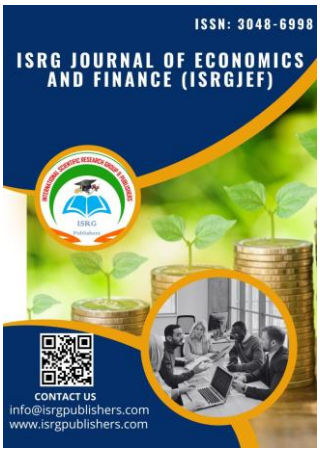
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Islamic FinTech, Financial Inclusion and Sustainable Entrepreneurship among Women-Owned MSMEs in Bangladesh: Secondary-Data Evidence and a Research Framework

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Abstract

Purpose. *This paper examines how Islamic FinTech could widen financial inclusion and support sustainable entrepreneurship among women-owned micro, small and medium enterprises (MSMEs) in Bangladesh, and it sets out a framework that future empirical studies can test.*

Design/methodology/approach. *The study combines a structured literature review with a descriptive analysis of public secondary data: the Global Findex 2021 and 2025 databases, Bangladesh Bank's 2025 master circular on CMSME financing and its reporting on women's CMSME credit, agent banking and mobile financial services, Bangladesh Bank's quarterly report on Islamic banking, the Economic Census, and IFC estimates of the MSME finance gap.*

Findings. *Gender gaps remain wide. In the Findex 2025 survey wave (fieldwork in 2024), 33.4% of Bangladeshi women held an account, against 53.5% of men, and the gap in digital payments was of similar size (21.4 points). Women entrepreneurs held 7.28% of outstanding CMSME loans in March 2026, against a regulatory floor of 15%. Full-fledged Islamic banks held about a quarter of banking deposits, but CMSMEs received only 8.04% of their investment. Shariah-compliant digital channels exist but remain thin. We propose a framework that links five Islamic FinTech channels to financial inclusion and to the economic, social and*

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environmental dimensions of sustainable entrepreneurship, state five testable propositions, and specify a measurement plan.

Originality/value. *The paper replaces untested claims of impact with verified baseline evidence and a falsifiable research agenda.*

Implications. *Regulators and Islamic banks should report sex-disaggregated Islamic finance data and link Shariah-compliant digital products to women-focused CMSME targets.*

Keywords: Islamic FinTech; financial inclusion; women entrepreneurs; MSMEs; sustainable entrepreneurship; Bangladesh; Shariah-compliant finance.

JEL classification: *G21; G23; J16; L26; O16; Z12*

1. Introduction

Women's entrepreneurship matters for household welfare and for growth, and policy has a role in narrowing the gaps that stop women from starting and expanding firms. Duflo (2012) argues that economic development and women's empowerment reinforce each other only weakly, so targeted policy is needed. Finance is one of the clearest pressure points. Across countries, women-owned firms face tighter credit constraints than firms owned by men (Muravyev et al., 2009), and IFC estimates that women-owned MSMEs account for about US$1.7 trillion of the formal MSME finance gap in developing economies (Bruhn et al., 2017).

Bangladesh is an important test case. Its microfinance sector has reached millions of women for four decades, and rigorous studies found that credit channelled through women changed household outcomes (Pitt & Khandker, 1998; Pitt et al., 2006). Yet formal finance for women-owned enterprises remains limited. Bangladesh Bank requires banks and financial institutions to direct at least 15% of their CMSME loan portfolio to women entrepreneurs (Bangladesh Bank, 2025a). By March 2026, women entrepreneurs held only 7.28% of outstanding CMSME loans ("CMSME loans shrink," 2026). At the same time, Islamic banking is large: full-fledged Islamic banks held 24.36% of banking-sector deposits and 28.93% of investments at the end of March 2025 (Bangladesh Bank, 2025b). Mobile money and agent banking have spread quickly. A Muslim-majority economy with a large Islamic banking sector, rapid digital finance growth and a persistent gender gap in enterprise credit invites the question whether Islamic FinTech can serve women entrepreneurs better than the channels now in place.

The research on this question is thin, and some of it rests on weak evidence. Studies of Islamic finance and inclusion show that Muslim adults are less likely than non-Muslims to hold formal accounts after controls, though the share who cite religion as the reason is small (Demirgüç-Kunt et al., 2014). Reviews of Islamic FinTech describe products and regulation but rarely address women-owned firms (Hasan et al., 2020; Rabbani et al., 2020). Research on women's financial inclusion in South Asia has focused on conventional accounts and mobile money (Ghosh & Vinod, 2017; Shen et al., 2026). Work on sustainable entrepreneurship has developed concepts but has seldom examined how the type of finance shapes the social and environmental choices of small firms (Dean & McMullen, 2007; Shepherd & Patzelt, 2011). Very little work links these streams for Bangladesh, and we found no verified sex-disaggregated statistics on the use of Islamic digital financial services in the country.

This paper addresses that gap with three research questions:

- **RQ1.** What do verified public data show about the gender gap in financial inclusion and enterprise finance in Bangladesh, and about the reach of Islamic banking and Shariah-compliant digital channels?
- **RQ2.** Through which mechanisms could Islamic FinTech channels plausibly affect financial inclusion and sustainable entrepreneurship among women-owned MSMEs, according to the existing literature?
- **RQ3.** What testable propositions and measurement plan would allow future studies to estimate these effects credibly?

The paper makes three contributions. First, it assembles a verified, cited baseline of gender, CMSME and Islamic banking indicators for Bangladesh from 2017 to 2026, which future studies can update. Second, it builds a conceptual framework that combines Kabeer's (1999) resources-agency-achievements view of empowerment, the gender-aware "5M" model of women's entrepreneurship (Brush et al., 2009), and the maqasid al-Shariah view of Islamic finance (Laldin & Furqani, 2013). The framework links five Islamic FinTech channels to inclusion and to three dimensions of sustainable entrepreneurship. Third, it states five propositions (P1–P5) and a measurement plan with established indicators and validation procedures. The study collects no primary data and makes no causal claims. Its value lies in separating what is known from what still has to be tested.

The paper proceeds as follows. Section 2 reviews the literature and sets out the theoretical lens. Section 3 describes the method. Section 4 presents the secondary-data analysis. Section 5 develops the framework and propositions. Section 6 discusses the findings, Section 7 sets out implications, Section 8 covers limitations and future research, and Section 9 concludes.

2. Literature Review and Theoretical Background

2.1 Women's financial inclusion and enterprise finance

Financial inclusion is usually defined as the ease of access to, availability of, and use of formal financial services (Sarma & Pais, 2011). The Global Findex surveys put this into practice through individual-level indicators of account ownership, saving, borrowing and digital payments (Demirgüç-Kunt et al., 2022; Klapper et al., 2025). Digital finance has widened access in many economies, though its benefits depend on cost, trust and the stability of providers (Ozili, 2018).

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Evidence from randomized and quasi-experimental studies shows that how women access finance matters as much as whether they do. In Kenya, the spread of mobile money raised consumption and moved women out of agriculture into business (Suri & Jack, 2016). In India, depositing women's wages directly into their own bank accounts raised their labor supply and shifted gender norms (Field et al., 2021). By contrast, randomized evaluations of conventional microcredit found modest average effects on business growth and no transformative effects on women's decision-making (Banerjee et al., 2015). The design of the product, the control women have over the account, and the social setting all shape the result.

