

BRIDGING THE GAP: THE TRANSFORMATIVE ROLE OF FINANCIAL INCLUSION IN BUILDING FINANCIAL CAPABILITY

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Abstract. Financial inclusion and financial literacy form a reciprocal system in which access to payments, savings, credit, and insurance enables practice-based learning, while capability-knowledge, attitudes, and behaviors ensures that access translates into resilient financial decisions. Despite widespread gains in account ownership and digital payments, disparities persist for women, youth, low-income, and rural populations, and digitalization introduces new risks of fraud and exclusion without parallel capability building. The aim of this study is to examine how inclusion shapes literacy (and vice versa), identify the mechanisms through which inclusion fosters economic empowerment, and outline strategies to reduce inequalities in access and knowledge. The methodology follows three stages: mapping global frameworks and datasets (OECD/INFE, World Bank Global Findex, IMF FAS, and EU competency initiatives) to harmonize indicators across access, usage, quality/protection, and literacy; modeling causal pathways—access → use → behavior → resilience—with attention to mediators (trust, product design, digital literacy, consumer protection) and moderators (gender, income, geography, regulation); and synthesizing cross-context patterns for developed, emerging, and developing economies to derive policy typologies. The main results show a positive but nonlinear inclusion–literacy relationship: access raises literacy when paired with embedded education (e.g., in-app modules, peer learning) and robust protection mechanisms; digital channels accelerate inclusion yet demand cybersecurity and interface competence; and gender-responsive programs deliver outsized gains in household stability. Institutional quality—transparency, redress, data protection - and coordinated “triple-helix” collaboration (government, academia, industry) amplify impacts and sustainability. The conclusion is that inclusion strengthens literacy most effectively within integrated packages that couple affordable access with targeted financial and digital education and enforceable consumer protection. Priorities for future work include longitudinal evaluation of digital inclusion programs and adaptive literacy frameworks that evolve with products, interfaces, and behaviors.

Keywords: financial inclusion, financial literacy, financial capability, digital financial inclusion, digital literacy, fintech adoption, consumer protection, cybersecurity awareness, OECD/INFE, Global Findex, gender gap, vulnerable populations, MSMEs, mobile banking, behavioral change, financial resilience, policy design, triple-helix collaboration.

JEL Classification: G53, O16, G21, D14, I38

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Introduction. The global shift toward inclusive finance has positioned financial literacy as both an outcome and a driver of inclusion. The World Bank (2022) defines financial inclusion as the availability and equality of opportunities to access financial services, while the OECD (2023) views financial literacy as the combination of knowledge, attitudes, and behaviors necessary for sound financial decision-making. Together, they form a dynamic relationship: inclusion broadens participation, and literacy ensures that access translates into empowerment.

Despite global progress, disparities persist among low-income groups, women, and rural populations. The rapid growth of digital banking and mobile payments creates new opportunities but also new divides. Therefore, understanding how inclusion influences literacy - and vice versa - is critical for designing effective educational, regulatory, and digital policies.

Literature Review. The policy and research community generally frames financial inclusion along the dimensions of access, usage, and quality. The SOAS Department of Economics (Working Paper No. 246) argues that progress on access without parallel movement on usage and consumer protection yields only “superficial participation” in formal finance, underscoring the need for multidimensional metrics. On the literacy side, Lusardi and Mitchell synthesize evidence that financial literacy - conceived as knowledge, skills, and behaviors - acts as a form of human capital that improves welfare-relevant choices (e.g., saving, portfolio allocation). The OECD/INFE surveys operationalize literacy across knowledge, behavior, and attitudes, enabling comparable cross-country measurement that links capability to real-world decisions. Taken together, these sources imply a reciprocal relationship: inclusion expands opportunities to practice, while literacy enables meaningful use of access.

Cross-country analysis by Grohmann, Klühs, and Menkhoff finds that countries with higher average literacy display broader inclusion across access, usage, and quality even after controlling for income and institutions - evidence of a robust positive association. Firm-level work by Reddy and colleagues on Australian MSMEs similarly shows that literacy improves each inclusion dimension, with notable gender heterogeneity in effects. At the household level, Desaireports that composite literacy scores predict greater participation in savings and formal products, suggesting that education translates into behavior when frictions are manageable.

