MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

DEVELOPMENT MODEL FOR THE DEVELOPMENT OF BUSINESS INCUBATOR PROGRAMS WITH A TECHNOLOGY ACCEPTANCE MODEL (TAM) APPROACH AT THE COOPERATIVES AND SMEs OFFICE OF NORTH SUMATRA PROVINCE

Raja Salsabila Pasha[1]
Universitas Sumatera Utara, Medan, Indonesia
rajasalsabilaa@gmail.com

Harmein Nasution[2]
Universitas Sumatera Utara, Medan, Indonesia
harmein_nasution@yahoo.com

Evawany Yunita Aritonang[3]
Universitas Sumatera Utara, Medan, Indonesia
evawany.yunita@usu.ac.id

Abstract

Digital transformation represents a major strategic challenge for Micro, Small, and Medium Enterprises (MSMEs), particularly in terms of technology readiness and acceptance. Although local governments have implemented various business development and incubation programs, their effectiveness remains uneven. This study aims to develop a business incubator program model based on the Technology Acceptance Model (TAM) at the Cooperatives and MSMEs Office of North Sumatra Province. The TAM framework is applied to examine technology adoption behavior through two core constructs, namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which are integrated with incubation and capital development programs. This research employs a qualitative approach using a case study method. Data were collected through in-depth interviews with ten MSME participants involved in the 2024 business incubator program. The findings indicate that MSMEs perceive digital technology as beneficial for improving operational efficiency and expanding market access. However, significant challenges remain, particularly in the adoption of production technology and access to formal financing. Although the incubation program has contributed to enhancing digital literacy, it has not been fully responsive to variations in participants' digital readiness. In addition, capital development initiatives remain largely informational and lack sustained technical assistance. Based on these findings, this study proposes a TAM-based

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

business incubator development model that positions perceived usefulness and ease of use as fundamental determinants of technology acceptance, reinforced by institutional support and a cross-agency coaching ecosystem. This model is expected to enhance the effectiveness of MSME development programs in a more inclusive, adaptive, and sustainable manner.

Keywords: MSMEs, Business Incubators, Technology Acceptance Model, Coaching, Digitalization

INTRODUCTION

Digital transformation has become a key factor in the development of modern business, characterized by changes in consumer behavior and the increasing use of technology in operational and marketing processes. In Indonesia, the value of the digital economy reached USD 82 billion in 2023 and is projected to increase to USD 109 billion by 2025, making Indonesia the largest digital market in Southeast Asia (Temasek, Bain, & Google, 2023). This condition requires business actors, including MSMEs, to be able to adapt through technology adoption to remain competitive (World Economic Forum, 2023).

MSMEs have a strategic role in the national economy with a contribution of more than 60% to GDP and the absorption of more than 97% of the national workforce (Ministry of Cooperatives and SMEs of the Republic of Indonesia, 2023). However, low technology adoption and limited managerial capacity are still the main obstacles in facing competition in the digital era. The government targets to accelerate the digitalization of MSMEs through various coaching programs, including technology-based business incubators (Kemenkop UKM RI, 2023).

Business incubators function as an instrument to strengthen the capacity of MSMEs through structured mentoring, training, and network facilitation. In North Sumatra Province, the Cooperatives and MSMEs Office organizes an incubation program based on a digital platform that includes pre-incubation stages, bootcamps, and demo days. Although the program has been running systematically, the performance achievements of MSMEs after incubation show uneven results, especially in the aspects of digitalization and business strategy development (North Sumatra SME Diskop, 2024).

This inequality indicates that the effectiveness of incubation is not only determined by the training materials, but also by the level of acceptance of MSMEs to the technology used. The coaching approach that is still uniform has not been able to accommodate the differences in participants' digital readiness. Therefore, an

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

evaluation framework is needed that is able to map the perception of MSME actors on the benefits and convenience of technology.

The Technology Acceptance Model (TAM) explains that technology acceptance is influenced by perceived usefulness and perceived ease of use, which shape attitudes and intentions of use (Davis, 1989; Venkatesh & Davis, 2000). A number of studies show that TAM effectively explains the adoption of MSME technology in Indonesia (Pusfitaningrum et al., 2022; Fitrianisa et al., 2023; Pratita et al., 2024). However, the implementation of TAM in the institutional context of local government business incubators is still limited.

