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Regulating FinTech Innovation for Gender-Inclusive Financial Systems: Legal Perspectives on Digital Payments, Consumer Protection, and Socioeconomic Barriers to Financial Inclusion

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Abstract:

Digital financial services have driven the most significant expansion of global financial inclusion in a generation, yet the legal and regulatory frameworks governing this expansion, anti-money laundering and customer due diligence rules, consumer protection regimes, and digital identity requirements, were designed principally around integrity and stability objectives rather than gender-equity objectives, producing a persistent gender gap in account ownership and account usage that regulation has only unevenly addressed. This paper examines the legal and regulatory dimensions of FinTech-enabled financial inclusion through a gender lens, drawing on the World Bank's Global Findex Database, Financial Action Task Force (FATF) guidance on anti-money laundering and financial inclusion, and comparative national case evidence, most notably India's shift to electronic know-your-customer (e-KYC) verification and its documented effect on closing the domestic gender gap in account ownership. The review examines three legal and regulatory dimensions of the gender-inclusion challenge: identity-verification requirements under the FATF's risk-based customer due diligence framework, which have been shown to disproportionately exclude women lacking formal identification documents; consumer protection and digital payment regulation governing the trust and safety of mobile money and digital wallet products through which the majority of newly included women access financial services; and the socioeconomic and legal barriers, including unequal property and inheritance rights, mobile phone ownership gaps, and digital literacy disparities, that regulation alone cannot resolve but that regulatory design can either mitigate or reinforce. A comparative methodology is applied using Global Findex account-ownership and gender-gap data across multiple reporting cycles (2017, 2021, 2024), FATF risk-based approach and tiered customer due diligence guidance, and national regulatory case studies. Reported findings indicate that the global gender gap in financial account ownership narrowed from 9 percentage points in 2017 to 6 points in 2021 before rising to 73% account ownership for women in low- and middle-income economies by 2024, a 7-point increase since 2021, but that roughly 700 million women worldwide remain unbanked, and that regulatory reforms enabling simplified or tiered due diligence, rather than digital payment innovation alone, are the specific legal mechanism most directly and causally linked to documented gender-gap closure in jurisdictions such as India. The paper concludes by discussing the continuing legal tension between financial-integrity regulation and inclusion objectives, and the socioeconomic barriers, mobile phone and smartphone ownership gaps, unequal identification access, and account usage gaps, that persist even where account-ownership gaps have substantially closed.

Keywords: FinTech Regulation, Financial Inclusion, Gender Gap, Digital Payments, Customer Due Diligence, Consumer Protection, Global Findex, Know Your Customer.

I. Introduction

The past decade has produced the most rapid expansion of formal financial inclusion in recorded history, driven substantially by the proliferation of mobile money, digital wallets, and other FinTech-enabled payment products that allow individuals to access basic financial services without the physical branch infrastructure traditional banking historically required [1]. The World Bank's Global Findex Database, the primary global measurement instrument for financial inclusion, documented that account ownership in developing economies rose from 42% in 2011 to 71% by 2021, and that the share of adults globally making or receiving digital payments grew from 35% to 57% of adults in emerging economies over roughly the same period, growth substantially attributable to FinTech and mobile money innovation operating within, and at times ahead of, existing financial regulatory frameworks [2]. This expansion has been accompanied by measurable, though incomplete, progress in closing the persistent gender gap in financial inclusion: the global gender gap in account ownership in developing economies narrowed from 9 percentage points to 6 percentage points between the 2017 and 2021 Global Findex survey rounds, the first such narrowing recorded since the Findex survey began in 2011 [3], [4].

This progress has continued into the most recent survey cycle: the 2025 Global Findex report, covering 2024 data, found that 73% of women in low- and middle-income economies now hold a financial account, a 7-percentage-point increase since 2021, with women's use of accounts for formal saving rising from 22% to 36% and use for digital payments rising from 50% to 58% over the same period [5]. Despite this progress, the same report finds that approximately 700 million women worldwide remain entirely outside the formal financial system, and that significant regional and country-level variation persists beneath the aggregate global trend: Bangladesh and Nigeria each show a 20-percentage-point gender gap in account ownership, Pakistan a 15-point gap, and Tanzania a 13-point gap, even as other jurisdictions, including Indonesia, have effectively eliminated their gender gap in account ownership [3], [5].

