

Baitul Maal wat Tamwil (BMT) Digital Transformation Strategy in Accelerating MSME Empowerment: A Systematic Literature Review (2019-2025)

Muhammad Sulton Fatoni^{1)*}, S. Ach Bakir²⁾, Ulya Dharodjah³⁾

¹²³Sekolah Tinggi Agama Islam Darul Hikmah Bangkalan, Indonesia

202293290549@darul-hikmah.com^{1)*}, bakir@darul-hikmah.com²⁾, Dharojah@darul-hikmah.com³⁾

Abstract

This research aims to synthesize and map the strategy for empowering Micro, Small, and Medium Enterprises (MSMEs) through Islamic microfinance institutions, especially Baitul Maal wat Tamwil (BMT), in the midst of the massive acceleration of the digital economy. The main focus of this study is to analyze how digital transformation can address the challenges of capital accessibility, financial inclusion, and service efficiency for micro business actors. Using *the Systematic Literature Review* (SLR) method through the PRISMA protocol, this study synthesized 35 key articles filtered from reputable databases (Scopus, Crossref, and Google Scholar) in the publication time range of 2019 to 2026. The results of the study show that the main key to the success of MSME empowerment lies in three integrative pillars: (1) the adoption of *Financial Technology* (fintech) in sharia operations to expand the range of services, (2) the digitization of Islamic philanthropic instruments (ZISWAF) as sustainable productive capital, and (3) digital literacy improvement programs for business actors. The research findings confirm that the digital synchronization of *the functions of Maal and Tamwil* is able to accelerate the achievement of economic independence in line with the principles of *Maqashid Sharia*. However, structural challenges such as cybersecurity risks, regulatory inequality, and low digital literacy of human resources remain critical obstacles. This research provides managerial implications in the form of a strategic roadmap for Islamic microfinance managers to standardize technology to create an inclusive, transparent, and sustainable microfinance ecosystem in the industrial era 5.0.

Keywords: *Baitul Maal wat Tamwil (BMT), Digital Financial Technology, MSME Empowerment, Islamic Microfinance, Maqashid Syariah.*

Introduction

The current global digital economy phenomenon has created a fundamental paradigm shift in the financial sector landscape, where technological innovation is no longer just a supporting instrument, but rather a key engine for the acceleration of universal financial inclusion (Fajri et al., 2023; Fatriansyah et al., 2023; Masud & Syamsurrijal, 2024; Septianingsih & Abdullah, 2023). The integration of technology in the financial system has redefined the way people interact with banking and microfinance institutions, creating opportunities for the population *unbanked* and *underbanked* to gain equal and transparent access to services (R. Maulana & Yazid, 2025; Rohmah et al., 2026; Suseno, 2020). In the midst of this dynamic, Micro, Small, and Medium Enterprises (MSMEs) play a crucial role as the backbone of the national economy in many developing countries, but their existence is often squeezed by classic structural problems such as capital gaps, limited marketing networks, and low technological proficiency on the verge of the Industry 5.0 era (Alvinita et al., 2025; M. K. Anwar et al., 2023; Florado et al., 2025; R. Maulana & Yazid, 2025; Nuraeni & Sopiah, 2023; Rahayu, 2024). It is in this context that Islamic microfinance institutions, especially Baitul Maal wat Tamwil (BMT), are present as unique strategic institutions because they have characteristics *Hybrid* that

incorporates commercial missions (*Tamwil*) and social mission (*Grind*) to empower grassroots communities (Cahyono et al., 2024; Ekawati & Kusumaningtiyas, 2024; Garbo, 2025; Puspitasari & Hasanah, 2018; Subhan & Delvianti, 2024). As a community-based institution, BMT has comparative advantages in the form of emotional and geographical proximity to micro business actors, which allows the mentoring process to be carried out more intensively than formal financial institutions ((Afina & Cahyono, 2024; Ma'ruf et al., 2022; Mahmudah et al., 2025) However, the urgency of digital transformation for BMT is getting stronger, especially after the pandemic disruption, where adoption *Digital Financial Technology* (Fintech) is the main determinant in maintaining the resilience, accountability, and competitiveness of institutions in the midst of the siege of online financing applications that are often exploitative (Fauzi, 2022; Fauzi & Darussalam, 2022; Mas'ud, 2022; Masud & Syamsurrijal, 2024; Media et al., 2020a; Septianingsih et al., 2024)

The digitization of services at BMT has proven to be able to optimize operational efficiency significantly, ranging from the automation of the Islamic credit scoring system, data-based risk management, to expanding market reach through the digital wallet ecosystem and e-commerce platforms (Fatriansyah et al., 2023; Kahfi & Marzuki, 2025; H. Maulana & Efriansyah, 2025; R. Maulana & Yazid, 2025; Ramaditya et al., 2025). Furthermore, the integration of digital Islamic philanthropic instruments such as Zakat, Infaq, Alms, and Waqf (ZISWAF) has opened up new horizons for the provision of productive capital that is not only oriented to short-term profits, but also to the welfare of the ummah that is holistic according to the principles *Maqashid Syariah* (Albanjari, 2023; Garbo, 2025; Imro'ah et al., 2024; Khairi et al., 2025; Kusuma & Azis, 2025; Wulandari & Pertiwi, 2026). This innovation allows BMT to carry out the function of wealth redistribution in a more precise, transparent, and wide-ranging impact for the strengthening of an inclusive economy through money waqf schemes and charitable financing (*Qardhul Hasan*) (Garbo, 2025; Khairi et al., 2025; Rohmah et al., 2026).

Despite the enormous potential offered by digital technologies, the journey towards a well-established digital ecosystem for BMTs still faces complex multidimensional obstacles. Much literature highlights that low digital literacy, both in terms of BMT's internal human resources and on the side of MSME actors, is the main barrier to optimizing financial technology features (Puspitasari & Hasanah, 2018; Scott, 2023, 2024; Septianingsih et al., 2024; Wulandari & Pertiwi, 2026). In addition to the competency aspect, cybersecurity threats, risks, *fraud*, and customer data integrity is emerging as a new risk that demands robust data protection systems and adaptive government regulations (Haerudin et al., 2024; Masud & Syamsurrijal, 2024; Septianingsih et al., 2024). Research gaps (*research gap*) is evident where the majority of previous studies tend to be descriptive-partial and often ignore the ethical challenges as well as comprehensive long-term technology standardization up to the period 2025-2026 (Haerudin et al., 2024; Septianingsih et al., 2024).

