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DESIGNING ISLAMIC FINANCIAL PRODUCTS FOR MUSLIM FEMALE DOMESTIC WORKERS IN NORTHERN NIGERIA: A HUMAN-CENTERED APPROACH

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Abstract

Financial exclusion remains a significant challenge for Muslim female domestic workers in Northern Nigeria, driven by socio-economic, cultural, and religious barriers. This study adopts a human-centered design (HCD) approach to propose Shari'ah-compliant financial products integrated with digital financial services (DFS) that align with women lived realities. Using a qualitative and conceptual methodology, the study synthesizes evidence from literature, policy documents, and empirical findings to explore user needs, access barriers, and financial behavior among this underserved group. Guided by an HCD framework, empathize, define, ideate, prototype, and test, the paper outlines product models anchored on Islamic finance principles such as Mudarabah, Musharakah, and Qard al-Hasan. Findings reveal that financial inclusion and empowerment are enhanced when products leverage female agent networks, USSD and voice-based platforms, and Islamic social finance instruments like Zakat and Waqf to deliver interest-free, trust-based financial solutions. The study concludes that the integration of Islamic finance ethics, human-centered innovation, and digital technology presents a viable pathway for advancing equitable, sustainable, and faith-aligned financial inclusion among marginalized Muslim women in Northern Nigeria.

Keywords: Islamic finance, human-centered design, digital financial services, Muslim women, Northern Nigeria, financial inclusion, Zakat, Waqf, Qard al-Hasan

JEL Classification: G21, G29, O16, J16, Z12

INTRODUCTION

Financial inclusion is recognized as a core driver of sustainable development, gender equality, and poverty reduction globally (Ogunrinde & Omoniyi, 2024). Yet, in Nigeria, stark disparities remain: approximately 36% of women are financially excluded from the formal sector, compared to 24% of men, with Muslim women, especially in Northern regions, most affected (SDGforHer, 2023). Even when women participate, the lack of tailored, accessible, and culturally appropriate financial products limits the empowerment potential of inclusion (Enhancing Financial Innovation & Access [EFInA], 2024; International Monetary Fund [IMF], 2023). In Nigeria, Islamic finance has grown significantly, reaching over ₦2.5 trillion in total assets by 2023, yet its reach remains largely concentrated in urban and formal sectors (Sunmola & Okoro, 2024). Core Islamic financial instruments such as *Mudharabah*, *Musharakah*, *Murabahah*, and *Qard al-Hasan* are ethically aligned with Muslim values, offering robust alternatives to interest-based models, but are seldom customized for low-income, informal workers (Alaro & Alalubosa, 2019). Female domestic workers in Northern Nigeria, who operate in informal employment, earn inconsistent wages, and often lack legal protections, experience compounding barriers: limited digital literacy, social

Shehu, F. M. (2025). Designing Islamic Financial Products for Muslim Female Domestic Workers in Northern Nigeria: A Human-Centered Approach. *Malete Journal of Accounting and Finance*, 6 (2), 1 - 16

norms restricting mobility, and dependence on male intermediaries (Osiki, 2022). Even when aware of Islamic banking, obstacles such as long branch distances, identity document complexities (e.g. name changes after marriage), and product complexity deter uptake (Hamzat & Nwankwo, 2023)

Recent qualitative work underscores the transformative power of digital financial services (DFS) for domestic workers in Nigeria. Amah et al. (2024) found that mobile phone ownership, coupled with user-friendly DFS, enhances financial security, privacy, and agency for female domestic workers in Lagos. These capabilities enable women to save discreetly, send funds home, and mitigate risks associated with cash handling. Furthermore, quantitative analysis from the 2018 DHS shows that women using mobile money and possessing financial accounts are more likely to participate in decisions over earnings (36% more) and healthcare (25% more) than those without accounts (Funlayo et al., 2024).

Although DFS and Islamic finance individually present inclusion opportunities, their intersection, Shari'ah-compliant digital finance designed with the user in mind, remains largely unexplored for marginalized women (Cambridge Core, 2024). Scholars note that prevailing fintech products in Nigeria are urban-centric and not designed for women's distinct socio-cultural or economic realities (Cambridge Core, 2024). Moreover, agent networks, particularly female agents in Northern Nigeria are critical to bridging access and trust gaps in culturally sensitive contexts (IMF, 2023). This paper proposes a theoretical Human Centered Design (HCD) framework for developing Islamic financial products tailored to Muslim female domestic workers in Northern Nigeria. By integrating qualitative insights, Islamic ethical finance models, DFS delivery mechanisms, and local trust networks, the framework aims to deliver religiously acceptable, culturally appropriate, digitally accessible, and economically empowering financial solutions. This approach affirms that inclusion is not merely about access but about agency, dignity, and relevance for underserved Muslim women.