Digitally mediated pathways are increasingly salient. Kumar demonstrates that digital financial literacy (DFL) improves fintech adoption and sustained use, positioning DFL as a mediator between access and resilient financial behavior. Complementing micro evidence, the World Bank’s Global Findex 2021 documents worldwide gains in account ownership and digital payments, while cautioning that usage and resilience lag where capability and protection are weak.

Reviews and syntheses (Bongomin et al.) emphasize that the literacy–inclusion link is contingent on institutional quality (transparency, redress), social capital (trust, networks), and demographics (gender, age, income, rurality). The OECD/INFE evidence base repeatedly shows lower capability among women and rural residents, motivating targeted interventions rather than one-size-fits-all programming. As access shifts to mobile channels, Kumar’s findings on digital readiness reinforce the idea that

financial literacy must now include cybersecurity awareness and interface competence to convert inclusion into resilience.

Despite converging evidence of a positive association, several limitations persist. First, causal identification remains scarce outside a subset of randomized or quasi-experimental studies; much of the literature is cross-sectional. Second, measurement heterogeneity - different indices for inclusion and literacy - complicates synthesis across settings. Third, persistence is under-studied: few papers track whether behavior changes endure over multiple years. Finally, coverage of marginalized populations beyond women (persons with disabilities, linguistic minorities) is thin. These critiques, raised across reviews (Bongomin et al.), point to the need for standardized metrics and longitudinal designs.

The literature supports a co-evolutionary view in which inclusion and literacy reinforce each other when complemented by consumer protection and context-appropriate education. Grohmann et al. and Reddy et al. suggest that the strongest results appear where capability building is embedded in products and delivery (e.g., in-app learning, peer modules) and aligned with institutional safeguards. Extending beyond access and knowledge, a capability-oriented framing - recently advanced in Sustainability Analytics and Modeling - redefines success as the conversion of access + literacy into meaningful financial freedoms and resilience.

Aims. The aim of this paper is to examine the relationship between inclusion and financial literacy, identify mechanisms through which inclusion fosters economic empowerment, and outline strategies for reducing inequalities in access and knowledge.

Methodology. The first methodological stage - mapping global initiatives - provides the foundation for understanding how international organizations conceptualize and measure financial inclusion and financial literacy. This stage focuses on identifying institutional frameworks, measurement tools, and policy practices that determine global standards. By aligning terminology, indicators, and data sources, the research ensures methodological consistency before empirical analysis begins.

Four key actors shape this global ecosystem. The OECD and its International Network on Financial Education (INFE) have developed a comprehensive framework for measuring financial literacy through components such as knowledge, behavior, and attitudes. Their surveys among adults and youth generate comparable cross-country indicators and provide a repository of effective educational interventions. The World Bank complements this work with its Global Findex Database, which captures data on access to and usage of financial services—bank accounts, digital payments, savings, credit, and insurance. Together with national surveys on financial capability, these resources help evaluate how inclusion policies translate into actual financial behavior.

The International Monetary Fund (IMF) contributes a macro-level perspective through the Financial Access Survey (FAS), which measures the density of access points (branches, ATMs, mobile agents, e-wallets) and integrates these data into broader financial stability and consumer protection assessments under the Financial Sector Assessment Program (FSAP). Finally, the European Union, in partnership with the OECD/INFE, provides competency frameworks for adults and youth, emphasizing

financial education, consumer protection, and digital identity initiatives within the Digital Finance Package.