Based on the complexity of this background, this study aims to conduct a systematic literature review (*Systematic Literature Review*) to synthesize findings from a variety of reputable literature and formulate a roadmap (*Roadmap*) for strategic strengthening of BMT in the digital era. By exploring the synergies between financial technology, productive social fund governance, and strengthening the capacity of MSMEs through the PRISMA framework, it is hoped that this research will be able to make a theoretical contribution to the global Islamic microfinance literature and provide practical recommendations for policymakers in creating a resilient, inclusive, and sustainable Islamic economic ecosystem in the future (M. K. Anwar et al., 2023; Cahyono et al., 2024; Fatriansyah et al., 2023; Garbo, 2025; Haerudin et al., 2024; Imaroh & Tanjung, n.d.; Khairi et al., 2025; Mahmudah et al., 2025; Masud & Syamsurrijal,

2024; R. Maulana & Yazid, 2025; Rahayu, 2024; Ramaditya et al., 2025; Rohmah et al., 2026; Septianingsih et al., 2024; Wulandari & Pertiwi, 2026).

Research Methods

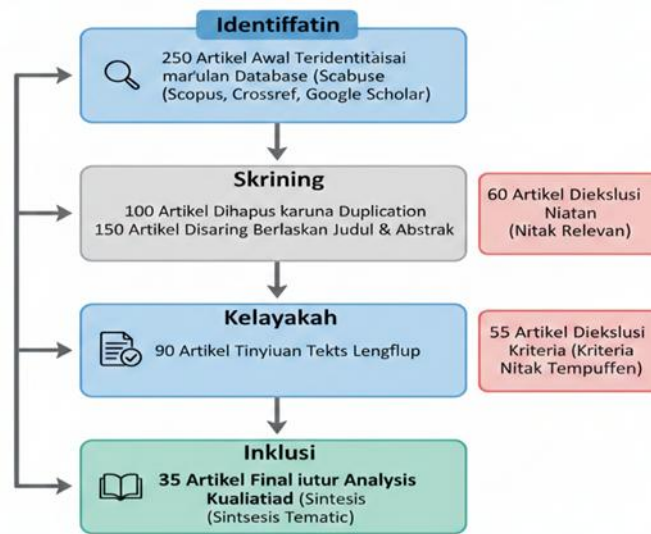
This research was carried out by adopting a design *Systematic Literature Review* (SLR) as the main instrument to identify, evaluate, and synthesize all relevant scientific findings regarding the strategy of empowering MSMEs through Baitul Maal wat Tamwil (BMT) in the digital economy era (Haerudin et al., 2024; Septianingsih et al., 2024). The use of the SLR method is seen as the most effective to provide an in-depth understanding of current research trends as well as map research gaps (*research gap*) that has not been explored in Islamic microfinance literature (Fajri et al., 2023). To ensure the transparency, objectivity, and credibility of the analysis process, the study strictly follows the international standard reporting protocol PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*).

The data collection process is carried out electronically through Publish or Perish (PoP) software to capture literature from globally reputable bibliographic databases, including Scopus, Crossref, and Google Scholar (Haerudin et al., 2024; Septianingsih & Abdullah, 2023). The literature search strategy is constructed using a combination of Boolean operators to ensure the sharpness of the results, with specific keywords: ("*Baitul Maal wat Tamwil*" OR "*BMT*") AND ("*Digitalization*" OR "*Fintech*") AND ("*Empowerment*" OR "*UMKM*"). The publication time limit is deliberately set in the range of 2019 to 2026, a methodological decision to capture the most up-to-date digital transformation phenomenon and relevant to the current dynamics of the Islamic finance industry (Rohmah et al., 2026; Wulandari & Pertiwi, 2026).

The eligibility of articles is determined through clearly defined inclusion and exclusion criteria to ensure the quality of primary data (Haerudin et al., 2024). The inclusion criteria include scientific journal articles that have gone through a peer review process (*peer-reviewed*), focuses on the synergy of digital technology and BMT's operations, and is available in full text (*full-text*) in both Indonesian and English (Cahyono et al., 2024). On the other hand, the exclusion criteria are applied to manuscripts that are opinions, book reviews, proceedings that are not indexed, and studies that do not discuss aspects of economic empowerment (Fajri et al., 2023; Septianingsih et al., 2024).

Through the PRISMA flow, the selection procedure is carried out in stages starting from the initial document identification stage, screening based on titles and abstracts to eliminate duplication, to in-depth feasibility evaluation of the content of the article (Cahyono et al., 2024; R. Maulana & Yazid, 2025). Based on the rigorous screening process, 35 key articles were selected that were considered to have sufficient scientific relevance and weight to be analyzed in the final inclusion stage (D. R. Anwar et al., 2023; Garbo, 2025). The collected data were then extracted into a thematic synthesis matrix and analyzed using the *thematic synthesis* to formulate new propositions and strategic roadmaps for the sustainable development of BMT in the digital era (Haerudin et al., 2024; Mahmudah et al., 2025; Scott, 2024).

Figure 1 : Research method flow chart



Result And Discussion

Typology Of Digital Transformation Strategy in BMT

Digital transformation in the Baitul Maal wat Tamwil (BMT) ecosystem is no longer seen as a mere situational adaptation to market changes, but rather a fundamental re-engineering of business models (*business model reinvention*) to maintain the resilience and relevance of the institution in the midst of aggressive *financial technology*, Increasingly Massive Global (Fajri et al., 2023; Fatriansyah et al., 2023; Masud & Syamsurrijal, 2024; Septianingsih et al., 2024). This strategy is a proactive response to the shifting economic behavior of members which is now dominated by a digitally literate generation that demands transparency, speed, and accessibility without space and time limits. Based on a comprehensive synthesis of the literature, this transformation strategy moves systematically through three evolutionary stages that are mutually continuous and have different managerial implications.