Despite the rapid growth of Islamic finance and the expanding reach of digital financial services in Nigeria, Muslim female domestic workers in Northern Nigeria remain among the most financially excluded groups. Their exclusion persists due to socio-cultural norms restricting women's mobility, limited digital literacy, irregular income, and the lack of Shari'ah-compliant financial products designed to reflect their unique contexts and values. Addressing this gap requires an integrated framework that combines human-centered design, Islamic finance ethics, and digital innovation to foster inclusive, sustainable financial participation.

LITERATURE REVIEW

Financial Exclusion and Domestic Workers in Nigeria

Domestic work in Nigeria is among the most informal and under-regulated sectors of the labour market, characterized by long working hours, low wages, and minimal social protection, conditions often described as modern-day slavery (Adisa et al., 2021). Domestic workers, predominantly women, are typically employed in private households without formal contracts, legal recognition, or access to social benefits, exposing them to exploitation and persistent poverty (Adisa et al., 2021; UNICEF Innocenti, 2023). Earnings in this sector remain far below national labour standards, with many workers earning less than ₦15,000 per month and working excessively long hours, while only a small minority earn wages approaching the national minimum (Adisa et al., 2021). Furthermore, over half of domestic workers possess a senior

secondary certificate or less, and a significant proportion have no formal education, limiting their ability to navigate formal financial systems (Adisa et al., 2021). Regulatory gaps exacerbate this vulnerability, as domestic workers are excluded from Nigeria's National Minimum Wage Act, which applies primarily to establishments with 25 or more employees, criteria rarely met in household employment settings (Adisa et al., 2021). Consequently, domestic workers often depend on informal savings and credit arrangements or employer discretion.

In addition, qualitative studies indicate that mobile phones enable domestic workers to save, transfer funds, and exercise greater financial autonomy, enhancing privacy, security, and control over income (Amah et al., 2024; BRAC Institute of Governance and Development, 2023). However, digital exclusion remains pronounced. National and industry data indicate that mobile money ownership remains disproportionately lower among women than men in Nigeria, linked to limited literacy, unfamiliarity with technology, and trust and complexity barriers (World Bank, 2022; GSMA, 2024). Older and less-educated women, in particular, report discomfort with mobile and internet banking platforms (Omojolaibi et al., 2024). Despite the promise of DFS, most financial innovations remain urban-focused and designed for relatively stable, middle-income users. Few providers tailor services to domestic workers or address constraints such as lack of identification, formal addresses, or irregular income streams (Aruwa et al., 2025; Omojolaibi et al., 2024). This misalignment reinforces the structural financial exclusion of domestic workers and underscores the need for inclusive, context-sensitive financial models.

Digital Financial Services (DFS) and Domestic Workers

In Nigeria, where domestic workers are predominantly female and largely excluded from formal finance, DFS enabled through mobile phone access offer pathways to improved financial autonomy, privacy, and empowerment (Amah et al., 2024). A qualitative study of 40 female domestic workers in Southwest Nigeria demonstrates that personal mobile phone ownership is a critical enabler of DFS access, facilitating the use of transaction accounts, peer-to-peer transfers, salary alerts, and remittance services (Amah et al., 2024). Access to DFS was associated with enhanced financial security through safer savings mechanisms, increased privacy in income management, and greater agency over earnings. These dimensions of empowerment enabled women to exercise independent financial decision-making and support household needs without reliance on intermediaries.

Additionally, quantitative evidence further reinforces the empowerment effects of digital inclusion. A DHS-based national study found that women with formal or mobile money accounts were significantly more likely to participate in decisions regarding their earnings and household health expenditures than those without such accounts (Funlayo et al., 2024). This underscores the broader link between DFS adoption and women's economic and social agency. Despite these benefits, DFS uptake among domestic workers remains limited. National surveys reveal persistent gender gaps in mobile account ownership, reflecting structural barriers related to low digital literacy, limited education, and lack of user-friendly onboarding mechanisms (Aruwa et al., 2025; Yusuf et al., 2025; Omojolaibi et al., 2024). These constraints are compounded by restrictive gender norms and mobility limitations in some regions, particularly in Northern Nigeria, which reduce women's exposure to digital financial services and training opportunities (Aruwa et al., 2025). While Nigeria-specific interventions remain scarce, international initiatives provide instructive lessons. Programs such as Women's World Banking's partnership with DANA in Indonesia demonstrate that tailored strategies, including employer-mediated salary

Shehu, F. M. (2025). Designing Islamic Financial Products for Muslim Female Domestic Workers in Northern Nigeria: A Human-Centered Approach. *Malete Journal of Accounting and Finance*, 6 (2), 1 - 16

payments, simplified onboarding, and targeted incentives, can significantly improve DFS adoption and sustained use among domestic workers (Women's World Banking, 2025). These insights highlight the importance of context-sensitive, gender-responsive DFS models for addressing the financial exclusion of domestic workers in Nigeria.