For women-owned firms, supply-side constraints and demand-side constraints add up. Firm-level data show that women entrepreneurs are less likely to obtain loans and pay more when they do (Muravyev et al., 2009). In Sub-Saharan Africa, much of the gender gap in finance reflects differences in firm characteristics rather than outright discrimination (Aterido et al., 2013). Indian microdata show that education, income and household position limit women's inclusion (Ghosh & Vinod, 2017). Studies of women entrepreneurs in emerging economies point to finance, family responsibilities and social support as decisive factors (Naser et al., 2009). In Bangladesh, ethnographic work shows that group-liability microfinance can bring women into debt cycles enforced through social codes of honor and shame (Karim, 2011), a reminder that access to credit alone does not empower women.

Recent Bangladeshi evidence sharpens the digital dimension. Using a 2021 national survey weighted against Findex microdata, Shen et al. (2026) find that once education and income are controlled for, women are about as likely as men to hold a bank account, but men have roughly twice the odds of using a mobile wallet. In their decomposition, about two-thirds of the gender gap reflects women's lower education and income. In other words, the gap in Bangladesh is largely a gap in mobile money use. Any Islamic FinTech strategy has to deal with it.

2.2 Islamic finance, religious self-exclusion and Islamic microfinance

Islamic finance prohibits riba (interest), excessive uncertainty (gharar) and gambling (maysir), and it favors trade-based, lease-based and partnership contracts. The inclusion argument is that some Muslims exclude themselves from interest-based finance for religious reasons, and that Shariah-compliant products can bring them in (Mohieldin et al., 2011). The evidence is mixed. Using Findex data for 64 economies, Demirgüç-Kunt et al. (2014) find that Muslims are less likely than non-Muslims to own a formal account or save at a formal institution after controls, with no significant difference in formal borrowing. Few unbanked adults cite religion as their main reason. Religious self-exclusion is real but is probably not the binding constraint for most people. Cost, distance, documentation and income weigh more. Studies of Islamic financial inclusion in Indonesia point in the same direction: product awareness, regulation and supply conditions shape uptake alongside religious preference (Ali et al., 2020).

Islamic microfinance adapts murabahah (cost-plus sale), ijarah (leasing), musharakah and mudarabah (partnership and profit-sharing), and qard hasan (benevolent, interest-free loans) to low-income clients. Abdul Rahman (2010) presents it as an ethical alternative for poverty alleviation that rests on real economic activity. Kaleem and Ahmed (2010) propose a charity-based model in which zakat, sadaqah and waqf funds lower the cost of serving the poorest. These designs suit women micro-entrepreneurs who lack collateral, but they cost more to deliver than plain loans because each financing is tied to an asset or a business plan. That cost is where digital delivery could help.

2.3 Islamic FinTech

FinTech covers the use of digital technology to change how financial services are produced and delivered (Gomber et al., 2018). Islamic FinTech applies these tools within Shariah constraints: digital Islamic accounts and wallets, app-based murabahah and ijarah, crowdfunding under musharakah or mudarabah, digital zakat and waqf platforms, takaful distributed online, and blockchain-based contracts (Alam et al., 2019; Rabbani et al., 2020). Reviews describe a fast-growing field that still lacks empirical outcome studies, especially studies of underserved users (Hasan et al., 2020). During the COVID-19 period, Islamic FinTech was promoted as a channel for open social innovation and social-finance distribution (Rabbani et al., 2021).

Adoption studies draw mainly on technology acceptance models. In Indonesia, Darmansyah et al. (2021) find that intentions to use Islamic financial technology depend on perceived usefulness, ease of use, social influence and Shariah compliance. This fits the unified theory of acceptance and use of technology (UTAUT), in which performance expectancy, effort expectancy, social influence and facilitating conditions predict intention and use (Venkatesh et al., 2003). In Bangladesh, Haque and Zahid (2026) examine mobile banking from a jurisprudential perspective and argue that Shariah-compliant mobile banking can support sustainable development if contract structures and fund placement satisfy Shariah requirements. Studies of FinTech in Bangladeshi agribusiness and supply chains suggest that digital channels can lower transaction costs and improve traceability for small producers, and that Islamic social finance instruments can be routed through the same platforms (Zahid et al., 2025a, 2025b). Trust also matters. Research on customer retention in Islamic FinTech stresses service recovery and Shariah-compliant communication as drivers of continued use (Zahid et al., 2025c). None of these studies isolates women-owned firms.

2.4 Sustainable entrepreneurship and its Islamic foundations

Sustainable entrepreneurship is the discovery and exploitation of opportunities that sustain nature, life support and community while creating economic and non-economic gains for people and society (Shepherd & Patzelt, 2011). Dean and McMullen (2007) show how entrepreneurial action can reduce environmental degradation by correcting market failures. The triple bottom line divides performance into economic, social and environmental dimensions (Elkington, 1998). We use these three dimensions as the outcome space.

Islamic thought gives these outcomes a normative basis. The maqasid al-Shariah, which include the protection of life, intellect, lineage, faith and wealth, define the purposes against which financial activity is judged (Laldin & Furqani, 2013). Gümüsay (2015) describes entrepreneurship from an Islamic perspective as resting on entrepreneurial, socio-ethical and religio-spiritual pillars, so profit is pursued alongside duties to the community. These ideas suggest that Islamic finance should favor real-economy, risk-sharing activity with social benefits. Whether Islamic FinTech actually produces such outcomes for women-owned firms has not been tested.

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2.5 Theoretical lens

Three perspectives frame the analysis. First, Kabeer (1999) treats empowerment as a process in which resources (including financial resources) enlarge agency (the ability to define and act on goals), which leads to achievements. Financial inclusion counts as a resource. It does not empower by itself unless women control it, which is consistent with the findings of Field et al. (2021). Second, the gender-aware framework of Brush et al. (2009) adds "motherhood" (household context) and the "meso/macro environment" (norms, institutions and policy) to the classic market, money and management factors. This explains why the same financial product can have different effects for women and men. Third, the maqasid perspective (Laldin & Furqani, 2013) supplies a normative benchmark for sustainable outcomes and explains why some women may prefer Shariah-compliant channels. Together, these lenses predict that Islamic FinTech will help women-owned MSMEs only when it (a) removes a binding access constraint, (b) is controlled by the woman entrepreneur, and (c) is embedded in supportive norms and regulation.

3. Methodology

3.1 Design

The study uses a two-part secondary design. Part one is a structured narrative review following the guidance of Snyder (2019) for reviews that synthesize evidence across fields in order to build a conceptual model. Part two is a descriptive analysis of verified public secondary data on Bangladesh. The study involves no human participants, and it collects no survey, interview or experimental data. All statistics in Section 4 come from the cited public sources.

3.2 Literature search and selection

In October 2026 we searched Crossref, OpenAlex, publisher websites and general web search engines with combinations of the terms "Islamic fintech", "Islamic microfinance", "Shariah-compliant", "financial inclusion", "women entrepreneurs", "women-owned", "MSME/SME", "mobile money", "sustainable entrepreneurship" and "Bangladesh". We also followed backward citations from key reviews (Hasan et al., 2020; Rabbani et al., 2020). Inclusion criteria were (a) peer-reviewed articles, scholarly books or institutional reports; (b) a direct link to at least one of four themes: women's financial inclusion, Islamic finance and inclusion, Islamic FinTech, or sustainable entrepreneurship; and (c) bibliographic details that could be confirmed against Crossref or OpenAlex records or the publisher's page. We excluded items whose existence or details could not be verified, opinion pieces without data (except where they report official statistics), and studies that duplicated a stronger source. Given these criteria and the conceptual aim, we did not run a full PRISMA protocol (Page et al., 2021) and we report no screening counts. The final review corpus is the set of works cited in Section 2, which is listed in the References.