The first phase is focused on the digitization of operational infrastructure (*Back-end Transformation*). In this phase, BMT undertook a massive migration from traditional record-keeping that was semi-manual and prone to human error (H. Maulana & Efriansyah, 2025; R. Maulana & Yazid, 2025) towards the use of a *Cloud-based Core Banking System* integrated (H. Maulana & Efriansyah, 2025; R. Maulana & Yazid, 2025). Theoretically, this step is an effort to strengthen good corporate governance (*Good Corporate Governance*). Cloud technology implementation (*cloud*) proved crucial not only for internal bureaucratic efficiency and reduction of operational costs (*overhead*), but also to ensure the accuracy of automatic revenue sharing calculations, transparency of financial reporting, and more precise Sharia compliance (Haerudin et al., 2024; R. Maulana & Yazid, 2025). The existence of digitized data allows the Sharia Supervisory Board (DPS) to conduct audits in a systematic manner, in *real-time*, ensuring that every financing transaction remains within the corridor of Islamic law without any elements of *Gharar* or *Shirley The Hidden* (Imaroh & Tanjung, n.d.; Khairi et al., 2025).

Entering the second phase, the strategic focus shifted radically to application-based service innovation (*Front-end Transformation*). Literacy shows that the launch of the app *Mobile BMT* that features *Payment Point Online Bank* (PPOB), integration of *Quick Response Code Indonesian Standard* (QRIS), and the interbank transfer feature has reduced transaction costs

for MSME members to the minimum (Kahfi & Marzuki, 2025; Ramaditya et al., 2025; Rohmah et al., 2026). This technology acts as an instrument of "democratization" of financial access (*financial democratization*). Members in rural areas now have transactional capabilities on par with commercial banking customers in urban areas, effectively breaking their chains of dependence on conventional middlemen or illegal online financing providers that are exploitative in nature (Alvinita et al., 2025; Florado et al., 2025; Rahayu, 2024; Septianingsih & Abdullah, 2023). Furthermore, the integration of digital transaction data is a valuable asset for BMT in carrying out a *credit scoring* alternative for MSMEs that have been considered *unbankable* because it does not have physical collateral, so that financial inclusion can be achieved more substantially (D. R. Anwar et al., 2023; Rahayu, 2023).

The third stage, which is the culmination of this transformation, is the establishment of a holistically integrated digital sharia economic ecosystem. At this level, BMT's strategy no longer stands in isolation, but rather conducts strategic collaboration through *Application Programming Interface* (API) with the platform *e-commerce*, *marketplace* halal products, and digital supply chain management systems to support the sustainability of members' businesses (Cahyono et al., 2024; Fauzi & Darussalam, 2022; Nuraeni & Sopiah, 2023; Subhan & Delvianti, 2024). It aims to create a closed economic cycle (*closed-loop economy*) which ensures that capital turnover remains within the member community, strengthens the economic base of the people, and creates collective independence (Ekawati & Kusumaningtias, 2024; Ma'ruf et al., 2022; Mahmudah et al., 2025). BMT transformed from a mere provider of capital to an economic aggregator that facilitated the meeting of *Supply* and *Demand* within its own digital ecosystem.

However, a critical review in the latest literature (2024-2026) emphasizes that the success of this transformation is not determined by hardware sophistication alone, but rather by BMT's ability to maintain its philosophy "*High Tech, High Touch, and High Sharia*" (Fauzi, 2022; Mas'ud, 2022; Wulandari & Pertiwi, 2026). Although the transaction process has been automated, BMT's function as a *da'wah* institution, social companion, and micro business consultant must not be eroded by technological impersonality (Medias et al., 2020; Puspitasari & Hasanah, 2018). Personal interaction remains key to building trust (*Trust*), which is the main foundation of Islamic microfinance. Therefore, consistency in maintaining digital security (*cyber security*) and interface design that is inclusive of all age groups was found to be the main determinant of BMT's resilience success in the face of industrial economic projections 5.0 (Haerudin et al., 2024; Mas'ud, 2022; Rohmah et al., 2026; Septianingsih et al., 2024; Wulandari & Pertiwi, 2026). A successful digital transformation is ultimately one that is able to synergize algorithm efficiency with the glory of Sharia ethics for the continued benefit of members. For more details, see Table 1 below.

Table 1: Typology of Digital Transformation Strategy in BMT

Strategic Stages	Transformation Focus	Key Technology Implementation	Managerial & Strategic Implications	Key References
Stage I: Back-end Transformation	Digitization of Operational Infrastructure	Integrated Cloud-based Core Banking System	Strengthening GCG, cost efficiency (overhead), report transparency, and real-time	H. Maulana & Efriansyah (2025); R. Maulana & Yazid (2025); Haerudin et al.

			Sharia audits by DPS	(2024); Khairi et al. (2025)
Stage II: Front-end Transformation	Application-Based Service Innovation	Mobile BMT, QRIS, PPOB, and Interbank Transfer	Democratizing financial access, breaking the middleman chain, and alternative credit scoring for unbankable customers	Kahfi & Marzuki (2025); Ramaditya et al. (2025); Rohmah et al. (2026); Alvinita et al. (2025); Rahayu (2023)
Stage III: Holistic Ecosystem	Integration of Sharia Economic Ecosystem	Application Programming Interface (API), E-commerce, and Halal Marketplace	Creation of a closed-loop economy, collective independence of the people, and BMT as an economic aggregator (supply and demand)	Cahyono et al. (2024); Fauzi & Darussalam (2022); Nuraeni & Sopiah (2023); Ekawati & Kusumaningtias (2024); Mahmudah et al. (2025)

Accelerating MSME Empowerment Through Digital Ecosystem

The second pillar of the literature synthesis results highlights how the integration of digital technology in Baitul Maal wat Tamwil (BMT) acts as a fundamental catalyst in accelerating the empowerment of Micro, Small, and Medium Enterprises (MSMEs). Key findings from various reputable studies confirm that digitalization is not just an administrative tool, but a strategic instrument that can radically change the cost structure and operational model of MSMEs (D. R. Anwar et al., 2023; Ma'ruf et al., 2022; Ramaditya et al., 2025; Septianingsih et al., 2024). The first and most significant impact is the reduction of information asymmetry and the decentralization of access to capital. In the traditional microfinance model, the cost of information is often a barrier to the efficiency of credit disbursement. However, through digital platforms, BMT can monitor customer transactions in real-time, which allows the process of applying for sharia financing to be shorter, more transparent, and based on factual data (Alvinita et al., 2025; Florado et al., 2025; H. Maulana & Efriansyah, 2025; R. Maulana & Yazid, 2025).