Gendered Digital and Financial Inclusion Gaps

Nigeria exhibits a persistent gendered digital divide that constrains women's access to Digital Financial Services (DFS). While mobile phone ownership is high overall, women lag behind men, particularly in smartphone and internet access (Banyan Global, 2023). These disparities are most pronounced in rural northern regions, where women's mobile internet usage remains substantially lower than men's, limiting their ability to engage with DFS (Tech Herfrica, 2024). Socio-cultural norms and patriarchal household structures further restrict women's digital participation, mobility, and access to training or service points (CGAP, 2023; LSE Africa, 2023). Moreover, high costs of devices and internet data disproportionately affect low-income women, reducing regular use of digital platforms (Cherie Blair Foundation for Women, 2025). Even when access exists, effective usage remains limited as significant share of female mobile money users in sub-Saharan Africa require assistance to operate accounts, reflecting persistent literacy and confidence gaps (GSMA, 2023). Similar challenges have been documented among Nigerian women with limited formal education (AFI, 2016).

Despite policy initiatives under Nigeria's National Financial Inclusion Strategy, gender gaps in account ownership remain substantial, indicating the limited effectiveness of conventional DFS rollouts (AFI, 2016). As such, targeted interventions combining device access, localized digital literacy, and tailored financial education, such as Tech Herfrica and community-based programs led by UNFPA and Women's Technology Empowerment Centre (W.TEC), demonstrate greater potential for narrowing gendered digital and financial inclusion gaps (Tech Herfrica, 2023; UNFPA Nigeria, 2023; W.TEC, 2024).

Islamic Finance and Women's Financial Inclusion

Evidence suggests that Islamic finance offers a viable pathway for improving financial inclusion among Nigerian Muslim women. A multi-city study of 357 women entrepreneurs found strong uptake of Islamic financial products, particularly *Mudharabah*, largely accessed through mobile-based platforms, with usage associated with measurable income gains and high satisfaction (Adam Ahmed et al., 2025). These findings highlight the role of Islamic fintech in supporting women's economic participation. Another research further indicates that women's exclusion from Islamic finance is driven primarily by practical access barriers rather than religious constraints. Challenges such as branch distance, documentation requirements, and unstable incomes limit uptake, while religious alignment shapes institutional preference once access barriers are reduced (Hamzat & Nwankwo, 2023).

Islamic social finance mechanisms, including *Zakat* and *Waqf*, have demonstrated positive welfare effects for low-income women, particularly in northern Nigeria, by improving livelihoods and reducing household vulnerability (Muhammad et al., 2018). Additionally, behavioral evidence also shows that attitudes, behavioral intentions, and government support significantly influence Islamic financial product adoption and financial inclusion outcomes (Musa et al., 2024). Despite this potential, Islamic microfinance institutions face institutional constraints, such as regulatory, technological, and capacity limitations, that restrict outreach to low-income women. Nonetheless,

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broader African evidence indicates that greater Islamic finance penetration is associated with improved women's economic and social empowerment, underscoring the need for targeted, inclusion-oriented strategies (Salaudeen & Zakariyah, 2022; Mboutchouang Kountchou et al., 2023).

Islamic Philanthropy, Microfinance, and Empowerment

Islamic philanthropic instruments, particularly *Zakat* and *Waqf*-based financing, play an important role in supporting women's economic empowerment in Nigeria. These faith-based mechanisms mobilize redistributive resources to provide interest-free or risk-sharing finance for marginalized women entrepreneurs, addressing capital constraints and enhancing economic agency (Assayouti et al., 2024). Empirical evidence from Sokoto State indicates that *Zakat*-funded programs have improved women's livelihoods, enterprise performance, and household welfare, contributing to greater economic resilience and decision-making autonomy (Muhammad et al., 2018). Moreover, beyond individual outcomes, *Zakat* and *Waqf* have been linked to broader poverty reduction and sustainable development gains in Northern Nigeria (Tijjani & Al-Shaghdari, 2024). However, institutional analyses highlight persistent challenges, including weak governance structures, funding limitations, and human capital constraints, which undermine the scalability and effectiveness of Islamic social finance initiatives (Shuaib & Sohail, 2022).

Qard al-Hasan (benevolent, interest-free lending) complements *Zakat*-based interventions by providing culturally acceptable microfinance for vulnerable women. Although formal applications in Nigeria remain limited, the principle underpins many empowerment programs and aligns closely with Shari'ah objectives. Recent scholarship emphasizes the potential of digital innovations, such as digital *Zakat* platforms and cash-*Waqf* systems, to improve transparency, outreach, and service delivery, particularly in underserved and rural communities (ICGER, 2022). For Muslim female domestic workers in Northern Nigeria, Islamic philanthropy can offer a viable alternative to conventional finance by leveraging trusted, religiously sanctioned channels. However, realizing this potential depends on strengthened institutional design, effective digital integration, beneficiary awareness, and ethical governance frameworks.