The legal and regulatory architecture governing this landscape was not originally designed with gender-equity objectives as a primary consideration. Anti-money laundering and countering the financing of terrorism (AML/CFT) regulation, implemented globally through the standards set by the Financial Action Task Force (FATF), requires regulated financial institutions to conduct customer due diligence (CDD), verifying and documenting customer identity before establishing an account relationship, a requirement whose primary design objective is financial-crime prevention rather than inclusion [6]. The FATF itself has formally recognized, since its original 2013 Guidance on AML/CFT Measures and Financial Inclusion, that an overly cautious, undifferentiated application of these identity-verification standards can produce the unintended consequence of excluding legitimate, low-risk customers from the formal financial system entirely, and World Bank survey data has consistently found that lack of adequate documentation to satisfy identity-verification requirements ranks among the top reasons unbanked adults cite for lacking a financial account, a barrier the FATF's own 2013 guidance and its 2017 supplement specifically identified as disproportionately affecting individuals, including women, in rural areas, the informal economy, and jurisdictions lacking robust national identification infrastructure [6], [7].

This regulatory tension between financial-integrity objectives and inclusion objectives carries a specifically gendered dimension that has only recently received sustained legal and policy attention. Research from the Consultative Group to Assist the Poor (CGAP) has documented that women face compounding, gender-specific barriers to satisfying standard customer due diligence requirements: unequal access to formal identification documents, itself frequently a downstream consequence of unequal property and inheritance rights that leave women without independent proof of address such as a utility bill in their own name, combined with sociocultural constraints on women's mobility and independent access to the government offices where identification documents are issued, meaning that facially gender-neutral CDD rules can operate in practice as a gender-differentiated barrier to account access [8]. The FATF's Recommendation 1 explicitly permits, and its more recent guidance affirmatively encourages, a risk-based approach under which jurisdictions may authorize simplified or tiered customer due diligence measures for demonstrably lower-risk customer segments and product types, an approach that has become the central legal mechanism through which regulators have sought to reconcile financial-integrity and inclusion objectives [9], [10].

The most extensively documented case demonstrating this mechanism's practical effect is India's transition from paper-based to electronic know-your-customer (e-KYC) verification, which research has found reduced the average cost of verifying a customer from approximately $15 to $0.50 and reduced verification processing time from more than five days to seconds, enabling the opening of approximately 340 million new accounts and substantially closing India's gender gap in financial inclusion as part of the broader Jan Dhan financial inclusion program [11]. India's gender gap in account ownership has since fallen by 17 percentage points over the past decade, one of the most significant national-level gender-gap reductions recorded in the Global Findex dataset, a reduction attributed substantially to this specific regulatory reform enabling low-cost, low-friction digital identity verification at account opening [3], [11]. At the same time, India's own data illustrates that closing the account-ownership gap does not automatically close the account-usage gap: women in India remain 17 percentage points less likely than men to use their account to make or receive a digital payment, indicating that regulatory reform targeted at the point of account opening does not by itself resolve gender disparities in subsequent, ongoing financial service usage [4].

Beyond identity-verification regulation, consumer protection frameworks governing the safety, transparency, and dispute-resolution mechanisms available to digital payment and mobile money users constitute a second critical legal dimension of gender-inclusive FinTech regulation, since evidence indicates that trust and safety concerns, including fear of fraud, unauthorized transactions, and inadequate recourse mechanisms, disproportionately deter women, who report lower financial and digital literacy on average and correspondingly greater vulnerability to service-provider or third-party abuse, from adopting and sustaining use of digital financial products even where account access itself is not the binding constraint [12]. This paper synthesizes the legal and regulatory literature addressing customer due diligence and identity-verification regulation, consumer protection frameworks for digital payments, and the broader socioeconomic and legal barriers, including mobile phone ownership gaps and unequal property rights, that regulation intersects with but cannot resolve unilaterally, to provide an integrated legal analysis of gender-inclusive FinTech regulation.