Furthermore, the current literature (2024–2026) emphasizes the role of BMT in providing measurable digital-based non-financial assistance services. BMT has transformed into a modern business incubator for its members through the provision of digital financial management training modules, marketing literacy on social media platforms, and the adoption of an application-based accounting system that makes it easier for MSMEs to compile standard financial statements (Ma'ruf et al., 2022; Mahmudah et al., 2025; Nuraeni & Sopiah, 2023; Subhan & Delvianti, 2024). This creates a deeper financial inclusion impact (deepening financial inclusion), where MSMEs not only get capital injections, but also intellectual capacity building, which is a key asset for business sustainability in the Industry 5.0 era (Rahayu, 2024; Rohman, 2015; Wulandari & Pertiwi, 2026). Theory-based analysis, Resource-Based View

(RBV) shows that digital capabilities transferred from BMT to MSMEs are a source of competitive advantage that is difficult for traditional competitors to imitate (Afina & Cahyono, 2024; Fauzi & Darussalam, 2022). The next strategic impact that emerges in the literature is the integration of digital supply chains and the expansion of market penetration. BMT, which has built a digital ecosystem, is able to aggregate its fostered MSME products into marketplace sharia or community business networks supported by digital payment systems such as QRIS (Afina & Cahyono, 2024; Fauzi & Darussalam, 2022; Mahmudah et al., 2025; Suseno, 2020). By utilizing recorded digital transaction data, BMT can implement an alternative credit scoring to assess the eligibility of customers who have been considered to be unbankable due to the absence of physical collateral (collateral). This automatically reduces transaction costs and the risk of moral hazard, which has been the main obstacle for Islamic microfinance (D. R. Anwar et al., 2023; Fatriansyah et al., 2023; Saifurrahman & Kassim, 2020). In addition, digitalization has an inclusive social impact for women entrepreneurs (gender-based MSMEs), who, according to literature data, have experienced a significant increase in economic independence due to the ease of access to services from the home environment (Rahayu, 2023; Septianingsih et al., 2024; Septianingsih & Abdullah, 2023).

However, critical reviews note that this acceleration should be accompanied by a strong risk mitigation strategy. Technological unpreparedness on the customer side can trigger new vulnerabilities, such as failure to adapt to cyber threats that can damage the financial integrity of MSMEs (Haerudin et al., 2024; Septianingsih et al., 2024). The literature suggests that the ideal digital empowerment model is one that synergizes financial intervention with continuous technological ethics education (Puspitasari & Hasanah, 2018; Rohmah et al., 2026; Wulandari & Pertiwi, 2026). BMT is expected to act as an enabler that not only distributes funds but also builds a digital ecosystem that is in line with human values and Sharia justice (Ekawati & Kusumaningtias, 2024; Garbo, 2025; Imaroh & Tanjung, n.d.). Holistically, digitizing the Tamwil BMT has been empirically proven to increase business turnover, expand market reach, and strengthen the capital structure of MSMEs towards a vision of resilient and sustainable national economic independence (D. R. Anwar et al., 2023; Cahyono et al., 2024; Florado et al., 2025; Ma'ruf et al., 2022; H. Maulana & Efriansyah, 2025; Ramaditya et al., 2025; Septianingsih et al., 2024).

Optimizing Maal Functions: Digitizing ZISWAF for Productive Capital

One of the most fundamental findings in this systematic review is the radical repositioning of functions Grind in BMT, which has experienced significant acceleration through the adoption of financial technology. Recent literature confirms that BMT's true strength in empowering MSMEs does not only lie in its commercial function (Tamwil), but also in the ability to manage Islamic philanthropic instruments of Zakat, Infaq, Alms, and Waqf (ZISWAF) as an instrument of social protection as well as inclusive capital that is non-profit (Albanjari, 2023; Garbo, 2025; Kusuma & Azis, 2025; Septianingsih et al., 2024). The digitalization of Islamic philanthropy has transformed social fundraising methods from traditional, passive, local ways to a proactive, transparent, and globally accountable digital platform (Haerudin et al., 2024; Imaroh & Tanjung, n.d.; Khairi et al., 2025).

Empirically, the use of digital payment channels such as QRIS, integrated mobile applications, and platforms for sharia has exponentially increased the volume of social fund-raising by reducing barriers to entry for small donors (Garbo, 2025; Kusuma & Azis, 2025; Ramaditya et al., 2025). However, the most crucial innovation lies in the transformation of social funds into productive capital through the Qardhul Hasan digital. In this scheme, ZISWAF funds are

distributed to micro business actors who are in the category of "mustahik" (zakat recipients) as working capital without interest or profit sharing ((D. R. Anwar et al., 2023; Ekawati & Kusumaningtias, 2024; Garbo, 2025; Khairi et al., 2025)). Literacy shows that the use of technology to monitor the use of these funds in a positive way, in real-time able to minimize the risk of misuse of funds (moral hazard) and ensure that the capital is truly allocated for productive activities that are able to create economic independence for customers (Mahmudah et al., 2025; Rohmah et al., 2026; Wulandari & Pertiwi, 2026).

In addition, the Digital Money Waqf instrument has emerged as a dominant trend in the literature for the 2024-2026 period as a long-term funding solution for the development of MSME infrastructure (Albanjari, 2023; Garbo, 2025; Subhan & Delvianti, 2024). With digitalization, money waqf certificates can now be accessed at a very affordable nominal through the Micro-Waqf platform, where the endowment fund is productively managed by BMT to finance the risky but potential MSME ecosystem (Kusuma & Azis, 2025; H. Maulana & Efriansyah, 2025). This creates a synergy between social justice and inclusive economic growth; The surplus from waqf management can be reallocated to empowerment programs, cross-subsidized financing, and social security assistance for members who experience business failures due to market shocks (Imaroh & Tanjung, n.d.; Khairi et al., 2025; Rahayu, 2024; Subhan & Delvianti, 2024)