Human-Centered Design (HCD) and Product Accessibility

Many fintech products in Nigeria are developed without meaningful user engagement, limiting accessibility for low-literacy and culturally constrained women (Cambridge Core, 2024). Policy research further emphasizes the importance of female agent networks, particularly in Northern Nigeria, to overcome socio-cultural and geographic barriers to financial access, recommending targeted incentives to expand women's participation as agents (IMF, 2023). Human-Centered Design (HCD) has emerged as a foundational approach to inclusive product development, shifting beyond basic usability to emphasize empathy, participatory engagement, and iterative testing. According to ISO (2025), involving end-users throughout the design process, HCD enables designers to understand lived experiences, identify accessibility barriers, and develop contextually appropriate solutions that reflect users' social, cultural, and technological environments. Iterative testing ensures that products are refined based on real user feedback, improving functionality and adoption across diverse user groups.

Furthermore, advances in accessibility-oriented design demonstrate the broader applicability of HCD principles. Innovations such as extended reality tools, tactile interfaces, and neuroinclusive design approaches illustrate how inclusive design can enhance usability for diverse populations

without compromising functionality (Kasowski et al., 2021; Butler et al., 2021). However, challenges persist, including limited resources, capacity constraints, and the technical expertise required to integrate accessibility features at scale. Research suggest that leveraging digital technologies, including artificial intelligence, may help scale HCD-driven accessibility by streamlining design processes and lowering costs (Jansen, 2025). As such, embedding HCD principles into fintech and financial service design is essential for improving accessibility and inclusion among marginalized populations, particularly women in informal and low-literacy contexts.

Synthesis: Intersection of DFS, Islamic Finance, and Human-Centered Design

Digital Financial Services (DFS) enhance financial inclusion by offering low-cost, accessible banking, credit, and savings solutions (Demirgüç-Kunt et al., 2023). For Muslim populations, DFS must comply with Islamic finance principles, prohibiting interest (*Riba*), emphasizing risk-sharing, and promoting ethical finance, to ensure acceptance (Obaidullah & Khan, 2022; Kamali, 2023). DFS integrated with instruments like *Murabaha*, profit-and-loss sharing, and *Qard al-Hasan* can empower Muslim women in developing contexts (Ghosh, 2023; Ali & Dar, 2024). Human-Centered Design (HCD) ensures products are usable, culturally relevant, and aligned with users' realities by engaging communities to address digital literacy, trust, and socio-cultural barriers (Brown & Wyatt, 2022; Ibrahim & Abdullahi, 2023). HCD-led interventions in Southeast Asia show that simplified interfaces, religious cues, and community endorsement improve adoption and trust (Ismail et al., 2022).

The intersection of DFS, Islamic finance, and HCD combines technological scalability, religious legitimacy, and user-centered design to overcome financial, digital, and cultural barriers for Muslim women (Wang & Hussain, 2024; Okoro & Yusuf, 2023). Digital Islamic finance can also incorporate philanthropic elements like *Zakat* to provide social safety nets (Tijjani & Al-Shaghdari, 2024). Challenges include regulatory ambiguity, limited rural digital infrastructure, gendered digital divides, and the complexity of Shari'ah compliance, requiring collaboration among fintech developers, Islamic scholars, and users (Adeoye & Bello, 2023; Mohiuddin & Rahman, 2022). Future directions emphasize partnerships, co-creation, and leveraging AI and big data to customize financial solutions, improve risk assessment, and enhance financial literacy for Muslim women (Saad & Nair, 2023; Al-Khatib et al., 2024).

Theoretical Framework

This study is anchored on the Human-Centered Design (HCD) framework and the Theory of Planned Behavior (TPB). The HCD framework emphasizes empathy, user participation, and iterative design, ensuring that financial products are culturally appropriate, accessible, and responsive to users' lived realities. It guides the process of understanding the needs, motivations, and constraints of Muslim female domestic workers, ensuring product design aligns with their social and religious contexts. Complementarily, the Theory of Planned Behavior (TPB) explains the behavioral dimensions influencing the adoption of Islamic financial products. According to TPB, intention to adopt is determined by attitudes, subjective norms, and perceived behavioral control. These constructs illuminate how faith-based attitudes, social expectations, and access constraints shape women's willingness to engage with Shari'ah-compliant digital finance. Together, HCD and TPB provide a robust theoretical foundation for developing user-driven, ethically aligned financial solutions that foster inclusion and empowerment among marginalized Muslim women.