Research Objectives

1. To examine the FATF risk-based customer due diligence framework and its documented gender-differentiated effects on financial account access.
2. To analyze India's e-KYC regulatory reform as a comparative case study of identity-verification regulation's effect on gender-gap closure.
3. To evaluate consumer protection and digital payment regulatory frameworks relevant to women's sustained usage of FinTech products.
4. To assess the socioeconomic and legal barriers, including identification access, property rights, and mobile phone ownership gaps, that intersect with but are not resolved by financial regulation alone.
5. To compare global and national trends in gender-gap closure across successive Global Findex survey cycles and identify the specific regulatory mechanisms associated with documented progress.

II. Literature Review

2.1 The Global Findex Database as the Primary Evidence Base

The World Bank's Global Findex Database, conducted approximately every three years since 2011 through nationally representative surveys, constitutes the primary global evidence base for measuring financial inclusion and its gender dimension, tracking account ownership, account usage patterns, and self-reported reasons for financial exclusion across more than 140 economies [2]. The 2021 round of the Global Findex found that the gender gap in account ownership in developing economies narrowed to 6 percentage points, down from 9 points where it had persisted for the preceding decade, a change substantially associated with the accelerated adoption of digital payments during the COVID-19 pandemic, including government-to-person emergency payment programs that required recipients, including women, to hold a formal account for the first time [3], [4]. The most recent 2025 Findex round, reporting 2024 data, found continued progress, with 73% of women in low- and middle-income economies holding a financial account, a 7-percentage-point increase since 2021, alongside improvement in account-usage indicators including formal savings and digital payment use [5]. Despite this measured progress, the Findex data consistently shows substantial cross-country heterogeneity, with some jurisdictions, including Indonesia, having effectively eliminated their gender gap, while others, including Bangladesh, Nigeria, and Pakistan, retain double-digit percentage-point gaps, indicating that global aggregate progress masks considerably uneven underlying national regulatory and socioeconomic conditions [3], [5].

2.2 The FATF Risk-Based Approach and Customer Due Diligence Regulation

The Financial Action Task Force, the intergovernmental body setting global standards for anti-money laundering and countering the financing of terrorism, requires regulated financial institutions to conduct customer due diligence, verifying customer identity through reliable, independent documentation, before establishing an account relationship, a requirement formalized in FATF Recommendation 10 and reinforced through Recommendation 1's broader risk-based approach [6], [9]. The FATF's own 2013 Guidance on AML/CFT Measures and Financial Inclusion, subsequently supplemented in 2017, explicitly acknowledged that overly cautious, undifferentiated application of these standards can produce unintended financial exclusion, particularly for individuals lacking formal identity documentation, including rural residents, informal-sector workers, and displaced persons such as refugees, and introduced the concept of tiered, or simplified, customer due diligence, under which lower-risk products, such as basic mobile money wallets with capped transaction limits, may be offered with reduced identity-verification requirements, subject to enhanced verification being required as transaction volume or account features expand [7], [10]. Country-level examples cited in FATF guidance include Senegal's mobile wallet providers, which allow basic wallet accounts to be opened with minimal documentation, providing a low-barrier entry point specifically beneficial to financially excluded individuals, disproportionately including women, who lack formal identification [10].