However, the integration of the Grind Digitally, this demands much stricter governance standards than commercial functions in order to maintain public trust. The literature provides a critical note on the importance of digital asset segregation (segregation of digital assets) between social funds and commercial funds in BMT's information technology architecture to avoid the risk of sharia non-compliance (sharia non-compliance risk) (Haerudin et al., 2024; Septianingsih et al., 2024; Wafa et al., 2023)). Use of technology blockchain or digital ledger (distributed ledger) proposed in some recent studies as a futuristic solution to guarantee absolute transparency for donors (muzakki and Wakif) on their fund flows end-to-end (Septianingsih & Abdullah, 2023). Theoretically, optimization of functions Grind digital is the embodiment of the concept of Maqashid Syariah in the Hifdz al-Maal (property protection through distribution) and Hifdz al-Nasl (protection of generational economic sustainability), where technology plays the role of a mediator to realize falah (welfare of the world-hereafter) (Ekawati & Kusumaningtias, 2024; Ma'ruf et al., 2022; Rohmah et al., 2026; Wulandari & Pertiwi, 2026)

Ultimately, digitizing the Grind gives BMT a unique competitive advantage that neither conventional financial institutions nor providers have Fintech pure. The ability to synergize "virtue capital" with advanced technology for the most vulnerable micro-enterprises is the most effective empowerment strategy in alleviating systemic poverty and building community-based economic resilience in the era of digital disruption (Albanjari, 2023; D. R. Anwar et al., 2023; Cahyono et al., 2024; Fatriansyah et al., 2023; Florado et al., 2025; Garbo, 2025; R. Maulana & Adha, 2025; R. Maulana & Yazid, 2025; Rahayu, 2024; Ramaditya et al., 2025). To understand how the variables of digitalization interact with Islamic philanthropic instruments in fostering economic self-reliance, the following conceptual framework is proposed:

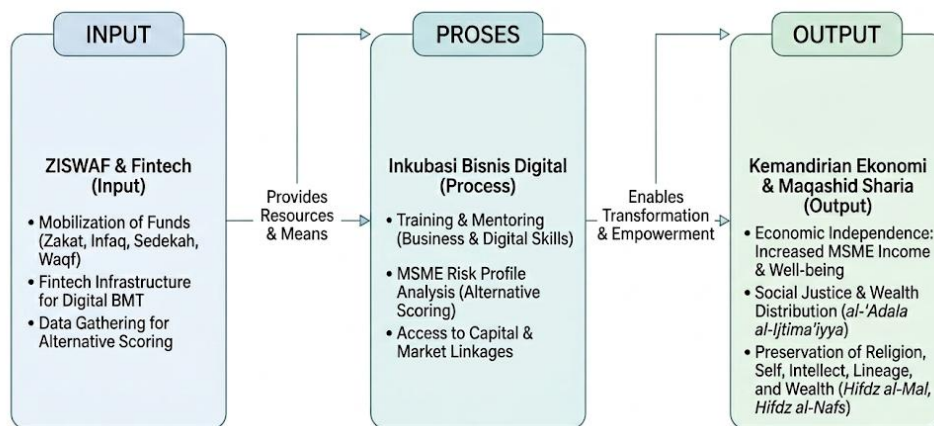


Figure 1. Conceptual Model of ZISWAF-Fintech Integration in the Empowerment of MSMEs Based on Maqashid Syariah.

Cyber Risk Mitigation And Digital Literacy Challenges

While technological acceleration offers transformative opportunities for Baitul Maal wat Tamwil (BMT), this systematic literature identifies the "dark side" of digitalization that has the potential to pose an existential threat to the sustainability of Islamic microfinance institutions. The fundamental obstacle that has consistently arisen in various studies lies not in the limitations of hardware, but in the phenomenon of the digital literacy gap (digital divide) that are massive, both vertically and horizontally (Puspitasari & Hasanah, 2018; Rohmah et al., 2026; Septianingsih et al., 2024; Wafa et al., 2023). The low technological skills of MSME actors in rural areas cause the financial inclusion features provided by BMT to be utilized to the fullest, even triggering psychological resistance to system changes that are considered too complex and less personal (Rahayu, 2023; Septianingsih & Abdullah, 2023; Wulandari & Pertiwi, 2026).

The second challenge that dominates the literature discourse for the period 2024-2026 is the escalation of cybersecurity risks (cybersecurity risk), which is asymmetrical. Along with the migration of customer data to the ecosystem cloud, BMT now faces a wider spectrum of threats, ranging from social engineering attacks, ransomware, to structured data leaks (Haerudin et al., 2024; Marhum & Masdul, 2024; Septianingsih et al., 2024). The literature provides a stark warning that a single cybersecurity incident not only impacts financial losses, but can fatally undermine trust (Trust) a member of a social-relational asset that is the main foundation of BMT's existence (Masud & Syamsurrijal, 2024; Septianingsih & Abdullah, 2023). Therefore, investment in technology infrastructure must be accompanied by strengthening information security governance based on international standards, such as ISO 27001, which is adapted to the context of microfinance institutions (Wafa et al., 2023).

In addition to technical aspects, regulatory challenges and operational standardization are crucial factors that determine the success of transformation. The majority of BMTs are still operating in the "gray" area of digital regulation, where there are no standard standards regarding personal data protection and electronic transaction dispute resolution mechanisms specifically for the sharia sector (Fatriansyah et al., 2023; Haerudin et al., 2024; Septianingsih et al., 2024). This legal uncertainty creates a compliance risk (compliance risk) is high, especially when BMT collaborates with third parties through digital APIs (R. Maulana & Yazid, 2025; Ramaditya et al., 2025; Subhan & Delvianti, 2024). Standardization of technology

interoperable is an urgent need so that BMT does not get trapped in long-term operational cost inefficiencies (H. Maulana & Efriansyah, 2025; R. Maulana & Yazid, 2025)

As a comprehensive mitigation strategy, the results of the synthesis agreed on the need to adopt the "Agile Sharia Digital Governance" model. This model requires BMT to focus not only on software improvement, but also on sustainable digital financial literacy education programs for MSMEs and capacity building digital mindset for internal human resources (Ma'ruf et al., 2022; Mahmudah et al., 2025; Nuraeni & Sopiah, 2023). Theoretically, this risk mitigation is in line with the fiqh principles of "Sadd ad-Dzarai" (closing the gap to damage) and "Dar'ul Mafasid Muqaddamun 'ala Jalbil Mashalih" (preventing damage should take precedence over benefiting) (Ekawati & Kusumaningtias, 2024; Rohmah et al., 2026). In the digital context, this means that BMT is obliged to ensure data security and algorithm fairness before pursuing massive market expansion (Garbo, 2025). BMT's resilience in the industrial era 5.0 will ultimately depend on its ability to synergize technological sophistication with managerial integrity that is oriented towards the benefit of the people and the protection of customer rights holistically (Afina & Cahyono, 2024; D. R. Anwar et al., 2023; Florado et al., 2025; Haerudin et al., 2024; Mas'ud, 2022; Wulandari & Pertiwi, 2026).