3.3 Secondary data sources

We selected indicators for four domains (Table 1 and Table 2):

1. **Individual financial inclusion by sex.** The Global Findex Database, 2017, 2021 and 2025 waves (Demirgüç-Kunt et al., 2022; Klapper et al., 2025). The 2025 wave was fielded in calendar year 2024 and is labeled 2024 in the database (World Bank, 2025). Values were retrieved from the World Bank's Global Findex data service (World Bank, n.d.) on 2 October 2026.
2. **Enterprise finance policy and outcomes.** Bangladesh Bank's Master Circular on CMSME Financing (SMESPD Circular No. 01, 17 March 2025) and press reports of Bangladesh Bank's quarterly CMSME data.
3. **Islamic banking and digital channels.** Bangladesh Bank's Quarterly Report on Islamic Banking in Bangladesh for January–March 2025, and reported Bangladesh Bank data on agent banking and mobile financial services (MFS).
4. **Enterprise structure and finance gaps.** The Bangladesh Bureau of Statistics (BBS) Economic Census 2013 and 2024 as reported, and IFC finance-gap estimates (Bruhn et al., 2017).

Where a primary Bangladesh Bank or BBS document could not be retrieved, we cite the national newspaper report that quotes it and say so in the text. All figures are reported as published, rounded to one or two decimals. The analysis is descriptive: we report levels, gaps in percentage points and changes between waves, and we draw no causal inferences.

4. Findings from the Secondary-Data Analysis

4.1 Gender gaps in individual financial inclusion

Table 1 reports Findex indicators for Bangladeshi adults by sex.

Table 1. Financial inclusion indicators for Bangladesh by sex, Global Findex (percent of adults aged 15+)

Indicator	Women 2017	Men 2017	Women 2021	Men 2021	Women 2024	Men 2024	Gap 2024 (pp)
Account (financial institution or mobile money)	35.8	64.6	43.5	62.9	33.4	53.5	20.2
Mobile money account	10.3	32.5	20.3	38.4	14.5	27.2	12.7
Made or received a digital payment	21.2	47.3	33.6	57.9	23.4	44.8	21.4
Borrowed from a formal bank or similar financial institution	n.a.	n.a.	15.8	12.5	12.9	12.5	−0.4
Borrowed any money	32.9	40.8	44.7	47.7	64.9	75.8	10.8

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Indicator	Women 2017	Men 2017	Women 2021	Men 2021	Women 2024	Men 2024	Gap 2024 (pp)
Saved at a financial institution or using mobile money	n.a.	n.a.	n.a.	n.a.	9.4	11.9	2.5
Own a mobile phone	n.a.	n.a.	n.a.	n.a.	73.7	91.3	17.6

Notes: The 2024 columns are the Global Findex 2025 wave, fielded in 2024. "n.a." means not available for that wave in the database. The gap is men minus women. Source: World Bank (n.d.), Global Findex Database, retrieved 2 October 2026; Demirgüç-Kunt et al. (2022); Klapper et al. (2025).

Four patterns stand out. First, the account gap is large and persistent. In 2011, 26.0% of women and 37.3% of men held an account, a gap of 11.3 percentage points. The gap widened to 28.8 points in 2017, narrowed to 19.4 points in 2021, and stood at 20.2 points in 2024. Overall account ownership in Bangladesh fell from 52.8% in 2021 to 43.3% in 2024 (World Bank, n.d.), even though global ownership rose to nearly 80% and the global gender gap was four percentage points (77% for women against 81% for men) (World Bank, 2025). The fall needs to be read with caution until the country documentation explains it, but it shows that the gains of 2017–2021 were not secure, and that women lost ground in absolute terms.

Second, the gap is concentrated in digital channels. In 2024, women were 12.7 points behind men in mobile money and 21.4 points behind in digital payments. This matches the finding of Shen et al. (2026) that the gap is mostly a mobile money gap. Reported Bangladesh Bank data point the same way: women's share of MFS accounts fell from 48.28% in December 2019 to 41.83% in December 2023, while men's share rose from 51.53% to 57.89% (Jahid, 2024).

Third, formal borrowing does not show a gender gap. Women were slightly more likely than men to report borrowing from a formal bank or similar financial institution in both 2021 and 2024. In Bangladesh, the Findex category "similar financial institution" includes microfinance institutions, whose clients are mostly women, so this parity probably reflects microcredit rather than enterprise-scale bank credit. Women's overall borrowing rose sharply between 2021 and 2024 (from 44.7% to 64.9%), but formal borrowing did not. Most of the increase must therefore have come from informal sources such as family, friends, shopkeepers and moneylenders.

Fourth, the digital infrastructure gap is smaller than the gap in use. Nearly three-quarters of women owned a mobile phone in 2024, against 91.3% of men, yet only 14.5% of women had a mobile money account. Device ownership is therefore not the main barrier for most women. Usage, control, literacy and product relevance are more likely candidates.

4.2 Enterprise finance for women: targets and outcomes

Table 2 brings together policy targets and reported outcomes for women-owned enterprises and for Islamic banking.

Table 2. Selected enterprise finance and Islamic banking indicators, Bangladesh

Domain	Indicator	Value	Period	Source
CMSME policy	Minimum share of CMSME loans to women entrepreneurs, per year	15%	From March 2025	Bangladesh Bank (2025a)
CMSME policy	CMSME share of total loans and advances (target)	25% by end-2025, rising to 27% by 2029	2025–2029	Bangladesh Bank (2025a)
CMSME policy	Share of CMSME loans to cottage, micro and small enterprises	50%	Per year	Bangladesh Bank (2025a)
CMSME outcome	Women entrepreneurs' share of outstanding CMSME loans	7.28% (about Tk 21,692 crore)	March 2026	"CMSME loans shrink" (2026), reporting Bangladesh Bank
CMSME outcome	CMSME share of total bank lending	15.87%	March 2026	"CMSME loans shrink" (2026)
Islamic banking	Full-fledged Islamic banks; branches	10; 1,699	March 2025	Bangladesh Bank (2025b)
Islamic banking	Islamic branches / windows of conventional banks	37 branches (17 banks); 830 windows (20 banks)	March 2025	Bangladesh Bank (2025b)
Islamic banking	Share of banking-sector deposits / investments	24.36% / 28.93%	March 2025	Bangladesh Bank (2025b)
Islamic banking	CMSME share of Islamic bank investment	8.04%	March 2025	Bangladesh Bank (2025b)
Islamic banking	Share of banking-sector deposits	23.62%	March 2026	"Islamic banking deposits up" (2026)