2.3 Gender-Differentiated Barriers Within the Customer Due Diligence Framework

Research from CGAP has specifically examined how facially gender-neutral customer due diligence requirements produce gender-differentiated exclusionary effects in practice, finding that women's lower rates of formal identification document possession frequently trace to underlying legal and socioeconomic conditions, including unequal inheritance and property ownership rights that leave women without independent proof of address, such as a utility bill or property deed in their own name, one of the alternative documentation forms CDD frameworks commonly accept [8]. This research further identifies sociocultural constraints on women's independent mobility and their awareness of available compliance pathways, such as the option to add their own name to a household utility bill to satisfy proof-of-address requirements, as compounding factors that operate independently of any formal legal restriction on women's access to identification, meaning that gender-differentiated CDD outcomes persist even in jurisdictions without explicit legal barriers to women's identification access [8]. This finding directly motivates the FATF's more recent guidance revisions, under which the risk-based approach is framed not merely as a permissive option but as an approach jurisdictions "should allow and encourage" where lower risk is identified, a shift in regulatory posture explicitly informed by evidence of the CDD framework's gender-differentiated exclusionary effects [9], [10].

2.4 India's e-KYC Reform as a Comparative Regulatory Case Study

India's transition from paper-based KYC verification to electronic KYC, leveraging the country's Aadhaar biometric digital identity infrastructure, constitutes the most extensively documented case study of customer due diligence regulatory reform's measurable effect on financial inclusion and gender-gap closure. Research examining this transition found that e-KYC reduced the average cost of verifying a new customer from approximately $15 under paper-based verification to approximately $0.50, and reduced verification processing time from more than five days to a matter of seconds, changes that directly enabled the rapid account-opening scale achieved under India's Jan Dhan Yojana financial inclusion program, through which approximately 340 million new accounts were opened [11]. This regulatory and infrastructure reform is directly credited with substantially closing India's domestic gender gap in financial inclusion, with India's gender gap in account ownership falling by 17 percentage points over the subsequent decade, one of the largest national-level reductions recorded globally in the Global Findex dataset [3], [11]. India's experience simultaneously illustrates the limits of account-opening-focused regulatory reform: despite the substantial account-ownership gap closure, Global Findex data shows women in India remain 17 percentage points less likely than men to use their account to make or receive a digital payment, indicating that the specific regulatory mechanism that closed the ownership gap, low-cost identity verification at account opening, did not by itself address the separate, subsequent challenge of sustained account usage [4].

2.5 Consumer Protection Regulation and Trust in Digital Payment Products

Beyond identity-verification regulation, the legal and regulatory framework governing consumer protection for digital payment and mobile money products constitutes a second critical dimension affecting gender-inclusive financial access, since sustained usage, rather than mere account ownership, depends substantially on user trust in the product's safety, transparency, and available recourse in the event of fraud, unauthorized transactions, or service-provider error [12]. Evidence on the underlying drivers of the gender gap in mobile phone and mobile internet access, prerequisites for most digital financial service usage, indicates that the gender gap in smartphone ownership has, notably, widened rather than narrowed in some measures, rising to 18% in 2021 from 15%, translating to approximately 315 million fewer women than men owning a smartphone, while the gender gap in mobile internet usage stood at 16%, representing approximately 264 million fewer women than men using mobile internet, gaps that constrain women's access to the digital payment products consumer protection regulation governs regardless of the underlying regulatory framework's quality [3].

2.6 Socioeconomic and Legal Barriers Beyond the Regulatory Perimeter

A recurring finding across the literature reviewed is that financial-sector regulation, however well designed, operates within and is constrained by a broader set of socioeconomic and legal conditions that regulation alone cannot resolve, including unequal property and inheritance rights affecting women's ability to independently satisfy documentation requirements, gender gaps in mobile phone and smartphone ownership affecting access to the digital channels through which most FinTech products are delivered, and persistent digital and financial literacy gaps affecting women's capacity to safely and confidently use financial products once access barriers are removed [3], [8]. CGAP research examining the relationship between gender gaps in account ownership and broader economic indicators found that in countries with higher GDP per capita, women who do hold accounts tend to use them at rates approaching those of men, while in lower-income countries, an ownership gap frequently persists alongside an even larger usage gap, indicating that the socioeconomic barriers underlying gender-differentiated financial inclusion operate cumulatively across both the account-access and account-usage stages, and that regulatory reform targeted narrowly at one stage, such as India's e-KYC reform's effect on account opening, may leave the other stage's barriers substantially unaddressed [4], [13].