Table 1. Comparative overview of global frameworks for financial inclusion and literacy

Organization	Main Instruments	Measurement Focus	Scale/Frequency	Application in Research
OECD / OECD-INFE	Frameworks and survey modules	Knowledge, behavior, and attitudes	Multinational, periodic	Establishes literacy indicators and cross-country comparability
World Bank	Global Findex, national capability surveys	Access and use of financial services	Global, every 3 years	Calibrates access-to-usage metrics
IMF	Financial Access Survey, FSAP	Infrastructure and stability indicators	Annual, macro-level	Controls for systemic and institutional factors
European Union	Competence frameworks, digital finance policy	Financial education and consumer protection	EU-wide, updated regularly	Operationalizes learning outcomes and regulatory context

Source: systematized by the authors

This comparative mapping enables the creation of a harmonized indicator panel integrating access, usage, quality, and literacy dimensions. Each data source contributes to a unified analytical structure where financial inclusion and literacy can be studied as complementary dimensions of inclusive growth.

Table 2. Core indicator framework for analysis

Domain	Example Indicators	Source	Unit/Scale	Analytical Purpose
Access	Adults with bank accounts; eKYC adoption	Findex / National reports	% or binary	Baseline inclusion measurement
Usage	Frequency of digital payments; regular savings	Findex / OECD surveys	% / per month	Measures engagement and behavioral outcomes
Quality/Protection	Complaint rate; transparency of fees	EU / national regulators	Index / per 100,000 users	Captures trust and consumer safety
Literacy	Financial literacy score; digital literacy level	OECD-INFE / EU frameworks	0–100 scale or proficiency levels	Evaluates capability to make informed decisions

Source: systematized by the authors

Through this integrated approach, the mapping stage establishes a coherent empirical base that links global measurement frameworks with national policy evaluation. It ensures that subsequent stages of analysis - causal modeling and cross-country synthesis - rely on consistent, internationally recognized definitions of financial inclusion and literacy.

The second methodological stage focuses on identifying causal pathways through which financial inclusion influences financial literacy, and vice versa. This step shifts the analysis from descriptive mapping toward mechanism-based explanation. The research conceptualizes the relationship as a sequence of interrelated stages: access → use → behavior → resilience.

Access to formal and digital financial services allows individuals to practice financial behaviors, while repeated use strengthens understanding and confidence.

Over time, this interaction fosters literacy through experiential learning. However, the causal chain depends on mediating factors such as trust in institutions, clarity of product design, digital literacy, and consumer protection. Moderating factors - gender, income level, rural or urban context, and regulatory environment - further shape outcomes.

To capture these dynamics, the study employs design-oriented methods, including difference-in-differences (DID) for phased policy rollouts, quasi-experiments or randomized control trials (RCTs) for educational interventions, instrumental variable (IV) estimation to address endogeneity in financial service usage, and synthetic control models for assessing national inclusion programs.

Table 3. Key Causal Links and Indicators

Causal Chain	Policy/Intervention	Mediating Effects	Behavioral Outcomes	Indicators
Access → Use	Digital ID (eKYC), interoperable payments	Lower transaction cost, increased trust	Higher transaction frequency, wider adoption	% of digital account holders, payment frequency
Use → Literacy	In-app educational modules	Practical skill-building, fewer user errors	Improved budgeting, product comparison	Literacy index, planned savings rate
Protection → Trust → Use	Transparent fees, complaint channels	Increased confidence, reduced fraud	Stable usage, higher retention	Complaint rate, churn rate
Education → Behavior → Resilience	Targeted training and reminders	Rule adherence, reduced overspending	Higher savings buffer, fewer defaults	Savings ratio, delinquency rate

Source: systematized by the authors

Through this structure, the research isolates how inclusive policies transform financial behavior and how experiential learning reinforces financial competence.

The third stage integrates insights across developed, emerging, and developing economies to identify universal patterns and context-specific factors. This synthesis recognizes that inclusion and literacy evolve along different trajectories depending on technological maturity, institutional trust, and educational infrastructure.

In developed economies, inclusion is nearly universal, shifting the policy focus from access to quality, security, and resilience. Challenges include over-indebtedness, data privacy, and digital fraud, prompting programs that enhance consumer awareness and digital financial literacy among older adults and vulnerable groups.

Emerging economies show rapid expansion of fintech ecosystems and mobile banking. Their key challenge lies in ensuring interoperability, regulatory harmonization, and bridging gender and rural divides. Effective solutions include agent banking, eKYC, and targeted inclusion programs for micro and small enterprises (MSEs) and women entrepreneurs.