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Domain	Indicator	Value	Period	Source
Agent banking	Women's share of agent banking deposit accounts	48.6%	June 2026	"Women's participation in agent banking" (2026)
Agent banking	Women's share of agents	11.5%	June 2026	"Women's participation in agent banking" (2026)
MFS	Women's share of MFS accounts	41.83% (48.28% in Dec 2019)	December 2023	Jahid (2024), reporting Bangladesh Bank data
Enterprise structure	Female-headed establishments	0.56 million (7.21%)	Economic Census 2013	Mujeri (2019), reporting BBS
Enterprise structure	Economic units; micro and cottage shares	11.7 million; 56.67% micro, 38.74% cottage	Economic Census 2024	"Micro and cottage industries" (2026), reporting BBS
Enterprise structure	Women's share of persons engaged	About 17%	Economic Census 2024	"Micro and cottage industries" (2026)
Finance gap	MSME finance gap, Bangladesh	US$2.8 billion	2023 (IFC estimate)	"Micro, small, medium enterprises" (2023)
Finance gap	Women-owned MSME finance gap, developing economies	US$1.7 trillion	2017	Bruhn et al. (2017)

The policy framework is ambitious. The March 2025 master circular sets a floor of 15% of CMSME loans for women entrepreneurs each year. It also widens the definition of a women-owned enterprise: besides sole proprietorships and companies in which women hold at least 51% of shares, an enterprise now qualifies if women hold at least 20% of shares and a woman is managing director, executive director, chief executive or board chair, or if women hold at least 20% of shares and at least 51% of permanent staff are women (Bangladesh Bank, 2025a). Earlier measures included a refinance window for women entrepreneurs at 5% interest and collateral-free loans of up to Tk 25 lakh on personal guarantee ("Women entrepreneurs to get loans," 2021).

Outcomes lag well behind. In March 2026, women entrepreneurs held 7.28% of outstanding CMSME loans, less than half the floor, and the CMSME portfolio as a whole had shrunk to 15.87% of bank lending against a target of 25.5% for that year ("CMSME loans shrink," 2026). The same report shows non-performing loan ratios of 43.97% at Islamic banks and 42.73% at state-owned banks in March 2026. These figures point to severe balance-sheet stress, which limits any lender's appetite for new small-firm risk. Commentators link the shortfall in women's credit to collateral requirements that favor real estate, documentation burdens, and lenders' risk aversion ("Gender disparity rising," 2026).

4.3 Islamic banking: large deposit base, small CMSME exposure

Islamic banking is a major part of the Bangladeshi system. In March 2025, ten full-fledged Islamic banks operated 1,699 branches and held 24.36% of banking-sector deposits and 28.93% of investments, while conventional banks ran 37 Islamic branches and 830 Islamic windows (Bangladesh Bank, 2025b). By March 2026, the deposit share of the full-fledged Islamic banks had eased to 23.62% ("Islamic banking deposits up," 2026). Yet CMSMEs received only 8.04% of Islamic bank investment in March 2025 (Bangladesh Bank, 2025b). The report mentions the refinance scheme for women entrepreneurs in the small enterprise sector, but it publishes no sex-disaggregated figures for Islamic financing. We found no official statistic on the share of Islamic bank financing that goes to women-owned enterprises. This is a material data gap: the sector that most directly serves clients with a Shariah preference does not report how much it serves women entrepreneurs.

4.4 Shariah-compliant digital channels: present but thin

Shariah-compliant digital services exist in Bangladesh but remain narrow. The state-linked MFS provider Nagad offers "Nagad Islamic" accounts. Users can convert a regular account through the app, and the provider states that funds are kept in Islamic banks and supervised by a Shariah committee ("'Nagad Islamic' guarantees," 2022). An Islamic merchant account followed in January 2024 ("Nagad introduces Islamic merchant accounts," 2024). bKash does not offer a separate Islamic wallet. Its app hosts Islamic deposit pension schemes (DPS) run by partner banks, namely City Bank and Dhaka Bank (bKash, n.d.). City Bank's Islamic DPS through bKash was launched in October 2022 ("City Bank launches 'Islamic DPS Savings'," 2022). These are savings and payment products. We found no verified evidence of digital murabahah, ijarah or musharakah financing aimed at women-owned MSMEs through MFS platforms, nor of digital takaful for micro-enterprises.

Agent banking is the most gender-balanced channel. Women held 48.6% of agent banking deposit accounts in June 2026, but only 11.5% of agents were women, well below the 50% target set in a May 2025 Bangladesh Bank circular letter ("Women's participation in agent banking," 2026). Agent banking extends deposit services to women, but most of these women are savers rather than borrowers.

4.5 Synthesis of the evidence

Taken together, the data suggest five stylized facts. (1) Women's exclusion is greatest in digital payments and mobile money, the channels through which FinTech operates. (2) Women's formal borrowing is at least as high as men's at the individual level, mainly through microfinance, but women entrepreneurs receive less than half of the CMSME credit the regulator requires. The binding constraint is therefore the move from micro-loans to enterprise-scale credit. (3) Islamic banks hold a large deposit base but lend relatively little to CMSMEs, and they publish no gender

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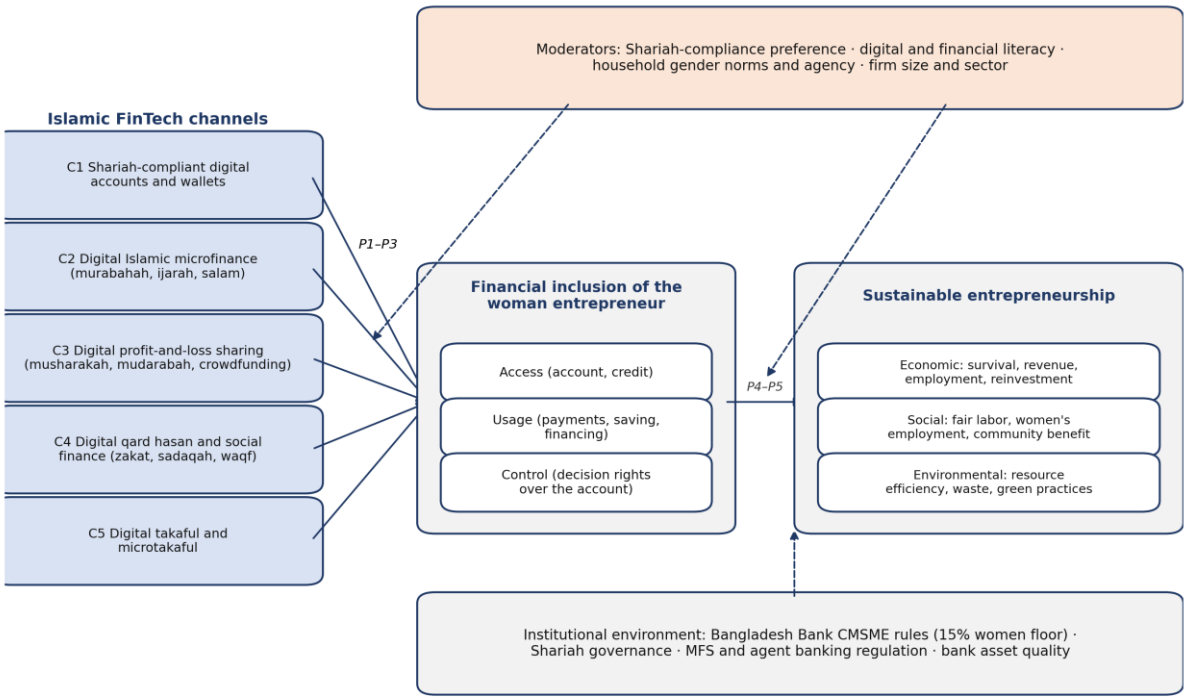
data. (4) Shariah-compliant digital offerings concentrate on accounts, payments and savings, not financing or risk-sharing. (5) Very high non-performing loan ratios in Islamic and state-owned banks limit the capacity to expand small-firm finance quickly. These facts do not show that Islamic FinTech helps or harms women-owned MSMEs. They identify where it could matter and what must be measured.