2.7 Research Gap

While FATF customer due diligence regulation, India's e-KYC case study, and broader Global Findex gender-gap trends have each been documented individually, relatively few legal analyses synthesize these findings within an integrated framework distinguishing which specific regulatory mechanisms are causally associated with account-ownership gap closure versus which broader socioeconomic and legal barriers continue to constrain account-usage gap closure even where ownership gaps have narrowed [4], [8], [11]. Furthermore, most existing literature treats identity-verification regulation and consumer protection regulation as separate policy domains, despite evidence that both jointly determine women's sustained engagement with FinTech products, access alone being insufficient without corresponding trust and safety assurance [6], [12]. This study addresses these gaps by synthesizing customer due diligence regulation, consumer protection frameworks, and underlying socioeconomic barrier evidence within a single integrated legal and regulatory analysis of gender-inclusive FinTech regulation.

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III. Methodology

3.1 Research Design

This study adopts a doctrinal and empirical-comparative legal research design, synthesizing primary regulatory guidance from the FATF, empirical survey evidence from the World Bank's Global Findex Database across multiple reporting cycles, and comparative national case-study evidence, principally India's e-KYC reform, alongside CGAP and related development-finance research examining the gender-differentiated effects of financial regulation.

3.2 Conceptual Framework

The framework applied in this review distinguishes three legal and regulatory dimensions affecting gender-inclusive FinTech access: (1) **identity-verification/customer due diligence regulation**, governing the documentation and risk-based verification standards required to open a formal account; (2) **consumer protection regulation**, governing the safety, transparency, and recourse mechanisms affecting sustained trust and usage of digital financial products once an account is held; and (3) **underlying socioeconomic and legal barriers**, including property and inheritance rights, mobile phone ownership, and digital/financial literacy, which condition both dimensions above but lie substantially outside the direct reach of financial-sector regulation alone. This framework is applied to distinguish which specific regulatory reforms are empirically associated with account-ownership gap closure (Dimension 1) versus which barriers continue to constrain account-usage gap closure (Dimensions 2 and 3) even where ownership gaps have narrowed.

3.3 Data Sources

The literature synthesized in this review draws on the World Bank's Global Findex Database and associated World Bank publications across the 2017, 2021, and 2025 (2024 data) reporting cycles; FATF guidance documents on AML/CFT measures and financial inclusion, including the original 2013 guidance, its 2017 supplement, and subsequent risk-based approach revisions; CGAP research on the gender-differentiated effects of customer due diligence requirements and the relationship between financial inclusion gender gaps and broader economic indicators; and comparative national case-study research on India's e-KYC and Jan Dhan financial inclusion program.

3.4 Analytical Framework

Reviewed evidence was classified according to the three-dimension framework described in Section 3.2, and further organized chronologically across Global Findex survey cycles to track the specific timing and magnitude of gender-gap changes relative to the timing of associated regulatory reforms, such as India's e-KYC implementation, enabling an assessment of which regulatory interventions are most plausibly associated with observed gap-closure trends.

3.5 Evaluation Criteria

Comparative evaluation in this review uses metrics standard in the financial inclusion and development-finance literature: **account-ownership gender gap** (percentage-point difference in formal account ownership between men and women, per Global Findex), **account-usage gender gap** (percentage-point difference in active usage indicators such as digital payment initiation, per Global Findex), **documentation-related exclusion rate** (percentage of unbanked adults citing lack of documentation as a barrier), and **regulatory mechanism type** (standard CDD, simplified/tiered CDD, or digital/biometric e-KYC), used to assess the comparative association between specific regulatory approaches and gender-gap outcomes across the jurisdictions and time periods reviewed.

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IV. Results and Discussion

4.1 Global and Comparative Gender-Gap Trends Across Regulatory Reform Periods

Table I summarizes representative Global Findex gender-gap data across survey cycles, situated alongside the regulatory context relevant to each period and jurisdiction.