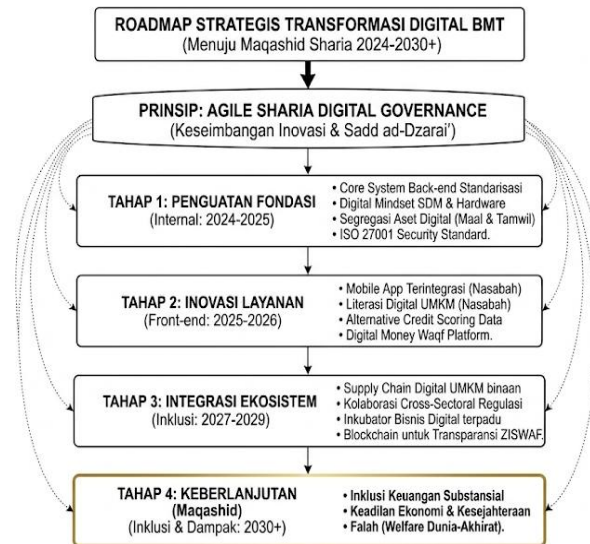
CONCLUSION

This study concludes that digital transformation in Baitul Maal wat Tamwil (BMT) is the main determinant for the resilience and sustainability of MSME empowerment in the digital economy era. Through a systematic review of reputable literature for the 2019-2026 period, it was found that BMT's digitalization strategy moves evolutionarily from strengthening operational infrastructure (back-end) to application service innovation (front-end), to culminating in the formation of an integrated sharia economic ecosystem. The synergy between financial technology and the Tamwil function has been empirically proven to be able to reduce information asymmetry, accelerate access to capital for unbankable groups, and increase the managerial capacity of MSMEs through measurable digital assistance, thereby creating a more substantial financial inclusion impact.

Furthermore, optimizing the function of Maal through the digitization of ZISWAF instruments is a strategic differentiator (unique value proposition) of BMT compared to conventional financial institutions. The transformation of social funds into productive capital through the Qardhul Hasan scheme and digital Money Waqf has created an inclusive economic safety net system for the most vulnerable micro business actors. However, the effectiveness of this transformation is highly dependent on BMT's ability to mitigate cyber risks and reduce the digital literacy gap of customers. The adoption of the Agile Sharia Governance principle that balances the sophistication of algorithms with the rules of Sadd ad-Dzarai (risk prevention) is key in maintaining the integrity of institutions and member trust in the midst of industrial disruption 5.0.

As a policy implication, this study formulates a strategic roadmap that emphasizes the need for standardization of Islamic microfinance digitalization regulations and cross-sectoral collaboration between financial authorities, technology providers, and BMT associations. The main recommendation for BMT managers is to not only focus on hardware investment, but also consistently strengthen the digital mindset of human resources and technology education for fostered MSME members. In the future, the integration of future technologies such as blockchain for transparency of social funds and the use of artificial intelligence in alternative credit scoring is expected to strengthen BMT's position as the main pillar in realizing economic justice and sustainable people's welfare in line with Maqashid Sharia. As a practical

contribution, this study outlines a strategic roadmap for the digital transformation of BMTs, divided into four main phases, as shown in Figure 1.



Gambar 1. Roadmap Strategis Transformasi Digital BMT Berbasis Maqashid Sharia.

SUGGESTIONS

Based on the research findings and risk analysis presented, the author formulates the following strategic recommendations: For Baitul Maal wat Tamwil (BMT) managers, it is recommended that they immediately accelerate human resource capacity through digital mindset training and data security certification, given that technology is only an instrument whose effectiveness depends on the competence of its operators. In addition, BMT needs to strengthen the synergy between the Maal and Tamwil units in an integrated application ecosystem to make it easier for members to access “benevolent capital” (Qardhul Hasan) and commercial financing simultaneously, while maintaining the separation of accountable assets.

For the Government and Regulators (Financial Services Authority & Ministry of Cooperatives and SMEs), the government needs to formulate specific regulations governing the standardization of financial technology for the Islamic microfinance sector, particularly regarding personal data protection protocols and digital dispute resolution mechanisms. In addition, incentives in the form of technology infrastructure subsidies or reduced Credit Bureau access fees are needed for BMTs so that they can implement alternative credit scoring more efficiently in serving MSMEs in disadvantaged, frontier, and outermost (3T) areas. For Future Researchers Given the limitations of this study, which is based on a systematic review of the literature, future researchers are advised to conduct quantitative empirical studies using the Stru method.

BIBLIOGRAPHY

- Afina, K. N., & Cahyono, E. (2024). Peran Moderasi Kinerja Amil Pada Pengaruh Zakat Produktif Terhadap Kesejahteraan Mustahik BAZNAS Kabupaten Demak. *ZISWAF ASFA JOURNAL*. <https://jurnalasfa.org/index.php/asfaziswaf/article/view/18>
- Albanjari, F. R. (2023). Social financial inclusion of digital based and cooperation to increase competitiveness in Baitul Maal Wat Tamwil. *International Journal of Islamic Thought and*