5. Proposed Framework and Propositions

5.1 Structure of the framework

Building on the theoretical lens in Section 2.5 and the stylized facts in Section 4.5, we propose the framework shown in Figure 1.

Figure 1. Conceptual framework linking Islamic FinTech channels, financial inclusion and sustainable entrepreneurship



Source: Authors' own elaboration. Table 3 maps each channel to its proposed mechanism and expected outcome.

Table 3. Islamic FinTech channels, proposed mechanisms and expected outcomes

Channel	Shariah basis	Mechanism for women-owned MSMEs	Inclusion outcome	Sustainability outcome	Proposition
C1. Shariah-compliant digital accounts and wallets	Wadiah or mudarabah deposits; fund placement with Islamic banks	Removes travel and branch-interaction costs; meets the needs of riba-averse users; builds a transaction record	Account ownership and use; digital payments	Economic (cash-flow management)	P1
C2. Digital Islamic microfinance	Murabahah, ijarah, salam	Asset-backed financing reduces the need for collateral; digital onboarding and repayment reduce delivery cost	Formal enterprise financing	Economic (investment, revenue)	P2
C3. Digital profit-and-loss sharing	Musharakah, mudarabah, equity crowdfunding	Shares downside risk; matches repayment to firm performance	Access to growth capital	Economic and social (employment)	P3
C4. Digital qard hasan and social finance	Qard hasan, zakat, sadaqah, waqf	Zero-cost seed capital for the poorest; links to enterprise training	Entry into formal finance	Social (poverty reduction, community benefit)	P2, P5
C5. Digital takaful and microtakaful	Mutual guarantee (tabarru)	Protects against health, climate and asset shocks without distress sales	Risk protection	Economic (survival) and environmental (climate resilience)	P4

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5.2 Propositions

P1 (Digital Shariah-compliant accounts). Among women entrepreneurs in Bangladesh, the availability of Shariah-compliant digital accounts and wallets is positively associated with account ownership and digital payment use, and the association is stronger for women with a higher Shariah-compliance preference.

The rationale combines the religious self-exclusion evidence (Demirgüç-Kunt et al., 2014) with the mobile money gap (Table 1; Shen et al., 2026). Because only a minority of unbanked adults cite religion, we expect the main effect to be modest and the moderating effect to carry most of the weight. A test should compare women with similar access to conventional mobile money who differ in access to an Islamic option.

P2 (Digital Islamic microfinance and qard hasan). Digital delivery of murabahah, ijarah and qard hasan financing is positively associated with formal enterprise financing for women-owned micro and small firms. The effect works through lower transaction costs and asset-backed structures that substitute for collateral, and it is stronger where digital and financial literacy is higher.

The rationale is that collateral and documentation are the barriers cited most often (Section 4.2), and asset-backed contracts tie financing to identifiable goods (Abdul Rahman, 2010). Financial literacy shapes the ability to use complex products (Lusardi & Mitchell, 2014). Qard hasan funded by social finance can lower costs for the poorest clients (Kaleem & Ahmed, 2010).

P3 (Profit-and-loss sharing). Among financed women-owned MSMEs, profit-and-loss sharing finance delivered through digital channels is more strongly associated with investment, employment growth and business survival than debt-like Islamic financing of equal size, provided that the platform verifies information to a sufficient standard.

The rationale is that risk-sharing reduces the cost of default for firms with volatile income and fits the maqasid view of real-economy finance (Laldin & Furqani, 2013). However, monitoring costs have historically limited the use of musharakah and mudarabah, so the proposition depends on digital record-keeping and verification (Hasan et al., 2020).

P4 (Takaful). Use of digital takaful or microtakaful by women entrepreneurs is positively associated with business survival after health, climate or asset shocks, and negatively associated with distress sales of business assets.

The rationale is that, without insurance, shocks force women to sell assets or borrow informally, which may explain part of the jump in informal borrowing between 2021 and 2024 (Table 1). Mutual risk pooling under takaful offers a Shariah-compliant alternative (Alam et al., 2019).

P5 (Mediation and moderation). Financial inclusion, measured as access, usage and control, mediates the relationship between Islamic FinTech use and sustainable entrepreneurship. The indirect effect on the social and environmental dimensions is stronger for women entrepreneurs with a higher maqasid or Shariah-compliance orientation and weaker where household norms limit women's control over finance.

The rationale is that resources become achievements only through agency (Kabeer, 1999). Control over accounts changes outcomes (Field et al., 2021). The Islamic view of entrepreneurship combines economic and socio-ethical aims (Gümüsay, 2015). The gender-aware framework predicts that household and normative context moderates these effects (Brush et al., 2009).

5.3 Measurement plan

Table 4 sets out constructs and indicators for future surveys. Wherever possible, the indicators reuse question wording from established instruments, so results can be compared with Findex and with technology-adoption research. All multi-item scales will need to be validated in Bangla before use.

Table 4. Measurement plan for testing P1–P5

Construct	Type	Indicators (examples)	Source or anchor
Islamic FinTech use (by channel C1–C5)	Formative, binary and frequency	Holds a Shariah-compliant digital account or wallet; received digital murabahah, ijarah or qard hasan financing in the past 12 months; holds digital PLS financing; holds digital takaful; frequency of use in the past 30 days	Channel definitions in Table 3; provider records where available
Financial inclusion: access	Formative	Owns an account (bank, MFI or mobile money); has a business account in the firm's name	Findex account definitions (Klapper et al., 2025); Sarma & Pais (2011)
Financial inclusion: usage	Formative	Made or received a digital payment; saved formally; borrowed formally for the business in the past 12 months	Findex indicators (Klapper et al., 2025)
Financial inclusion: control	Reflective, 5-point	"I decide how money in this account is used"; "I can use the account without asking anyone"; "Business income is paid into an account I control"	Kabeer (1999); Field et al. (2021)
Adoption drivers	Reflective, 7-point	Performance expectancy, effort expectancy, social influence, facilitating conditions	Venkatesh et al. (2003); Darmansyah et al. (2021)
Shariah-compliance preference	Reflective, 7-point	Avoids interest-based products; would switch to a Shariah-compliant option at equal cost; trusts the Shariah certification of the provider	Adapted from Darmansyah et al. (2021); Demirgüç-Kunt et al. (2014)

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Construct	Type	Indicators (examples)	Source or anchor
Digital and financial literacy	Reflective and test-based	Standard numeracy, inflation and risk-diversification questions; ability to complete app tasks	Lusardi & Mitchell (2014)
Economic sustainability	Reflective and objective	Survival over 24 months; revenue and employment growth; reinvestment rate	Shepherd & Patzelt (2011); Elkington (1998)
Social sustainability	Reflective	Share of women employees; fair wage practices; community contribution	Shepherd & Patzelt (2011); Gümüsay (2015)
Environmental sustainability	Reflective	Energy and water saving; waste reduction; use of greener inputs	Dean & McMullen (2007)
Household norms and agency	Reflective	Mobility to the market or bank alone; voice in business decisions	Kabeer (1999); Brush et al. (2009)
Controls	Observed	Firm age, size (cottage, micro, small, medium per Bangladesh Bank definitions), sector, division, owner's education, registration status	Bangladesh Bank (2025a); BBS census categories

