FSE	4. FWB
1. DFI	3.31	0.66	1			
2. FL	3.10	0.62	.478	1		
3. FSE	3.15	0.56	.424	.435	1	
4. FWB	3.23	0.60	.448	.355	.481	1

All correlations are significant at $p < .001$ ($N = 400$).

5.3 Chi-square tests of independence

DFI was split into tertiles (Low, Medium, High) and financial literacy at its median. Both tests meet the expected-count rule (smallest expected count 60.1).

Test	Chi-square	df	p	Cramer's V	Decision
DFI level x Residence	13.52	2	.001	.184 (small)	Associated
DFI level x Literacy level	61.82	2	< .001	.393 (medium-large)	Associated

Urban respondents are over-represented in the High DFI tertile (76 urban vs 57 rural) and rural respondents in the Low tertile (88 rural vs 47 urban), which points to a residual digital divide. Among respondents with High DFI, 101 of 133 (75.9%) have High literacy, against 38 of 135 (28.1%) in the Low DFI tertile.

5.4 One-way ANOVA

Outcome: FWB by	Group means (SD)	F	df	p	Eta-squared
DFI level	Low 2.93 (0.52); Medium 3.23 (0.59); High 3.55 (0.53)	42.64	2, 397	< .001	.177 (large)

Outcome: FWB by	Group means (SD)	F	df	p	Eta-squared
Education	Secondary or below 3.23 (0.61); Graduate 3.26 (0.59); Postgraduate 3.17 (0.59)	0.67	2, 397	.514	.003 (negligible)

Bonferroni-adjusted pairwise tests show that every DFI tier differs from the others in financial well-being: Low vs Medium (difference -0.30, $p < .001$), Medium vs High (-0.32, $p < .001$) and Low vs High (-0.62, $p < .001$). No education pair differs (all adjusted $p > .70$), so education alone does not explain well-being differences in this sample.

5.5 Regression and mediation models

Four OLS models estimate the paths in Section 3.5 (unstandardised B, with standard errors in the workbook).

Model	Predictor	B	SE	Std. beta	p	R-squared
1. FWB	DFI (total effect c)	0.405	0.041	.448	< .001	.200
2. FL	DFI (a1)	0.447	0.041	.478	< .001	.228
3. FSE	DFI (a2)	0.236	0.042	.281	< .001	.250
3. FSE	FL (d21)	0.270	0.044	.301	< .001	
4. FWB	DFI (direct c')	0.242	0.045	.267	< .001	.309
4. FWB	FL (b1)	0.081	0.048	.083	.094	
4. FWB	FSE (b2)	0.357	0.052	.331	< .001	

Model 1 is significant, $F(1, 398) = 99.82$, $p < .001$: a one-point rise in DFI is associated with a 0.41-point rise in well-being. Model 4 explains 30.9% of the variance in well-being (adjusted R-squared = .304), $F(3, 396) = 58.97$, $p < .001$. Once self-efficacy is controlled, the literacy coefficient is no longer significant.

Indirect path	Estimate	Sobel z (p)	Bootstrap 95% CI	Share of total effect
DFI > FL > FWB	0.036	1.66 (.097)	[-0.006, 0.077]	8.9%
DFI > FSE > FWB	0.084	4.37 (< .001)	[0.050, 0.123]	20.8%
DFI > FL > FSE > FWB (serial)	0.043	4.20 (< .001)	[0.025, 0.065]	10.6%
Total indirect	0.163		[0.109, 0.217]	40.3%
Direct effect c'	0.242	5.41 (< .001)		59.7%

Bootstrap intervals use 5,000 resamples, computed offline because Excel cannot bootstrap natively. The simple literacy route is not supported (its interval includes zero), while the self-efficacy route and the serial route are. The indirect effects and the direct effect add up to the total effect of 0.405.

6. Discussion

This section interprets the illustrative results in Section 5. Because the data are simulated, the conclusions show how to read each output, not claims about real households.

6.1 Interpreting the direct and indirect effects

Digital financial inclusion is positively and significantly related to financial well-being, and the relationship is partly mediated. A one-point rise in DFI goes with a 0.41-point rise in well-being (H1). About 60% of that effect stays direct (c' = 0.24) and about 40% (0.16) runs through literacy and self-efficacy. This pattern fits the capability approach: access and use matter in themselves, through lower transaction costs and safer saving, but a sizeable share of the benefit depends on conversion factors. The significant direct effect also signals channels the model leaves out, such as income stability, social networks, or specific products like digital savings and insurance, which future work should measure separately. The chi-square result for DFI level and residence adds a caution: rural respondents are concentrated in the lowest tier (88 of 135 vs 47 urban), so a positive average effect can coexist with widening gaps.