- <https://journal.staitaruna.ac.id/index.php/ijith/article/view/102>
- Alvinita, A. K., Amalia, F. N., & Fairus, S. (2025). The Role Of Baitul Mal Wat Tamwil In Community Economic Empowerment: A Case Study Of Bmt Al Muthi'in Yogyakarta. *Nusantara* <http://businessandfinanceanalyst.com/index.php/NJCR/article/view/446>
- Anwar, D. R., Suciarti, R., & Utami, S. D. (2023). Optimalisasi pemberdayaan ekonomi masyarakat berbasis filantropi Islam pada Wahdah Inspirasi Zakat (WIZ) di Makassar. *Jurnal Mirai Management*.
- Anwar, M. K., Ridwan, A. A., & Laili, W. N. R. (2023). The role of Baitul Maal Wat Tamwil in empowering msme in Indonesia: A Study of Indonesian Islamic microfinance institutions. ... *Review: Int. J. Prof. Bus. Rev* ... <https://dialnet.unirioja.es/servlet/articulo?codigo=8956098>
- Cahyono, H., Sutantri, S., & Mala, I. K. (2024). Pengembangan model bisnis inklusif berbasis digital untuk pemberdayaan ekonomi masyarakat melalui baitul maal wal tamwil (bmt). *Innovative: Journal Of Social* <http://j-innovative.org/index.php/Innovative/article/view/7573>
- Ekawati, D., & Kusumaningtias, R. (2024). The role of baitul maal wat tamwil (BMT) in economic empowerment efforts in Indonesia. ... *on Accounting and Finance*. <https://journal.uui.ac.id/inCAF/article/view/32717>
- Fajri, A., Shukor, S. A., & Wibowo, K. A. (2023). The Future Growth for Islamic Microfinance in Indonesia: Baitul Maal Wat Tamwil Domains. ... *Review: Int. J. Prof. Bus. Rev*. <https://dialnet.unirioja.es/servlet/articulo?codigo=9060755>
- Fatriansyah, A. I. A., Junaedi, W., Fadlihi, A., & ... (2023). Baitul Mal Wat Tamwil (BMT) Strategi in the Era of Economic Disruption. *Journal of Finance* <https://risetekonomi.com/jurnal/index.php/feb/article/view/80>
- Fauzi, M. (2022). *Upaya Baitul Maal Wa Tamwil Bertahan Di Masa Pandemi Covid-19*. academia.edu. https://www.academia.edu/download/87890289/5659_Article_Text_24971_1_10_20220226_3_.pdf
- Fauzi, M., & Darussalam, A. (2022). Digitalization Of Baitul Maal Wa Tamwil: How Does Survival In Covid-19 Pandemic? *J-EBIS (Jurnal Ekonomi Dan* <http://journal.iainlangsa.ac.id/index.php/ebis/article/view/3644>
- Florado, B., Saputri, R., & Azwari, P. C. (2025). The Role of Baitul Maal Wa Tamwil in Enhancing MSME Empowerment in Lubuklinggau: A Case Study of BMT Al-Azhaar. *International Journal of* <https://www.journal.payungi.org/index.php/ijcep/article/view/79>
- Garbo, A. (2025). Islamic Philanthropy Paradigm in Islamic Microfinance: A Literature-Based Analysis of the Maal Function in Baitul Maal Wat Tamwil. *Jurnal Ilmiah Ekonomi Islam*. <https://jurnal.stie-aas.ac.id/index.php/jei/article/view/17293>
- Haerudin, H., Fajri, A., Shukor, S. A., & Wibowo, K. A. (2024). *Similarity THE FUTURE GROWTH FOR ISLAMIC MICROFINANCE IN INDONESIA: BAITUL MAAL WAT TAMWIL DOMAINS*. repository.unimus.ac.id. http://repository.unimus.ac.id/7835/1/1632_JPB_1.pdf
- Imaroh, R. N., & Tanjung, H. (n.d.). Determinants of the Weak Role of Baitul Maal in Baitul Maal Wa Tamwil (BMT) in Indonesia. *The Proceeding*. [http://repository.radenfatah.ac.id/23397/1/the International Conference_Determination of Firm Value with Financial.pdf#page=266](http://repository.radenfatah.ac.id/23397/1/the%20International%20Conference_Determination%20of%20Firm%20Value%20with%20Financial.pdf#page=266)
- Imro'ah, W., Rahmawati, Z. M. B., & ... (2024). The influence of product innovation and service innovation on interest in BMT Sarana Wiraswasta Muslim through trust as an intervening variable. *Asian Journal of* <http://repository.uin-malang.ac.id/20482/>

- Kahfi, A. H., & Marzuki, E. (2025). The Qur'an-Based Operational Model of Baitul Maal wa Tamwil (BMT) in Empowering the Poor. *Musabab: Journal of Islamic Law and ...* <http://journal.shafiyah.org/index.php/musabab/article/view/8>
- Khairi, A., Abdullah, F. D., & ... (2025). Mosque-Based Islamic Financial Innovation To Improve The Welfare Of Village Communities. ... *Djati Conference Series*. <http://conferences.uinsgd.ac.id/index.php/gdcs/article/view/3088>
- Kusuma, M. R., & Azis, N. (2025). Design and Implementation of the BAZNAS Microfinance Desa Application for Empowering Mustahiq Micro Enterprises. *Journal of Innovation and* <http://www.journal.itqanpreneurs.com/index.php/jics/article/view/138>
- Ma'ruf, A., Azizah, E. N., & Sari, J. A. (2022). How do Baitul Maal Wat Tamwil empower micro, small and medium enterprises amidst COVID-19 pandemic? a case of Indonesia. ... (*Journal of Islamic Finance ...* <https://ejournal.uinsaid.ac.id/jifa/article/view/5357>
- Mahmudah, S., AF, M. S. F., & Maricar, R. (2025). Pesantren-Based Entrepreneurial Ecosystem: Contribution of Baitul Maal Wat Tamwil. *Santri: Journal of Pesantren ...* <https://journal.ipmafa.ac.id/index.php/santri/article/view/1691>
- Marhum, A. M. A., & Masdul, M. R. (2024). Pendayagunaan Pendayagunaan Zakat dalam Meningkatkan Ekonomi Mikro untuk Kesejahteraan Ummat di Desa Padende Kecamatan Marawola kabupaten sigi *Iqra: Jurnal Ilmu ...* <https://jurnal.unismuhpalu.ac.id/index.php/IQRA/article/view/4587>
- Mas'ud, R. (2022). The Resilience of Baitul Maal Watamwil (BMT) Amid Disruption and COVID-19 Pandemic: Evidence from Lombok, West Nusa Tenggara. *West Nusa Tenggara*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4196853
- Masud, R., & Syamsurrijal, M. (2024). Strategy And Sustainability Of Baitul Maal Wat Tamwil In The Disruption Era: Experience From Lombok West Nusa Tenggara. ... *of Islamic Management and Finance ...* <https://jati.um.edu.my/index.php/OJIMF/article/view/56119>
- Maulana, H., & Efriansyah, E. (2025). Implementation of Baitul Maal Wat Tamkwil (BMT) in Efforts to Get Economic Growth in Indonesia. *Journal of Accounting, Finance, and ...* <https://ojs.proaksara.com/index.php/jaffa/article/view/71>
- Maulana, R., & Adha, M. A. (2025). Strategi Komunikasi Pemasaran Bank Syariah Indonesia KCP Bandung Citarum dalam Meningkatkan Loyalitas Nasabah. *Musyarakah: Journal of Sharia Economic ...* <http://journal.umpo.ac.id/index.php/MUSYROKAH/article/view/11311>
- Maulana, R., & Yazid, M. (2025). ... pada BMT dalam Meningkatkan Efisiensi Layanan Keuangan Syariah: Implementation of Digitalization in BMT to Increase the Efficiency of Sharia Financial Services. *TIJARAH: Jurnal Ekonomi, Manajemen ...* <https://litera-academica.com/ojs/tijarah/article/view/232>
- Medias, F., Pratiwi, E. K., & Janah, N. (2020). The Impacts of Baitul Maal wa Tamwil Empowerment Program to MSMEs Development. *Inferensi Jurnal Penelitian Sosial ...* <https://www.academia.edu/download/68186508/pdf.pdf>
- Nuraeni, N., & Sopiah, E. (2023). The Role of Baitul Maal Wa Tamwil in Encouraging MSMEs in Sukabumi District (Field Study at BMT Ibadurrahman Sukabumi City). *Al-Muamalat*. <https://www.neliti.com/publications/565412/the-role-of-baitul-maal-wa-tamwil-in-encouraging-msmes-in-sukabumi-district-fiel>
- Puspitasari, D. C., & Hasanah, L. L. N. El. (2018). The Innovative Model of Community Empowerment (Case Study: Baitul Maal Wat Tamwil in Jogjakarta and East Java). *Proceeding 6th Southeast Asia ...* [https://dspace.uui.ac.id/bitstream/handle/123456789/8277/Full Proceeding_SEAIIPC_2018_1605_7.pdf?sequence=2%5C&isAllowed=y#page=187](https://dspace.uui.ac.id/bitstream/handle/123456789/8277/Full_Proceeding_SEAIIPC_2018_1605_7.pdf?sequence=2%5C&isAllowed=y#page=187)