The validation protocol has six steps. (1) Translate and back-translate the instruments, then pilot them with cognitive interviews. (2) Pre-register hypotheses and the analysis plan. (3) Use procedural and statistical remedies for common method bias, including separating the measurement of predictors and outcomes in time and collecting objective outcome data where possible (Podsakoff et al., 2003). (4) Assess reflective constructs with indicator loadings, composite reliability and average variance extracted (Fornell & Larcker, 1981), and check discriminant validity with the heterotrait–monotrait ratio (Henseler et al., 2015). (5) Assess formative inclusion indices for collinearity and indicator weights, following current PLS-SEM reporting standards (Hair et al., 2019). (6) Test P5 with bootstrapped indirect effects and multigroup analysis by Shariah-compliance preference and household agency. To support causal claims, future studies should combine the survey with variation in exposure that does not depend on firm characteristics, for example the staggered launch of an Islamic digital product across districts or a randomized offer of a Shariah-compliant account, as in the designs of Field et al. (2021) and Suri and Jack (2016).

6. Discussion

The evidence supports a more cautious account than much of the advocacy literature on Islamic FinTech and women. Three points stand out.

First, the main problem for women in Bangladesh is not credit at the micro level but the digital channel and the move to enterprise-scale finance. Findex shows that women borrow formally as often as men, largely through microfinance, yet women entrepreneurs hold only 7.28% of CMSME credit. Women are also 20 points behind men in account ownership and 21 points behind in digital payments. This fits Shen et al. (2026), who locate the Bangladeshi gender gap in mobile money, and the finding of Banerjee et al. (2015) that micro-loans alone rarely transform businesses. For Islamic FinTech, the implication is clear. Shariah-compliant wallets on their own (channel C1) may raise account ownership among women who exclude themselves for religious reasons, but they will not close the CMSME gap. Closing that gap needs digital financing products (C2 and C3) sized for growing firms.

Second, religious preference is likely to be a moderator rather than the main driver. The cross-country evidence that few unbanked adults cite religion (Demirgüç-Kunt et al., 2014), and the Indonesian evidence that supply conditions and awareness shape Islamic inclusion (Ali et al., 2020), suggest that Islamic FinTech will expand inclusion mostly when it is also cheaper, closer and easier to use than the alternatives. This is why P1 and P5 treat Shariah-compliance preference as a moderator. It also explains why adoption studies find usefulness and ease of use alongside Shariah compliance (Darmansyah et al., 2021).

Third, Islamic banks are well placed in terms of deposits but not yet in terms of products. They hold about a quarter of deposits and have wide branch, window and agent networks (Bangladesh Bank, 2025b). The low CMSME share of their investment, the absence of gender data, and very high reported non-performing loan ratios mean their potential is constrained by asset quality and portfolio choices, not only by technology. The digital Islamic products we could verify are deposit, savings and payment services (Nagad Islamic, and partner-bank Islamic DPS through bKash). This matches the international pattern in which Islamic FinTech reviews describe many payment and platform innovations but few studies of their outcomes (Hasan et al., 2020; Rabbani et al., 2020). In Bangladesh, the jurisprudential foundations for Shariah-compliant mobile banking are in place (Haque & Zahid, 2026), and the FinTech literature on agribusiness shows how digital rails could carry Islamic social finance to small producers (Zahid et al., 2025a, 2025b). The next step is to move from accounts to financing for women-owned firms.

On sustainability, our framework follows Shepherd and Patzelt (2011) and Dean and McMullen (2007) in treating social and environmental outcomes as products of entrepreneurial choice that finance can enable or constrain. The maqasid perspective (Laldin & Furqani, 2013) and Gümüsay's (2015) account of Islamic entrepreneurship give reasons to expect that Shariah-motivated entrepreneurs will put more weight on social outcomes. That expectation is a hypothesis (P5), not a finding. The literature also warns that empowerment depends on control: microfinance can deepen women's indebtedness when social pressure enforces repayment (Karim, 2011), whereas accounts under women's own control can change norms (Field et al., 2021). The control dimension of inclusion in Table 4 reflects this.

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7. Implications

7.1 Theoretical implications

The paper adds a gender-aware and maqasid-based perspective to research on Islamic FinTech, which has been dominated by product description and technology-acceptance models. It specifies how Islamic FinTech channels affect outcomes, separates the access, usage and control dimensions of inclusion, and identifies the moderators that should determine where effects appear. In doing so, it moves the field from claims that Islamic FinTech "empowers" women to propositions that can be falsified. It also shows that sustainable entrepreneurship outcomes can be modeled as the end point of a resources-agency-achievements chain (Kabeer, 1999), which connects development economics and entrepreneurship research.

7.2 Practical implications

For Islamic banks and their FinTech partners, the evidence points to three priorities. First, add digital financing to digital deposits: app-based murabahah and ijarah for working capital and equipment, with limits suited to women's micro and small enterprises and with the asset serving as the main security. Second, recruit and train women agents. Women hold nearly half of agent banking deposit accounts but only 11.5% of agents are women, and women agents may be better placed to originate financing for women clients. Third, build trust through clear Shariah disclosures and service-recovery processes, which research on Islamic FinTech links to retention (Zahid et al., 2025c). Providers should also avoid the debt-trap dynamics documented for some microfinance programs (Karim, 2011) by aligning installments with business cash flows, which profit-and-loss sharing structures permit.

7.3 Policy implications

For Bangladesh Bank, four measures follow from the analysis. (1) Require Islamic banks and Islamic windows to report CMSME financing by sex and by contract type in the quarterly Islamic banking report, so that the 15% floor can be tracked for the Islamic segment. (2) Allow financing originated through Shariah-compliant digital channels, such as MFS-linked murabahah, to count toward the women entrepreneurs' CMSME target and to qualify for refinance windows, subject to Shariah governance. (3) Encourage MFS providers that already offer Islamic accounts to add Shariah-compliant savings-linked financing through regulated bank partners rather than on their own balance sheets. (4) Ask BBS to publish the share of women-headed establishments from the Economic Census 2024, whose published figures we could not locate, so that the denominator for women's enterprise finance is known.

8. Limitations and Future Research

The study has five limitations. First, it relies on secondary data and makes no causal claims. The descriptive patterns in Tables 1 and 2 are consistent with several explanations. Second, the Findex 2025 figures for Bangladesh show a large fall in account ownership compared with 2021. We report these figures as published, but changes in survey methods or field conditions could affect comparability between waves, and the point estimates carry sampling error. Third, several Bangladesh Bank and BBS statistics come from national press reports of official data because the primary tables were not publicly accessible to us. Future work should replace them with the primary documents. Fourth, no sex-disaggregated data exist on the use of Islamic digital financial services, so Section 4.4 can only describe the products on offer. Fifth, the structured review relied on sources whose details could be verified through Crossref, OpenAlex and publisher pages. It is not a full systematic review, and relevant work in Bangla or in regional journals may have been missed.