Based on these gaps, this study aims to develop a model for fostering a business incubator program based on the Technology Acceptance Model (TAM) at the Cooperatives and MSMEs Office of North Sumatra Province, in order to increase the effectiveness of MSME coaching more adaptively and measurably.

LITERATURE REVIEW

Micro, Small, and Medium Enterprises (MSMEs)

MSMEs are productive economic business activities that stand alone and have a strategic role in the national economy as regulated in Law Number 20 of 2008. MSMEs contribute significantly to job creation, poverty reduction, and regional economic strengthening. In North Sumatra Province, MSMEs are the foundation of people-based economic development by contributing to increasing community income and local economic growth (Sembiring, Pane, & Lubis, 2023).

However, MSMEs still face various structural challenges, such as limited access to financing, inflationary pressures, rising raw material prices, supply chain disruptions, and low literacy and adoption of digital technology (Ginting et al., 2025). This condition requires an active role of local governments in providing targeted and adaptive guidance to changes in the business environment.

MSME Development and Development

MSME development is a systematic mentoring process that aims to increase the managerial, technical, and competitive capacity of business actors (Florita, 2018). The development of MSMEs is reflected in an increase in assets, turnover, product innovation, and labor absorption (Rustandi, 2020). The main components of coaching include technical and managerial training, ongoing mentoring, facilitation of access to capital, as well as digitalization and business promotion support.

The North Sumatra Provincial Cooperatives and MSMEs Office plays a key role as a key actor in fostering MSMEs through increasing the capacity of business actors, facilitating licensing, assisting access to financing, and monitoring and evaluation of programs (Permenkop UKM RI No. 2 of 2023). In addition to local governments, SOEs

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

also contribute through the provision of capital, training, opening market access, and digital transformation of MSMEs through various partnerships and CSR programs.

MSME Coaching Model

Various models of MSME development have been developed, including the Triple Helix, Pentahelix model, MSME clustering, business incubation, and MSME digitalization. The incubation model is seen as effective because it provides a structured coaching environment through training, mentoring, and facilitation of market access and financing (Susilo, 2019). However, most of the coaching models are still general and have not fully considered the differences in the technological readiness of MSME actors.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis (1989) to explain technology adoption behavior based on two main constructs, namely perceived usefulness and perceived ease of use. Both perceptions affect users' attitudes, intentions, and actual behaviors in utilizing technology (Venkatesh & Davis, 2000). In the context of MSMEs, TAM is relevant to explain the variation in the level of digital technology adoption. The main dimensions of TAM include perceived usefulness, perceived ease of use, attitude toward using, and behavioral intention to use (Davis & Granic, 2024). Various studies show that TAM is effective in explaining the adoption of MSME technology, but its application within the institutional framework of local government business incubators is still limited.

Business Incubator

A business incubator is a structured coaching program that aims to accelerate growth and reduce the rate of business failure through the pre-incubation, core incubation, and post-incubation stages. Incubators provide managerial and technical assistance, access to financing, and strengthening business networks (Sitorus et al., 2023).

The existence of business incubators in Indonesia is strengthened through regulations such as Presidential Regulation Number 27 of 2013, Government Regulation Number 7 of 2021, and Permenkop UKM Number 14 of 2023 concerning NSPK on the Implementation of Business Incubation. This regulation emphasizes the importance of MSME-based incubation, technology integration, and measurable success indicators. Thus, the integration of the Technology Acceptance Model (TAM) in the business incubator program is a strategic approach to map the digital readiness of MSMEs and design a more adaptive, measurable, and sustainable coaching model.

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

RESEARCH METHOD

This study uses a descriptive qualitative approach to analyze the process of fostering MSMEs in the business incubator program of the North Sumatra Provincial Cooperatives and SMEs Office, as well as the acceptance of MSME actors into digital technology. This approach was chosen because it allows for a deep understanding of the experiences, perceptions, and responses of MSMEs contextually (Sugiyono, 2019). The research was carried out in Medan City in June-August 2025, with the research subjects in the form of MSME actors participating in the North Sumatra Business Incubator and Cooperative Platform. Informants were determined using purposive sampling, with criteria for MSMEs that followed all stages of incubation. A total of 10 MSMEs were selected as research informants by considering the principle of data saturation and business cluster representation.