- Rahayu, N. S. (2023). Between Benefits and Dependency: Evidences of Women's Empowerment Through Baitul Maal Wat Tamwil (BMT) in Indonesia. *Journal of Economic Cooperation* & ...
<https://search.ebscohost.com/login.aspx?direct=true%5C&profile=ehost%5C&scope=sit e%5C&authtype=crawler%5C&jrnl=13087800%5C&AN=173379226%5C&h=olITs1jPF MRNQ6gFwlvsYNIIsqk04PTERPSREonO2VnrnP0DUwjsMxcTDXdROubNUd3ZXEhES RKWqTU8xVVseVA%3D%3D%5C&crl=c>
- Rahayu, N. S. (2024). Bridging the Financial Gap: Baitul Maal Wat Tamwil (BMT) as A Medium for Women's Empowerment and Financial Inclusion. ... *ON ISLAMIC ECONOMICS AND BUSINESS (ICIEB)* <https://elibrary.ru/item.asp?id=81361540>
- Ramaditya, M., Lusiana, D., Syah, D. O., & ... (2025). Digitalization Of Microfinance Institutions As A Solution For Community Economic Empowerment: Case Study Of BMD Syariah. ... *Reviu Akuntansi Dan* ...
<https://ejournal.umm.ac.id/Index.Php/Jrak/Article/Download/36988/16263>
- Rohmah, K. N., Ariani, N., & Ramadhani, S. A. (2026). KSPPS BMT Damar's Contribution to Increasing Financial Inclusion and Community Economic Empowerment. *International Journal of Sharia* <http://ijsei.org/index.php/ijsei/article/view/4>
- Rohman, M. (2015). Problematika Kurikulum Pendidikan Islam. *Jurnal Madaniyah*.
<https://www.academia.edu/download/82413295/31-62-1-SM.pdf>
- Saifurrahman, A., & Kassim, S. (2020). An analysis on the changing operational nature of Baitul Maal institutions in Indonesia. ... *Conference on Islamic Finance (7th* ...
<https://www.scitepress.org/Papers/2019/101158/101158.pdf>
- Septianingsih, R., & Abdullah, A. (2023). Awareness of Islamic Consumers Baitul Maal Wat Tamwil (BMT) in Riau. ... *Technology and Innovation in the Financial* ...
https://doi.org/10.1007/978-3-031-27296-7_53
- Septianingsih, R., Abdullah, A., & Salleh, M. Z. M. (2024). A Systematic Review: Challenge of Islamic Microfinance Baitul Maal Wat Tamwil in Indonesia. *Islamic Finance: New Trends in*
https://doi.org/10.1007/978-3-031-48770-5_3
- Subhan, M., & Delvianti, S. (2024). The Role Of Baitul Mal Wa Tamwil (Bmt) In Economic Empowerment Of The People. ... *of Aceh International Seminar on Zakat* ...
https://www.researchgate.net/profile/Sintia-Delvianti/publication/392023047_THE_ROLE_OF_BAITUL_MAL_WA_TAMWIL_BMT_I N_ECONOMIC_EMPOWERMENT_OF_THE_PEOPLE/links/6830bc1d8a76251f22e62872/THE-ROLE-OF-BAITUL-MAL-WA-TAMWIL-BMT-IN-ECONOMIC-EMPOWERMENT-OF-THE-PEOPL
- Suseno, P. (2020). *Baitul Maal Wat Tamwil (BMT): A Faith and Community-based Microfinance*. academia.edu.
https://www.academia.edu/download/82608453/1589251860-Islamic_20Business_20Case_BMT.pdf
- Wafa, A., Sahri, M., & Fajrin, M. (2023). Landasan Pengembangan Kurikulum Pendidikan Islam: Landasan Filosofis, Sosiologis, dan Teknologis. *Al-Allam*.
<https://ejournal.kopertais4.or.id/madura/index.php/alallam/article/view/7194>
- Wulandari, S., & Pertiwi, F. A. (2026). Analisis Konseptual Peran Baitul Maal Wat Tamwil (BMT dalam Mengembangkan Ekonomi Inklusif. ...: *Jurnal Ekonomi Syari'ah & Bisnis*
<https://ejournal.staimta.ac.id/index.php/eksyar/article/view/844>