Future research can proceed in three steps. (1) A baseline survey of women-owned MSMEs that uses the measurement plan in Table 4, stratified by division, firm size and use of Islamic and conventional financial services. (2) Field experiments or staggered-rollout designs that randomize or exploit variation in offers of Shariah-compliant digital accounts and financing, in order to test P1–P3. (3) Panel studies that follow firms through shocks to test P4 and the mediation and moderation in P5. Comparative studies with Indonesia, Malaysia and Pakistan, where Islamic FinTech regulation is more developed, would show how far the framework holds in other settings.

9. Conclusion

Islamic FinTech is often presented as a solution to the "double exclusion" of Muslim women entrepreneurs. Verified public data for Bangladesh support a narrower and more useful conclusion. The gender gap lies mainly in digital payments, mobile money and enterprise-scale credit, not in microcredit. Women entrepreneurs receive less than half of the CMSME credit share the central bank requires. Islamic banks hold a large share of deposits but lend relatively little to CMSMEs and publish no gender data. The Shariah-compliant digital products that exist are accounts and savings schemes rather than financing. Islamic FinTech could therefore matter most if it delivers financing and risk-sharing to women-owned firms through channels the women themselves control. The framework, propositions and measurement plan presented here provide a basis for testing that claim, and the recommended disclosure of sex-disaggregated Islamic finance data would make such testing possible.

Declarations

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Data availability: All data analyzed are publicly available from the sources cited in Tables 1 and 2. Global Findex values were retrieved from the World Bank's Global Findex data service on 2 October 2026.

Author contributions: Md. Shahed Alamm: Conceptualization, Methodology, Writing – original draft, Project administration. Niger Sultana: Formal analysis, Data curation, Writing – review & editing. Md. Aminul Islam: Investigation, Visualization. Ummey Sumaiya: Validation (Shariah aspects), Writing – review & editing. Md. Baharul Hasan: Investigation, Writing – review & editing. All authors read and approved the final manuscript.

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References

1. Abdul Rahman, A. R. (2010). Islamic microfinance: An ethical alternative to poverty alleviation. *Humanomics*, *26*(4), 284–295. https://doi.org/10.1108/08288661011090884
2. Alam, N., Gupta, L., & Zameni, A. (2019). *Fintech and Islamic finance: Digitalization, development and disruption*. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-24666-2
3. Ali, M. M., Devi, A., Furqani, H., & Hamzah, H. (2020). Islamic financial inclusion determinants in Indonesia: An ANP approach. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(4), 727–747. https://doi.org/10.1108/IMEFM-01-2019-0007
4. Aterido, R., Beck, T., & Iacovone, L. (2013). Access to finance in Sub-Saharan Africa: Is there a gender gap? *World Development*, *47*, 102–120. https://doi.org/10.1016/j.worlddev.2013.02.013
5. Bangladesh Bank. (2025a). *Master circular on CMSME financing* (SMESPD Circular No. 01, 17 March 2025) [in Bangla]. SME & Special Programmes Department. https://www.bb.org.bd/mediaroom/circulars/smespd/mar172025smespd01.pdf
6. Bangladesh Bank. (2025b). *Quarterly report on Islamic banking in Bangladesh: January–March 2025*. https://www.bb.org.bd/pub/quaterly/islamic_banking/ibq3_march_2025_pdf.pdf
7. Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, *7*(1), 22–53. https://doi.org/10.1257/app.20130533
8. bKash. (n.d.). *Islamic DPS*. Retrieved October 2, 2026, from https://www.bkash.com/en/products-services/savings/islamic-dps
9. Brush, C. G., de Bruin, A., & Welter, F. (2009). A gender-aware framework for women's entrepreneurship. *International Journal of Gender and Entrepreneurship*, *1*(1), 8–24. https://doi.org/10.1108/17566260910942318
10. Bruhn, M., Hommes, M., Khanna, M., Singh, S., Sorokina, A., & Wimpey, J. S. (2017). *MSME finance gap: Assessment of the shortfalls and opportunities in financing micro, small and medium enterprises in emerging markets*. International Finance Corporation. https://documents1.worldbank.org/curated/en/653831510568517947/pdf/121264-WP-PUBLIC-MSMEReportFINAL.pdf
11. City Bank launches "Islamic DPS Savings" scheme through bKash. (2022, October 10). *The Business Standard*. https://www.tbsnews.net/economy/banking/city-bank-launches-islamic-dps-savings-scheme-through-bkash-511098
12. CMSME loans shrink 5.15% in Q1 amid weak business demand. (2026, August 7). *The Business Standard*. https://www.tbsnews.net/economy/banking/cmsme-loans-shrink-515-q1-amid-weak-business-demand-1508646
13. Darmansyah, D., Fianto, B. A., Hendratmi, A., & Aziz, P. F. (2021). Factors determining behavioral intentions to use Islamic financial technology. *Journal of Islamic Marketing*, *12*(4), 794–812. https://doi.org/10.1108/JIMA-12-2019-0252
14. Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, *22*(1), 50–76. https://doi.org/10.1016/j.jbusvent.2005.09.003
15. Demirgüç-Kunt, A., Klapper, L., & Randall, D. (2014). Islamic finance and financial inclusion: Measuring use of and demand for formal financial services among Muslim adults. *Review of Middle East Economics and Finance*, *10*(2), 177–218. https://doi.org/10.1515/rmeef-2013-0062
16. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank. https://doi.org/10.1596/978-1-4648-1897-4
17. Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, *50*(4), 1051–1079. https://doi.org/10.1257/jel.50.4.1051
18. Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, *8*(1), 37–51. https://doi.org/10.1002/tqem.3310080106
19. Field, E., Pande, R., Rigol, N., Schaner, S., & Troyer Moore, C. (2021). On her own account: How strengthening women's financial control impacts labor supply and gender norms. *American Economic Review*, *111*(7), 2342–2375. https://doi.org/10.1257/aer.20200705
20. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.1177/002224378101800104
21. Gender disparity rising in SME finance. (2026, August 13). *Dhaka Tribune*. https://www.dhakatribune.com/business/banks/417380/gender-disparity-rising-in-sme-finance
22. Ghosh, S., & Vinod, D. (2017). What constrains financial inclusion for women? Evidence from Indian micro data.

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DOI: 10.5281/zenodo.23389751

World Development, 92, 60–81. https://doi.org/10.1016/j.worlddev.2016.11.011

23. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems, 35*(1), 220–265. https://doi.org/10.1080/07421222.2018.1440766

24. Gümüsay, A. A. (2015). Entrepreneurship from an Islamic perspective. *Journal of Business Ethics, 130*(1), 199–208. https://doi.org/10.1007/s10551-014-2223-7

25. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

26. Haque, M. M., & Zahid, Z. (2026). Enhancing sustainable economic development through Shariah-compliant fintech innovations: A jurisprudential analysis of mobile banking in Bangladesh. *International Journal of Human Research and Social Science Studies, 3*(1), 82–88. https://doi.org/10.55677/ijhrsss/10-2026-Vol03I01

27. Hasan, R., Hassan, M. K., & Aliyu, S. (2020). Fintech and Islamic finance: Literature review and research agenda. *International Journal of Islamic Economics and Finance, 3*(1). https://doi.org/10.18196/ijief.2122

28. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

29. Islamic banking deposits up 8.35% in Q1. (2026, July 8). *The Daily Star*. https://www.thedailystar.net/business/economy/news/islamic-banking-deposits-835-q1-4219371

30. Jahid, A. M. (2024, March 24). Gender gap in MFS widens from 3% to 16% in five years. *The Daily Star*. https://www.thedailystar.net/business/economy/news/gender-gap-mfs-widens-3-16-five-years-3573356

31. Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change, 30*(3), 435–464. https://doi.org/10.1111/1467-7660.00125

32. Kaleem, A., & Ahmed, S. (2010). The Quran and poverty alleviation. *Nonprofit and Voluntary Sector Quarterly, 39*(3), 409–428. https://doi.org/10.1177/0899764009332466

33. Karim, L. (2011). *Microfinance and its discontents: Women in debt in Bangladesh*. University of Minnesota Press.

34. Klapper, L., Singer, D., Starita, L., & Norris, A. (2025). *The Global Findex Database 2025: Connectivity and financial inclusion in the digital economy*. World Bank. https://doi.org/10.1596/978-1-4648-2204-9

35. Laldin, M. A., & Furqani, H. (2013). Developing Islamic finance in the framework of maqasid al-Shari'ah. *International Journal of Islamic and Middle Eastern Finance and Management, 6*(4), 278–289. https://doi.org/10.1108/IMEFM-05-2013-0057

36. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52*(1), 5–44. https://doi.org/10.1257/jel.52.1.5

37. Micro and cottage industries drive 50% rise in economic units: BBS. (2026, April 7). *The Business Standard*. https://www.tbsnews.net/economy/micro-cottage-industries-lead-50-surge-economic-units-bbs-1404846

38. Micro, small, medium enterprises in Bangladesh face a financing gap of $2.8 billion. (2023, November 28). *The Business Standard*. https://www.tbsnews.net/economy/micro-small-medium-enterprises-bangladesh-face-financing-gap-28-billion-747726

39. Mohieldin, M., Iqbal, Z., Rostom, A., & Fu, X. (2011). *The role of Islamic finance in enhancing financial inclusion in Organization of Islamic Cooperation (OIC) countries* (Policy Research Working Paper No. 5920). World Bank. https://doi.org/10.1596/1813-9450-5920

40. Mujeri, M. K. (2019, March 21). Female entrepreneurship in Bangladesh. *The Financial Express*. https://thefinancialexpress.com.bd/views/female-entrepreneurship-in-bangladesh-1553181544

41. Muravyev, A., Talavera, O., & Schäfer, D. (2009). Entrepreneurs' gender and financial constraints: Evidence from international data. *Journal of Comparative Economics, 37*(2), 270–286. https://doi.org/10.1016/j.jce.2008.12.001

42. "Nagad Islamic" guarantees Islamic life management. (2022, March 3). *Bangladesh Sangbad Sangstha (BSS)*. https://www.bssnews.net/business/48143

43. Nagad introduces Islamic merchant accounts. (2024, January 29). *Dhaka Tribune*. https://www.dhakatribune.com/business/338077/nagad-introduces-islamic-merchant-accounts

44. Naser, K., Mohammed, W. R., & Nuseibeh, R. (2009). Factors that affect women entrepreneurs: Evidence from an emerging economy. *International Journal of Organizational Analysis, 17*(3), 225–247. https://doi.org/10.1108/19348830910974932

45. Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review, 18*(4), 329–340. https://doi.org/10.1016/j.bir.2017.12.003

46. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71. https://doi.org/10.1136/bmj.n71

47. Pitt, M. M., & Khandker, S. R. (1998). The impact of group-based credit programs on poor households in

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DOI: 10.5281/zenodo.23389751

Bangladesh: Does the gender of participants matter? *Journal of Political Economy*, *106*(5), 958–996. https://doi.org/10.1086/250037

48. Pitt, M. M., Khandker, S. R., & Cartwright, J. (2006). Empowering women with micro finance: Evidence from Bangladesh. *Economic Development and Cultural Change*, *54*(4), 791–831. https://doi.org/10.1086/503580

49. Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

50. Rabbani, M. R., Bashar, A., Nawaz, N., Karim, S., Ali, M. A. M., Rahiman, H. U., & Alam, M. S. (2021). Exploring the role of Islamic fintech in combating the aftershocks of COVID-19: The open social innovation of the Islamic financial system. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), Article 136. https://doi.org/10.3390/joitmc7020136

51. Rabbani, M. R., Khan, S., & Thalassinos, E. I. (2020). FinTech, blockchain and Islamic finance: An extensive literature review. *International Journal of Economics and Business Administration*, *8*(2), 65–86. https://doi.org/10.35808/ijeba/444

52. Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, *23*(5), 613–628. https://doi.org/10.1002/jid.1698

53. Shen, Q. R., Bhuyan, R., Ahmed, S., & Sakina, K. (2026). Fintech, financial access, and financial literacy: Evidence from Bangladesh. *Journal of Risk and Financial Management*, *19*(9), Article 732. https://doi.org/10.3390/jrfm19090732

54. Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed." *Entrepreneurship Theory and Practice*, *35*(1), 137–163. https://doi.org/10.1111/j.1540-6520.2010.00426.x

55. Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

56. Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, *354*(6317), 1288–1292. https://doi.org/10.1126/science.aah5309

57. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425–478. https://doi.org/10.2307/30036540

58. Women entrepreneurs to get loans at 5% interest: Bangladesh Bank. (2021, August 4). *The Business Standard*. https://www.tbsnews.net/economy/banking/female-entrepreneurs-get-loans-5-interest-283549

59. Women's participation in agent banking grows. (2026, September 18). *The Daily Star*. https://www.thedailystar.net/business/economy/news/womens-participation-agent-banking-grows-4275826

60. World Bank. (2025, July 16). *Mobile phone technology powers saving surge in developing economies* [Press release]. https://www.worldbank.org/en/news/press-release/2025/07/16/mobile-phone-technology-powers-saving-surge-in-developing-economies

61. World Bank. (n.d.). *Global Findex Database* [Data set; indicators account.t.d.1/.2, mobileaccount.t.d.1/.2, g20.any.1/.2, fin22a.1/.2, borrow.any.t.d.1/.2, fin17a.17a1.d.1/.2, con1.1/.2 for Bangladesh]. Retrieved October 2, 2026, from https://api.worldbank.org/v2/sources/28/indicators

62. Zahid, Z., Amin, M. R., Alamm, M. S., Meer, W., Shah, M. N., Khalil, I., Sumaiya, U., & Arafat, E. (2025c). Enhancing customer retention in Islamic fintech: A comprehensive approach to service recovery, feedback systems, and Shariah-compliant communication strategies. *International Journal of Multidisciplinary and Innovative Research*, *2*(7), 210–222. https://doi.org/10.58806/ijmir.2025.v2i7n02

63. Zahid, Z., Amin, M. R., Monsur, M. H., Alamm, M. S., Nahid, I. K., Banna, H., Hassan, M. R., Parves, M. M., & Nipa, N. N. (2025a). Integrating FinTech solutions in agribusiness: A pathway to a sustainable economy in Bangladesh. *Communications on Applied Nonlinear Analysis*, *32*(10s), 1784–1794. https://doi.org/10.52783/cana.v32.5338

64. Zahid, Z., Haque, Z. M. E., Nipa, N. N., Amin, M. R., Alamm, M. S., Parves, M. M., & Hasan, M. M. (2025b). Enhancing AgriChain management in South Asia: The role of fintech and Islamic social finance in sustainable agribusiness. *International Journal of Business and Management*, *4*(2), 417–440. https://doi.org/10.56879/ijbm.v4i2.243

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