Table I. Comparative gender-gap trends in financial account ownership and usage across Global Findex survey cycles

Metric/jurisdiction	2017	2021	2024	Associated regulatory context	Source
Global gender gap, account ownership (developing economies)	9 percentage points	6 percentage points	—	COVID-era digital/government payment expansion	[3], [4]
Women's account ownership, LMICs (aggregate)	—	66% (implied)	73%	Continued digital payment and simplified CDD expansion	[5]
India, gender gap in account ownership	Substantially reduced from pre-reform baseline (17-point decade decline)	—	—	e-KYC reform (Aadhaar-linked biometric verification)	[3], [11]
India, gender gap in digital payment usage (account holders)	—	17 percentage points	—	Usage gap persists despite ownership-gap closure	[4]
Bangladesh, gender gap in account ownership	29%	19%	—	Partial narrowing; documentation barriers persist	[3]
Indonesia, gender gap in account ownership	—	~0 (eliminated)	—	Effective gender parity achieved	[3]
Global smartphone ownership gender gap (GSMA)	—	15%	18% (widening)	Outside financial regulation's direct reach	[3]
Unbanked adults citing documentation as exclusion barrier	~18% (multi-country average, pre-2017 baseline)	—	—	Motivated FATF simplified/tiered CDD guidance	[6], [7]

4.2 Discussion

The comparative evidence in Table I supports a specific and legally significant conclusion: the regulatory mechanism most directly and plausibly associated with the largest documented national-level gender-gap closures, India’s 17-percentage-point decade-long reduction in the account-ownership gap, is identity-verification regulatory reform specifically, the shift from costly, slow paper-based KYC to low-cost, near-instantaneous e-KYC verification, rather than digital payment product innovation considered in isolation [3], [11]. This finding is consistent with the FATF's own stated rationale for encouraging simplified and tiered customer due diligence, and with CGAP's documented evidence that standard CDD documentation requirements disproportionately burden women due to compounding socioeconomic factors, including unequal property rights affecting independent proof-of-address access [7], [8]. The comparative persistence of a 17-percentage-point usage gap in India even after the ownership gap substantially closed, however, demonstrates that identity-verification regulatory reform, while apparently sufficient to address the account-opening barrier, is not by itself sufficient to close the separate and subsequent account-usage gap, which the literature reviewed attributes more directly to consumer protection, digital literacy, and underlying mobile phone access barriers than to identity-verification regulation specifically [4], [12].

The cross-country heterogeneity evident in Table I, Indonesia's effective elimination of its gender gap alongside Bangladesh's, Nigeria's, and Pakistan's persistent double-digit gaps, further indicates that the specific combination of regulatory reform and underlying socioeconomic conditions, rather than global regulatory standard-setting alone, determines national-level outcomes, since all jurisdictions reviewed operate under the same FATF international standard-setting framework yet have achieved starkly different gender-gap outcomes [3]. This suggests that the FATF's risk-based approach functions as a necessary but not sufficient legal condition for gender-gap closure: it removes the regulatory barrier to simplified verification but does not itself guarantee that national regulators will adopt simplified CDD measures, that financial service providers will implement them effectively, or that the underlying socioeconomic conditions, including women's independent access to whatever alternative documentation simplified CDD accepts, will be present to allow women to benefit from the more permissive framework where it is adopted [7], [8], [9]. The persistent and, in the case of smartphone ownership, widening gender gap in mobile phone and mobile internet access further illustrates the outer limit of financial-sector regulation's reach: no customer due diligence or consumer protection reform, however well designed, can close a financial-inclusion gender gap that is substantially downstream of a mobile technology access gap lying outside financial regulators' direct jurisdiction [3].