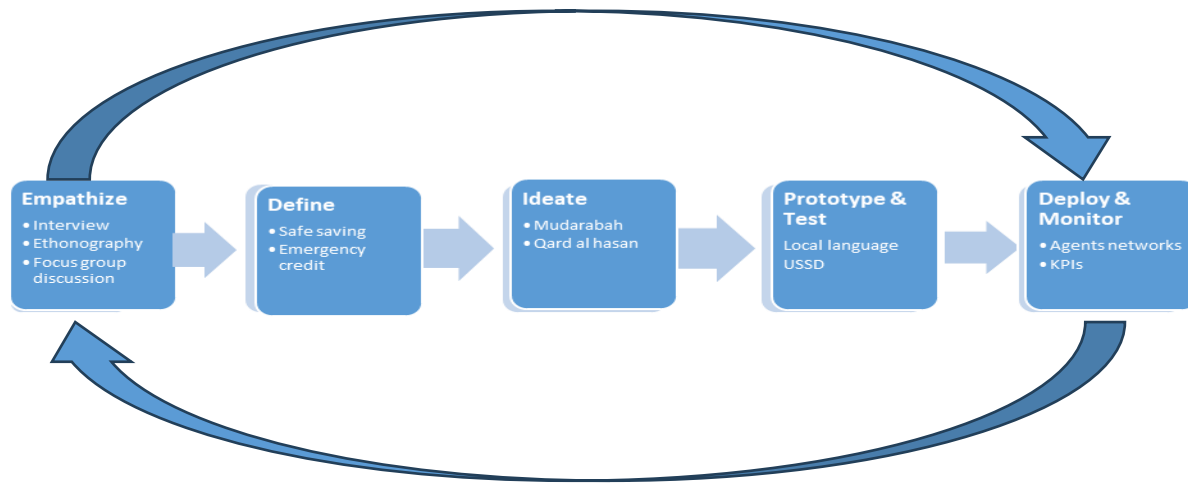


Figure 1: Five-Stage Human-Centered Design Framework for Shari’ah-Compliant Financial Products

Designing Islamic financial products tailored to the needs of Muslim female domestic workers in Northern Nigeria requires a nuanced human-centered approach that integrates religious compliance with socio-cultural and technological realities. The proposed five-stage framework follows the iterative HCD process, adapted to embed Islamic finance principles and contextual factors.

Empathize

Empathy is foundational in understanding the lived experiences, challenges, and aspirations of domestic workers. Qualitative methods such as in-depth interviews, focus groups, and ethnographic observations are critical for capturing nuanced insights into financial goals, religious concerns, digital behavior, and social trust networks (Kumar et al., 2022). Considering language preferences (Hausa, Pidgin) and digital literacy levels is vital, as language barriers and limited technological skills often hinder product usability (Amankwah-Amoah et al., 2023). Prior research highlights that domestic workers rely heavily on informal financial arrangements embedded in social networks, indicating trust and privacy as paramount (Obaidullah & Khan, 2022). These insights enable culturally sensitive and accessible product design.

Define

Synthesizing user insights into clear problem statements allows focused innovation. Key needs such as safe, private mobile saving with low minimum thresholds align with documented constraints of low-income workers who cannot maintain high minimum balances (Ali & Dar, 2024). Access to interest-free emergency credit adheres to Shari’ah prohibitions on *Riba* and responds to urgent liquidity needs without compromising religious beliefs (Kamali, 2023). Group-based income smoothing resonates with communal financial practices common in Islamic contexts, such as rotating savings and credit associations (ROSCAs) (Ghosh, 2023). Trustworthy delivery channels through peer networks or female agents address gendered mobility constraints and digital access gaps (Ibrahim & Abdullahi, 2023).

Shehu, F. M. (2025). Designing Islamic Financial Products for Muslim Female Domestic Workers in Northern Nigeria: A Human-Centered Approach. *Malete Journal of Accounting and Finance*, 6 (2), 1 - 16

Ideate

Brainstorming Islamic-compliant product ideas integrates classical Islamic finance contracts with digital innovation. *Mudharabah* micro-investment accounts facilitate pooled savings with profit-sharing, reflecting risk-sharing principles (Kamali, 2023). *Musharakah* group loans promote collaborative financing among women and their employer micro-enterprises, enhancing social capital (Ali & Dar, 2024). *Qard al-Hasan* emergency loans leverage philanthropic resources like *Zakat* and *Waqf* to provide interest-free credit, blending financial inclusion with Islamic social finance mechanisms (Tijjani & Al-Shaghdari, 2024). *Murabahah* installment purchasing enables small asset acquisition via transparent markup agreements, operationalized through mobile platforms to overcome liquidity constraints (Ghosh, 2023).

Prototype & Test

Developing low-tech prototypes such as USSD menus and voice-guided interfaces accommodates limited smartphone penetration and varying literacy levels (Singh et al., 2023). Local language interfaces enhance comprehension and adoption (Amankwah-Amoah et al., 2023). Utilizing community-based networks such as FOMWAN (Federation of Muslim Women's Associations in Nigeria), which has extensive female membership across Northern states, facilitates trust and peer support in service delivery (FOMWAN, 2024). Usability testing with iterative feedback cycles helps refine interface clarity, transaction flows, and religious transparency factors proven to increase trust and sustained engagement (Brown & Wyatt, 2022).