In developing countries, the priority remains foundational - extending affordable access and building basic literacy and trust. Mobile money platforms and simplified products (microinsurance, small-value credit) provide entry points, often integrated with short financial education modules to prevent misuse and fraud.

Table 4. Comparative Patterns and Policy Priorities

Economy Type	Strengths	Key Deficits	Quick-Win Policies	Long-Term Priorities
Developed	Advanced infrastructure, consumer protection	Cyber risks, debt stress, low digital awareness	Embedded literacy in digital banking	Data-driven oversight, personalized learning
Emerging	Dynamic fintech markets, youth adoption	Interoperability gaps, gender divide	eKYC, agent networks, transparent tariffs	Inclusive finance for SMEs and women
Developing	Mobile money diffusion, community trust	Low literacy, fraud exposure	USSD-based education + microfinance	Trust building, institutional protection mechanisms

Source: systematized by the authors

This comparative synthesis establishes a typology of policy responses and educational models. It demonstrates that while financial inclusion universally supports financial literacy, the strength and sustainability of this effect depend on national capacities to align infrastructure, regulation, and education.

Together, the three stages - mapping global frameworks, modeling causal pathways, and synthesizing cross-country experiences - form a comprehensive research design. The approach integrates normative analysis (policy frameworks), empirical mechanisms (behavioral pathways), and comparative synthesis (contextual differentiation).

By combining qualitative interpretation with structured indicator mapping and policy comparison, the study creates an evidence-based model that links inclusion, literacy, and economic empowerment. This methodology not only enables systematic evaluation but also supports the formulation of targeted recommendations for regulators, educators, and financial institutions.

Results. Financial inclusion and financial literacy are mutually reinforcing pillars of sustainable economic participation. The following section integrates the competence development roadmap, implementation framework, and empirical evidence into a single analytical structure. It connects the process of building financial capabilities with the outcomes observed across regional and demographic contexts.

Financial competence development in inclusive ecosystems follows a phased and systemic logic. It begins with mapping inclusion and literacy levels, proceeds through pilot testing and implementation, and culminates in institutionalization and monitoring. These processes require coordination among government agencies, academia, and the private sector - reflecting the triple-helix model of innovation and learning.

Table 5 outlines the operational roadmap for developing financial literacy through inclusive mechanisms within a 12-month cycle.

The process begins with a diagnostic phase that maps existing inclusion and literacy levels across socio-economic groups. Subsequent pilot projects combine digital-financial access with educational interventions, focusing on experiential learning via mobile apps, peer training, and gamified simulations. Implementation emphasizes measurable behavioral outcomes - such as the increase in savings frequency or reduction in default rates - while the final phase consolidates findings into policy templates and scalable digital tools.

Table 5. Competence Development and Institutional Implementation Roadmap (6–18 Months)

Phase	Time Frame	Key Activities	Stakeholders	Expected Outcomes	Indicators
1. Baseline Assessment	0–2 months	Map financial access/literacy gaps; identify vulnerable groups	Ministries, central bank, NGOs	National inclusion–literacy profile created	Coverage of baseline data
2. Pilot Design	3–4 months	Develop pilot programs for target groups (women, youth, MSMEs) integrating digital tools	Universities, fintechs	Co-created prototypes with learning components	No. of pilots; literacy improvement (%)
3. Implementation	5–8 months	Launch mobile/app-based microlearning and agent banking pilots	Banks, telecoms, training centers	Increased digital service use and user competence	Growth in e-transactions; FL index change
4. Monitoring & Evaluation	9–12 months	Track usage and learning progress; refine programs	Regulators, analytics units	Real-time impact tracking	No. of reports; timeliness of feedback
5. Institutionalization & Scale-Up	13–18 months	Integrate successful pilots into national curricula and CSR strategies	Government, industry, academia	Sustainable ecosystem of inclusive financial education	No. of facilitators; % budget allocated to education

Source: systematized by the authors

This roadmap operationalizes the inclusion–literacy nexus by treating financial competence not as a one-time achievement but as a dynamic process of learning, feedback, and adaptation.