Data collection was carried out through in-depth interviews, participatory observations, and documentation. The interview was used to explore the perception of MSMEs regarding the benefits, convenience, and sustainability of the use of technology. Observations were carried out to observe the practice of using technology in business activities, while documentation was used as supporting data for the incubation program. Data analysis uses descriptive-inductive thematic analysis through the stages of transcription, reduction, coding, and theme withdrawal based on the Technology Acceptance Model (TAM) framework, especially perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh & Davis, 2000). The validity of the data was tested through triangulation of sources and methods, as well as member checks to ensure the credibility of the findings (Sugiyono, 2019).

RESULTS AND DISCUSSION

Respondent Characteristics

This study involved 10 MSMEs participating in the business incubator program of the North Sumatra Provincial Cooperatives and SMEs Office, who were selected by purposive sampling. Respondents came from various business clusters, including food and beverages, agriculture and post-harvest processing, crafts, and wastra. This diversity reflects the heterogeneity of fostered MSMEs and allows for a more comprehensive analysis of technology acceptance across business sectors.

Perceived Usefulness of Technology

The results of the interviews show that most respondents consider digital technology useful in increasing marketing efficiency, expanding market reach, and facilitating interaction with consumers. MSMEs that have actively used social media and marketplaces (such as Bos Teri and PT Mushiro Jaya Group) have felt a significant

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

impact in the form of increased sales and product visibility. This finding is in line with the concept of perceived usefulness in TAM which emphasizes that technology will be accepted when it is felt to provide real benefits to business performance (Davis, 1989). However, some MSMEs in the early stages of digitalization (such as Batik Mardiyah and Kratiwi.id) still feel limited technological benefits. This is due to the lack of optimal digital marketing strategies and low intensity of platform use.

Perceived Ease of Use

Most respondents stated that digital technology is relatively easy to learn and use, especially mobile phone-based social media. MSMEs that have better digital literacy tend to be more active and consistent in utilizing technology. On the other hand, MSMEs with limited technical skills and human resources need advanced assistance so that technology can be used optimally. These findings reinforce the view that ease of use is an important factor in shaping positive attitudes towards technology and driving sustainable adoption (Venkatesh & Davis, 2000).

Evaluation of the MSME Incubation Program

The incubation program is considered to provide benefits in increasing business insights, understanding business models, and awareness of the importance of digitalization. Training materials on digital marketing, branding, and business management were considered relevant by most respondents. However, some MSMEs consider that the training approach is still general and has not fully adjusted to the level of digital readiness of each participant. This difference in perception shows that a one-size-fits-all coaching approach is less effective in answering the needs of MSMEs with varying levels of technology adoption.

Capital Construction

The results of the study show that most MSMEs still rely on personal capital. Access to KUR, grants, or other funding has not been optimally utilized, although information on financing schemes has been obtained during incubation. This condition indicates that capital development still requires more applicable and sustainable assistance.

Acceptance and Sustainability of Technology Use

In general, respondents showed a positive attitude and intention to continue using digital technology in running a business. MSMEs with a high perception of benefits and convenience tend to have a stronger commitment to digitalization, while MSMEs with a low perception need additional support. These findings reinforce the relevance of TAM in explaining the variation in the level of acceptance of MSME technology in the context of business incubator programs.

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

TAM-Based Coaching Ecosystem

The development of an MSME development model based on the Technology Acceptance Model (TAM) emphasizes that the success of business incubators cannot depend solely on short-term technical training. The acceptance of technology by MSMEs is significantly influenced by ecosystem support that allows business actors not only to understand perceived usefulness and perceived ease of use, but also to have sustainable access to supporting resources. Without an integrated ecosystem, the implementation of TAM tends to stop at the individual conceptual level and does not transform into sustainable institutional practices (Davis, 1989; Venkatesh & Davis, 2000). Therefore, the discussion of this coaching ecosystem is important, especially by looking at the integration of the roles of three key actors, namely the Cooperatives and MSMEs Office, the Industry and Trade Office (Disperindag), and state-owned banks.