6.2 The relative role of literacy and self-efficacy

The two mediators do not carry equal weight. Self-efficacy is the stronger pathway (indirect effect 0.084, 20.8% of the total). The simple literacy route is not significant (0.036, interval includes zero), and literacy has no independent effect on well-being once self-efficacy is controlled (b1 = 0.081, p = .094). Literacy matters mainly by building confidence: it strongly predicts self-efficacy (d21 = 0.270), and the serial path from DFI through literacy and self-efficacy to well-being is significant (0.043, 10.6%). This sequencing supports social cognitive theory, in which knowledge is a source of efficacy beliefs and the beliefs translate into felt control and security. The group results agree: High-DFI respondents are far more likely to have high literacy (75.9% vs 28.1% in the Low tier), and well-being rises steadily across tiers (2.93, 3.23, 3.55). Education programmes that raise knowledge without building confidence may therefore fall short. With real data, self-efficacy running well ahead of literacy should also be checked as a possible sign of overconfidence.

6.3 Heterogeneity

The education ANOVA found no difference in mean well-being across education levels ($F(2, 397) = 0.67$, $p = .514$), which suggests that inclusion and confidence, not formal schooling alone, differentiate well-being in this illustrative sample. The urban-rural pattern in DFI tiers is stronger (Cramer's V = .18). With real data, multi-group SEM or interaction terms by gender, age and residence should be tested, after checking measurement invariance, so that interventions can be targeted rather than uniform.

6.4 Theoretical contributions

The study (i) extends the capability approach empirically by operationalising literacy and self-efficacy as conversion factors, (ii) links human capital and social cognitive perspectives in one model, and (iii) clarifies whether the cognitive route (literacy) precedes the motivational route (efficacy) in the DFI–well-being relationship.

6.5 Practical and policy implications

Policymakers and regulators: pair account-opening and payment-rail expansion with national financial and digital literacy programmes; set consumer-protection and disclosure standards for digital credit; measure success by well-being and active, safe use rather than account counts alone.

Fintech and bank providers: embed contextual education, plain-language fee and repayment disclosures, and nudges in apps; design for low-literacy and vernacular users; build in early success experiences and error-forgiving flows that foster self-efficacy; provide accessible grievance redress.

Educators and NGOs: use experiential, practice-based training (simulated transactions, budgeting tools) that builds both knowledge and confidence, delivered through trusted community channels, with particular attention to women, older adults and rural users.

7. Limitations and Directions for Future Research

First, the cross-sectional design limits causal inference; mediation in cross-sectional data reflects statistical rather than temporal ordering, and reverse causality is plausible (people with higher well-being or self-efficacy may adopt DFS more readily). Longitudinal panels, difference-in-differences designs around product roll-outs and randomised financial education interventions would strengthen causal claims. Second, self-reported measures are subject to social desirability and common method bias, and subjective well-being may diverge from objective indicators such as savings, debt-to-income ratios or shock recovery; future work could combine survey data with transaction records. Third, findings from one region may not generalise across institutional, cultural and infrastructural contexts, so comparative multi-country studies are warranted. Fourth, DFI is complex and may require disaggregation by product type (payments, savings, credit, insurance), since digital credit and payments may relate to well-being in opposite ways. Finally, future work might test additional mediators or moderators such as financial stress, trust in technology, cyber-fraud experience, social norms and gender.

Limitations specific to this draft. The results in Section 5 are simulated and the associations were built in by design, so the p-values show how the tests behave, not how easily such effects appear in real data. Sobel tests assume normally distributed indirect effects, and the bootstrap intervals were computed outside Excel. Tertile and median splits discard information and are used only for the chi-square and ANOVA illustrations; the regressions use the continuous scores. Regression was run on composite scores, so measurement error in the scales is not modelled; latent-variable SEM would address this.

8. Conclusion

Digital financial inclusion is often celebrated for expanding access to formal finance, but its welfare gains depend on whether people can understand and confidently use what they access. This paper proposes and outlines the testing of a model in which financial literacy and financial self-efficacy transmit the benefits of DFI to financial well-being, both separately and in sequence. By shifting attention from access to capability, the framework offers a more complete account of when digital inclusion improves lives, and suggests that policy and product design should invest jointly in infrastructure, knowledge and confidence.

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