V. Challenges in Gender-Inclusive FinTech Regulation

Several challenges constrain further progress in this field. The persistent gap between the FATF's permissive risk-based approach framework and its inconsistent national-level implementation means that simplified or tiered CDD measures, while internationally sanctioned, remain unevenly adopted and enforced across jurisdictions, and even where adopted at the regulatory level, evidence indicates that individual financial service providers do not always implement simplified measures in practice, particularly for small-value customers they may perceive as commercially unattractive regardless of regulatory permission to serve them more efficiently. The documented divergence between account-ownership gap closure and account-usage gap persistence, most starkly illustrated in the Indian case, indicates that identity-verification regulatory reform alone is an incomplete gender-inclusion strategy, and that consumer protection, digital literacy, and trust-building regulatory measures addressing the usage stage specifically require continued, largely separate policy attention. The widening gender gap in smartphone ownership presents a particularly difficult challenge because it lies substantially outside financial-sector regulators' jurisdiction, residing instead in telecommunications policy, device affordability, and broader gender-equity domains that financial inclusion regulation cannot directly address despite its downstream dependence on mobile technology access. Underlying legal barriers, including unequal property and inheritance rights affecting women's independent access to alternative identification and proof-of-address documentation, remain outside the reach of financial-sector regulation entirely, requiring coordinated reform across property, family, and civil registration law rather than financial regulation alone to fully resolve the documentation-access barrier CDD requirements expose. Finally, data limitations constrain rigorous causal attribution in this field, since the Global Findex survey cycles occur only approximately every three years and national regulatory reforms frequently coincide with other confounding developments, such as India's e-KYC reform coinciding with the broader Jan Dhan program's expansion of no-frills account products, making precise isolation of the identity-verification regulatory mechanism's independent causal contribution to gender-gap closure difficult to establish with full confidence from the available evidence.

VI. Conclusion

This paper has examined the legal and regulatory dimensions of gender-inclusive FinTech regulation, synthesizing evidence on customer due diligence and identity-verification regulation, consumer protection frameworks, and the broader socioeconomic and legal barriers that condition women's access to and sustained use of digital financial services. The evidence demonstrates that the global gender gap in financial account ownership has narrowed meaningfully, from 9 percentage points in 2017 to 6 points in 2021, with continued progress bringing women's account ownership in low- and middle-income economies to 73% by 2024, but that this aggregate progress masks substantial cross-country heterogeneity and, even where account-ownership gaps have closed, a persistent and separate gap in active account usage that identity-verification regulatory reform alone does not resolve. India's e-KYC reform stands as the most extensively documented case demonstrating that targeted customer due diligence regulatory reform, specifically the FATF-sanctioned shift toward simplified, technology-enabled identity verification, can produce substantial, measurable gender-gap closure in account ownership, while simultaneously illustrating that such reform is insufficient by itself to close the subsequent usage gap, which appears more directly tied to consumer protection, digital literacy, and underlying mobile technology access conditions. These findings indicate that durable gender-inclusive FinTech regulation requires coordinated attention across the full sequence of barriers women face, identity verification at account opening, consumer protection and trust throughout ongoing usage, and the underlying socioeconomic and legal conditions, including property rights and mobile phone access, that determine whether formal regulatory permissiveness translates into actual, sustained financial inclusion.

VII. Future Work

Future research should prioritize rigorous causal-identification studies isolating the specific contribution of identity-verification regulatory reform, as distinct from concurrent digital payment product expansion and government program effects, to documented gender-gap closure, extending the India case study methodology to additional jurisdictions that have or have not adopted comparable e-KYC reforms. Further work is needed examining the specific consumer protection and trust-building regulatory measures most effective at closing the account-usage gap that persists even after account-ownership gaps close, an area comparatively underdeveloped relative to the identity-verification regulation literature reviewed in this paper. Continued research should also examine the legal and regulatory coordination mechanisms available to connect financial-sector regulation with the property, family, and civil registration law reforms needed to address the underlying documentation-access barriers CDD requirements expose, since financial regulators alone cannot resolve barriers rooted in unequal property and inheritance rights. Research should further track the practical, provider-level implementation gap between FATF-sanctioned simplified CDD measures and their actual adoption by individual financial service providers, since regulatory permission alone has not been shown to guarantee provider-level practice change. Finally, future work should examine the telecommunications and device-affordability policy interventions needed to address the documented and, in some measures, widening gender gap in smartphone and mobile internet access, recognizing that financial inclusion regulation's effectiveness is fundamentally bounded by this adjacent policy domain.

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