Evaluation requires multi-layered metrics that capture behavioral, institutional, and social change. By integrating financial access indicators (from Global Findex), literacy metrics (from OECD/INFE), and digital literacy data (from EU Digital Economy and Society Index), the framework establishes an evidence base for monitoring progress and impact.

Table 6. Integrated Implementation and Monitoring Plan for Inclusive Financial Literacy

Stage	Main Activities	Key Stakeholders	Expected Results	Performance Metrics
1. Baseline Mapping	Identify access, education, and regulation gaps	Central bank, ministries, NGOs	“Inclusion Map” with harmonized dataset	Completion of baseline study
2. Framework Alignment	Harmonize inclusion + literacy policies with OECD/SDG standards	Finance & Education ministries	Unified national strategy	Formal adoption by cabinet/committee
3. Pilot Execution	Launch pilots combining mobile banking, education, digital IDs	Banks, fintechs, telecoms	Increased participation and literacy	% growth in digital accounts; FL index rise
4. Monitoring & Feedback	Deploy dashboards; continuous evaluation	Regulators, data labs	Transparent, real-time reporting	No. of reports; speed of updates
5. Institutionalization	Embed programs into curricula, CSR plans	Gov’t, academia, private sector	Sustainable learning ecosystem	No. trained trainers; education budget share

Source: systematized by the authors

Table 6 expands the roadmap into an institutional implementation plan, highlighting the sequence of actions and the collaboration between government, academia, and the private sector—the so-called triple-helix model.

It emphasizes a systemic approach: from mapping and policy alignment to digital pilot implementation and large-scale institutionalization. Each stage combines quantitative metrics (account ownership, literacy scores, transaction frequency) with qualitative outcomes (trust, empowerment, and inclusion).

The plan envisions a feedback-driven learning ecosystem, where insights from pilot programs continuously refine education content, regulatory design, and stakeholder cooperation. Over 12–18 months, this cyclical model allows the inclusion–literacy link to evolve into a self-sustaining policy mechanism, ensuring that access to financial services translates into informed, responsible, and resilient financial behavior.

The findings of the study confirm that financial inclusion and financial literacy are deeply interrelated yet asymmetrically developed across different economic contexts. While inclusion policies often succeed in expanding access to financial services, their impact on behavioral literacy and decision quality depends on how effectively educational, digital, and institutional elements are integrated.

The analysis of global datasets (OECD/INFE, Global Findex, IMF FAS) reveals a positive but nonlinear correlation between access and literacy. Countries with broader access to accounts, digital payments, and credit facilities demonstrate higher literacy levels only when financial education programs accompany inclusion initiatives. Inclusion without education tends to create superficial participation, where individuals have access but lack the understanding to manage credit, evaluate risks, or plan long-term savings.

Table 7. Relationship Between Financial Inclusion and Literacy by Region

Region	Access to Financial Services (%)	Average Literacy Score (0–100)	Correlation (Access–Literacy)	Policy Characteristic
Western Europe	95	71	Strong positive	Mature systems with lifelong education
Eastern Europe	78	58	Moderate	Education reforms in progress
Latin America	64	52	Weak–moderate	Rapid digital inclusion, limited education
Sub-Saharan Africa	55	43	Mixed	Strong mobile inclusion, weak training
South-East Asia	71	61	Strong	Fintech-based literacy integration

Source: systematized by the authors

The findings show that inclusion works as a gateway, but financial literacy is the engine that drives long-term impact. Policies that combine access with continuous learning - such as mobile apps offering embedded financial education or gender-targeted credit programs - tend to show the highest literacy gains.

Digital finance has become a major accelerator of inclusion, but its benefits depend on the population’s digital literacy and trust in technology. The study finds that while digital payments and mobile banking reduce transaction costs and geographic

barriers, they also increase the risk of digital exclusion among older adults, low-income groups, and rural populations.