Deploy & Monitor

Launching pilot programs through female agent networks enables localized support and education, critical for overcoming cultural and digital barriers (Ibrahim & Abdullahi, 2023). Training peer educators empowers communities and reinforces trust. Monitoring key performance indicators such as uptake, savings behavior, loan usage, user autonomy, and satisfaction informs continuous product iteration (Demirgüç-Kunt et al., 2023). Feedback loops facilitate responsiveness to evolving user needs and regulatory environments, aligning with agile product development best practices (Saad & Nair, 2023).

METHODOLOGY

This study adopts a qualitative, conceptual research design that synthesizes insights from Islamic finance, digital financial inclusion, and human-centered design (HCD) literature to develop a framework for Shari'ah-compliant financial products tailored to Muslim female domestic workers in Northern Nigeria. Conceptual methodology enables the integration of multidisciplinary theories and evidence to construct a new model, rather than relying on primary data collection (Jaakkola, 2020). The study follows an interpretivist paradigm, emphasizing contextual understanding and meaning-making from existing scholarly and policy sources (Creswell & Poth, 2018). It employs documentary analysis and qualitative synthesis of peer-reviewed articles, institutional reports, and case studies on digital financial services (DFS), women's financial inclusion, and Islamic social finance mechanisms. This method allows for critical interpretation of existing findings to generate new theoretical linkages among Islamic finance, gendered digital inclusion, and human-centered innovation.

Sources of Data and Selection Criteria

Secondary data were drawn from reputable databases and policy repositories, including Scopus, Google Scholar, IMF, EFINA, and UN reports published between 2015 and 2025. Selection focused on literature addressing:

- i. Islamic financial inclusion in Nigeria and comparable Muslim-majority contexts;
- ii. Human-centered design applications in financial product development; and
- iii. Gendered digital and financial inclusion barriers.

Sources were screened for conceptual relevance, methodological rigor, and contextual applicability to Northern Nigeria.

Technique of Analysis

A qualitative thematic synthesis approach (Braun & Clarke, 2006) was applied to identify recurring patterns and theoretical intersections across the reviewed literature. Three thematic dimensions emerged: (i) socio-religious barriers to inclusion, (ii) digital and institutional gaps, and (iii) opportunities within Islamic social finance. These insights were then conceptually integrated using the Human-Centered Design (HCD) and Theory of Planned Behavior (TPB) frameworks to construct a five-stage design model emphasizing empathy, co-creation, and Shari'ah compliance.

Conceptual qualitative analysis is most appropriate for underexplored topics that require theoretical model building rather than hypothesis testing (Snyder, 2019). The adopted approach enables an evidence-based synthesis that combines theory, empirical insights, and contextual realities into a coherent framework addressing faith-aligned financial exclusion among marginalized Muslim women. The process is iterative and reflexive, ensuring the resulting model aligns with both academic rigor and practical applicability in Islamic finance innovation.

DISCUSSIONS

By linking financial inclusion data (EFInA 2024), Islamic banking awareness (Hamzat & Nwankwo, 2023), fintech potential (Sulaiman 2024), and product design imperatives (Cambridge Core 2024), this integrated framework addresses both demand side and supply side constraints. Domestic workers are excluded not because they reject religion-based products, but because access is poor, awareness low, and products often misaligned with their lived realities (Hamzat & Nwankwo, 2023). Human centered design facilitates cultural adaptation and usability, while Islamic fintech development offers structure for ethical, interest-free services (Sulaiman, 2023). Agent banking and localized deployment allow for overcoming geographic and trust barriers (IMF, 2023). The findings and conceptual framework presented illuminate the critical role that an integrated approach combining Digital Financial Services (DFS), Islamic finance principles, and Human-Centered Design (HCD), plays in enhancing financial inclusion for Muslim female domestic workers in Northern Nigeria. This discussion synthesizes how these elements address the multifaceted barriers to inclusion, while also highlighting practical implications, challenges, and directions for future research.

Addressing Financial and Cultural Barriers through Shari'ah-Compliant DFS

The persistent financial exclusion of female domestic workers in Northern Nigeria is deeply rooted in socio-cultural, religious, and economic factors (Okoro & Yusuf, 2023). Islamic finance principles, notably the prohibition of interest (*Riba*) and emphasis on ethical profit-sharing, create financial products that are both religiously acceptable and culturally resonant, thus increasing

Shehu, F. M. (2025). Designing Islamic Financial Products for Muslim Female Domestic Workers in Northern Nigeria: A Human-Centered Approach. *Malet Journal of Accounting and Finance*, 6 (2), 1 - 16

adoption likelihood (Kamali, 2023). DFS platforms designed around these principles can fill gaps left by conventional banking, offering accessible, affordable, and trustable services that honor users' faith (Ghosh, 2023). The conceptual framework's emphasis on product features such as *Qard al-Hasan* emergency loans and *Mudharabah* investment accounts aligns with the Islamic social finance literature demonstrating how interest-free loans and risk-sharing investments enhance financial resilience among marginalized Muslim women (Tijjani & Al-Shaghdari, 2024). The incorporation of philanthropic funding sources such as *Zakat* and *Waqf* further integrates social safety nets with financial empowerment, which prior studies link to sustainable community development (Obaidullah & Khan, 2022).

Leveraging Human-Centered Design to Overcome Gendered Digital Exclusion

Despite rapid technological advancement, digital financial inclusion for women lags behind men due to factors like low digital literacy, language barriers, and restricted mobility (Amankwah-Amoah et al., 2023). The use of Human-Centered Design in the proposed framework ensures that products are developed with deep user empathy, iterative prototyping, and culturally appropriate interfaces, which have been empirically shown to increase digital financial service uptake among women in conservative societies (Singh et al., 2023; Ibrahim & Abdullahi, 2023). For example, engaging female peer educators and trusted community networks such as FOMWAN leverages social capital, mitigates trust deficits, and navigates gender norms restricting direct access to male agents (FOMWAN, 2024). This aligns with evidence that community-based delivery models increase the reach and acceptability of financial products among marginalized women (Saad & Nair, 2023).

Challenges in Implementation and Sustainability

While the integration of DFS, Islamic finance, and HCD holds promise, several challenges must be addressed. Regulatory ambiguity around digital Islamic finance can delay product launches and create compliance risks (Adeoye & Bello, 2023). Furthermore, limited digital infrastructure, especially in rural Northern Nigeria, may hinder reliable access to mobile financial services (Demirgüç-Kunt et al., 2023). Culturally ingrained gender roles and limited financial autonomy can reduce women's ability to independently manage digital financial accounts, requiring additional supportive interventions such as financial literacy and empowerment training (Ibrahim & Abdullahi, 2023). There is also a need for continued Shari'ah governance oversight to maintain religious compliance as products evolve technologically (Mohiuddin & Rahman, 2022).

Comparison with Existing Financial Inclusion Frameworks

To underscore the distinct value of the proposed Human-Centered Islamic Financial Inclusion (HCIFI) framework, it is essential to contrast it with existing mainstream approaches. Most prevailing financial inclusion models, such as the World Bank's Universal Financial Access Framework (UFA), emphasize expanding access through digital accounts, credit, and savings products (Demirgüç-Kunt et al., 2023). While these frameworks prioritize outreach and affordability, they often adopt a technology-driven, value-neutral orientation that overlooks the religious, cultural, and gendered dimensions influencing women's adoption in Muslim contexts. Similarly, the Alliance for Financial Inclusion (AFI) Gender Inclusive Finance Framework focuses on regulatory and institutional reforms to close the gender gap (AFI, 2017), but offers limited guidance on product design processes that embed users' cultural and faith-based needs.

Shehu, F. M. (2025). Designing Islamic Financial Products for Muslim Female Domestic Workers in Northern Nigeria: A Human-Centered Approach. *Malete Journal of Accounting and Finance*, 6 (2), 1 - 16

In contrast, the HCIFI framework integrates Human-Centered Design (HCD) with Islamic finance principles, thus bridging the gap between access and acceptance. By embedding empathy, participatory design, and Shari'ah compliance within each design stage, it responds directly to socio-religious norms that often constrain Muslim women's financial behavior (Ibrahim & Abdullahi, 2023). Moreover, unlike Women's World Banking's gender lens approach, which centers on behavioral insights and gender segmentation (Women's World Banking, 2025), the HCIFI model explicitly incorporates Islamic social finance instruments, *Zakat*, *Waqf*, and *Qard al-Hasan*, as ethical funding sources for interest-free financial inclusion. Therefore, the distinct value of this framework lies in its triadic integration of (1) faith alignment, (2) human-centered process design, and (3) digital accessibility, offering a culturally congruent pathway for inclusion that transcends the one-size-fits-all models dominant in global financial inclusion discourse.

Implications for Policy and Practice

The proposed human-centered, Shari'ah-compliant financial product framework presents actionable insights for key stakeholders, Islamic financial institutions, fintech and regulatory bodies, and policymakers/civil society. Each actor plays a pivotal role in ensuring these innovative financial solutions translate into meaningful financial inclusion for Muslim female domestic workers in Northern Nigeria.