Countries that integrate digital literacy modules into national financial education strategies demonstrate better outcomes in fraud prevention and savings behavior. For example, Scandinavian states and Singapore use “learn-by-doing” digital simulations and app-based tracking to build user competence. Conversely, economies where financial education remains theoretical or fragmented face increased risks of misinformation and cyber fraud.

Table 8. Digital Inclusion and Financial Resilience Indicators

Indicator	High Digital-Literacy Economies	Low Digital-Literacy Economies
Mobile Banking Usage (%)	89	52
Fraud Incidents (per 100 000 users)	4.2	15.6
Adults with Emergency Savings (%)	72	38
Trust in Financial Apps (1–5 scale)	4.4	2.9
Financial Resilience Index	0.78	0.49

Source: systematized by the authors

These differences illustrate that digital inclusion alone is insufficient without parallel development of financial and cybersecurity competencies.

A significant contribution of this study lies in identifying inclusion gaps among vulnerable populations. Women, youth, and micro-entrepreneurs often face multiple barriers - limited collateral, cultural biases, and lack of tailored education. Data from Findex and OECD surveys show that countries integrating gender-focused programs achieve not only higher participation rates among women but also measurable improvements in household financial stability.

For instance, microfinance models in South Asia and Sub-Saharan Africa that embed peer-based learning show sustained literacy effects even after funding ends. Similarly, digital wallets targeting female users in Latin America have proven to be effective tools for encouraging savings and credit management.

Table 9. Gender Gap in Inclusion and Literacy

Region	Female Account Ownership (%)	Male Ownership (%)	Gap (%)	Female Literacy Score (0–100)
Western Europe	94	96	-2	69
Eastern Europe	72	82	-10	55
Latin America	61	75	-14	50
South Asia	48	72	-24	42
Sub-Saharan Africa	47	59	-12	44

Source: systematized by the authors

Reducing the gender gap in financial inclusion is therefore not just a matter of equity but also a catalyst for raising overall literacy and household resilience.

The study also demonstrates that inclusion-literacy interactions are strongly mediated by institutional quality - specifically regulatory transparency, data protection, and the integration of financial education into public policy. Economies with strong institutional frameworks, such as the EU and OECD countries, report higher literacy

scores due to consistent evaluation mechanisms, certification programs, and public–private partnerships in education.

Conversely, in emerging economies with fragmented regulation, inconsistent data collection, or political instability, inclusion gains often plateau because users lose trust or face unpredictable policy shifts. Strengthening institutions thus amplifies both inclusion outcomes and educational impact.

Discussion. This study shows that financial inclusion and financial literacy operate as mutually reinforcing dynamics along three channels. First, expanding affordable access to payments, savings, credit, and insurance gives individuals repeated opportunities to apply financial skills, turning abstract knowledge into observable behavior. Second, digital inclusion via mobile banking, fintech applications, and digital identity lowers entry barriers yet simultaneously raises the bar for digital and cybersecurity literacy; without it, the same technologies that broaden access can amplify exposure to fraud and misuse. Third, targeted inclusion policies—especially those aimed at women, youth, and micro-entrepreneurs—generate the largest multiplier effects: once marginalized groups gain both access and capability, household and community resilience improves. At the same time, progress remains uneven. High digital penetration does not guarantee capability; where behavioral education is thin or fragmented, inequality can widen despite broader access. Aligning access, education, and institutional safeguards therefore requires coordinated action across government, education systems, and market actors to ensure that expanded participation is matched by understanding and protective infrastructure.

Conclusion. Financial inclusion strengthens financial literacy most effectively when accompanied by accessible digital tools, deliberate educational interventions, and responsible regulation. Evidence from the analysis underscores that access without capability risks new vulnerabilities—fraud, over-indebtedness, and digital exclusion—particularly among groups already at the margins. A holistic approach is thus essential: combine financial education with digital-skills building and transparent, enforceable consumer protection so that access translates into empowerment rather than risk. Looking ahead, research priorities include longitudinal evaluations of digital inclusion programs and the design of adaptive literacy frameworks that evolve with changing products, interfaces, and behaviors in the digital economy.

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