Islamic financial institutions are uniquely positioned to spearhead the development of products that are both economically viable and religiously compliant. Designing low-cost, low-balance *Mudharabah* savings and micro-investment accounts can significantly lower entry barriers for domestic workers with limited disposable income (Ali & Dar, 2024). Such accounts operationalize the risk-sharing principle, enabling clients to participate in profit generation while avoiding interest-based transactions, which aligns with clients' faith and ethical concerns (Kamali, 2023). Furthermore, institutions should create group-based *Musharakah* loan products that facilitate collective ownership and profit-loss sharing, reinforcing social solidarity among women (Ghosh, 2023). The establishment of *Qard al-Hasan* interest-free emergency credit schemes can provide crucial liquidity support during financial shocks, funded via community philanthropy like *Zakat* and *Waqf* (Tijjani & Al-Shaghdari, 2024). To ensure effective outreach, Islamic banks must partner with trusted community agents, such as FOMWAN and trained female agents, who understand local cultural dynamics and can provide on-the-ground financial education and service delivery (FOMWAN, 2024; Ibrahim & Abdullahi, 2023).

Fintech companies have an opportunity to innovate user-friendly digital financial services tailored to marginalized populations. This includes developing accessible USSD-based and voice-guided platforms in local languages, addressing the digital literacy and language barriers faced by many domestic workers (Singh et al., 2023; Amankwah-Amoah et al., 2023). Regulators should provide supportive frameworks for non-interest digital financial services, clarifying compliance guidelines that enable rapid deployment without legal uncertainties (Adeoye & Bello, 2023). Incentivizing the expansion of female agent networks is crucial in Northern Nigeria's gender-segregated context, improving trust and service accessibility for women users (Ibrahim & Abdullahi, 2023; IMF, 2023). Collaborative efforts between fintech, regulators, and community organizations can foster innovation ecosystems that sustain financial inclusion (Saad & Nair, 2023).

Policymakers must recognize the potential of Islamic social finance to complement national inclusion strategies. Enabling *Zakat* and *Waqf*-funded seed capital channels can sustainably finance *Qard al-Hasan* loan pools, embedding financial inclusion within religiously sanctioned social safety nets (Obaidullah & Khan, 2022; Tijjani & Al-Shaghdari, 2024). Strengthening financial and digital literacy programs tailored to informal women workers is essential for improving financial autonomy and digital competence, which are prerequisites for meaningful financial inclusion (Ibrahim & Abdullahi, 2023; Amankwah-Amoah et al., 2023). Incorporating Islamic financial inclusion goals into the National Financial Inclusion Strategy (NFIS) will align national policy with the specific needs of Muslim women, enabling targeted resource allocation and stakeholder coordination (Okoro & Yusuf, 2023; IMF, 2023). Civil society organizations, particularly women-led groups, should be engaged as active partners in policy implementation, advocacy, and community mobilization (FOMWAN, 2024).

CONCLUSION

This paper has underscored the pressing need for tailored financial solutions that address the unique socio-economic and religious contexts of Muslim female domestic workers in Northern Nigeria, a demographic often overlooked in mainstream financial inclusion efforts. By integrating the principles of Islamic finance with the transformative potential of digital financial services (DFS) and the empathetic rigor of Human-Centered Design (HCD), this study presents a holistic framework that bridges critical gaps in accessibility, affordability, and cultural acceptability. The synthesis of current literature and the proposed five-stage human-centered design process highlight that financial products aligned with Shari'ah law, such as *Mudharabah* savings, *Musharakah* group loans, and *Qard al-Hasan* emergency credit, not only resonate deeply with the values and lived realities of Muslim women but also facilitate sustainable economic empowerment through ethical, interest-free, and risk-sharing financial mechanisms (Kamali, 2023; Tijjani & Al-Shaghdari, 2024). Incorporating local languages, peer networks, and female agents into DFS delivery further ensures that digital platforms overcome common barriers related to literacy, trust, and gender norms (Singh et al., 2023; Ibrahim & Abdullahi, 2023).

Moreover, the role of Islamic philanthropy, through mechanisms like *Zakat* and *Waqf*, in providing seed capital for interest-free loans offers a promising avenue for embedding social welfare within financial products, reinforcing communal solidarity while addressing urgent liquidity needs (Obaidullah & Khan, 2022). The human-centered approach advocated here aligns with emerging best practices in fintech innovation, emphasizing iterative prototyping, community engagement, and cultural sensitivity as critical to fostering sustained usage and satisfaction (Saad & Nair, 2023). Nonetheless, realizing this vision demands concerted effort from Islamic financial institutions, fintech innovators, regulatory bodies, policymakers, and civil society. Regulatory frameworks must evolve to accommodate and incentivize Shari'ah-compliant digital products, while financial literacy and empowerment initiatives must target the socio-cultural challenges that inhibit women's financial agency (Adeoye & Bello, 2023; Amankwah-Amoah et al., 2023)..

In conclusion, the fusion of Islamic finance ethics, digital innovation, and human-centered design offers a compelling pathway to bridge financial exclusion among marginalized Muslim women. By honoring faith, respecting local contexts, and leveraging technology thoughtfully, this integrated approach holds significant promise for advancing equitable, sustainable financial inclusion in Northern Nigeria and beyond.

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