1. The Role of the Cooperative and MSME Office

The Cooperatives and MSMEs Office has a strategic role as an orchestrator of the coaching ecosystem. The function of this institution is not only limited to the implementation of training, but also to strengthening cooperative institutions as a means of collaboration for MSMEs. Cooperatives that are managed in a modern and digitalized manner allow MSMEs to obtain collective benefits, such as cost efficiency, access to financing, and market expansion. This condition increases perceived usefulness because MSMEs feel the real impact of technology integration and collective business strategies (Davis, 1989).

In addition, the digitization of cooperative management and continuous mentoring strengthens the perceived ease of use, because the adoption of technology is not carried out individually, but is facilitated by the institutional system that has been prepared. Monitoring post-training technology adoption is also an important element to ensure the sustainability of technology use and distinguishing substantive coaching from ceremonial training.

2. The Role of the Department of Industry and Trade

The Department of Industry and Trade plays a role as a liaison between MSMEs and the industrial and global markets. Facilitation of product standardization and certification increases the competitiveness of MSMEs and strengthens the perception that the application of modern technology and management contributes directly to market opportunities. From the perspective of TAM, this condition strengthens perceived usefulness because the benefits of technology adoption are felt concretely through wider market access (Venkatesh & Davis, 2000).

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

In addition, the development of industry clusters and the integration of digital trade create a collective learning environment that lowers barriers to technology adoption. Clustering encourages the sharing of infrastructure and knowledge, so that MSMEs feel the ease in the digital adaptation process, which ultimately increases the perceived ease of use.

3. Role BUMN Bank

BUMN bank play an important role in strengthening the sustainability of technology adoption through the provision of inclusive financing and digital financial literacy. Performance-based financing schemes encourage MSMEs to integrate technology as part of their business strategy, rather than simply meeting administrative requirements. The digitization of payments and the use of financial applications provide direct benefits in the form of transaction efficiency and financial transparency, which strengthen perceived usefulness as well as perceived ease of use (Venkatesh & Bala, 2008). The collaboration of the assistance program of BUMN Banks with incubators and related agencies strengthens the coaching ecosystem and encourages the sustainable use of technology.

Ecosystem Integration and TAM Relevance

The integration of the role of the Cooperatives and MSMEs Office, Disperindag, and State-Owned Banks shows that TAM can be expanded from a framework of individual behavior analysis to a policy operational framework. Institutional and cross-sectoral support strengthens MSMEs' positive attitude toward using, increases behavioral intention, and encourages actual sustainable use (Davis, 1989; Venkatesh & Davis, 2000). Conceptually, these findings confirm that the acceptance of MSME technology is contextual and influenced by the supporting ecosystem. Practically, the TAM-based coaching ecosystem provides strategic direction for local governments, financial institutions, and incubators in designing adaptive, inclusive, and sustainable coaching programs.

Managerial Implications

The results of the study show that the implementation of the TAM-based coaching model requires integration between digital literacy, institutional support, and access to capital. Business incubators need to design differential coaching based on the level of acceptance of MSME technology and strengthen post-training monitoring. Local governments can use TAM as a diagnostic instrument in program planning so that coaching is more targeted. Meanwhile, banks are expected to synergize financing with the digital readiness of MSMEs so that the loans distributed really encourage business transformation. For MSMEs, this model requires a commitment to consistently apply technology as part of a business development strategy.

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

CONCLUSION

The results of the study show that the acceptance of digital technology by MSMEs fostered by the North Sumatra Provincial Cooperatives and MSMEs Office is influenced by perceived usefulness and perceived ease of use. Digital technology is considered to be able to increase business efficiency, expand market reach, and facilitate promotion and communication with consumers. However, its utilization has not been optimal due to the limitations of digital marketing strategies, financial literacy, and the lack of continuous post-training assistance. The incubation program has a positive impact on increasing the insights, skills, and confidence of MSME actors, although there are still weaknesses in the continuity of coaching and integration of access to capital. Therefore, MSME coaching needs to be directed to an incubation model based on the Technology Acceptance Model (TAM), which is integrated with managerial assistance, financial literacy, and financing facilitation. Local governments, incubators, and financial institutions are advised to strengthen cross-sector collaboration so that the adoption of digital technology by MSMEs can take place in a sustainable manner and have a real impact on increasing business competitiveness.

REFERENCES

Asmara, D., & Kusumastuti, R. (2023). Kolaborasi Triple Helix dalam pengembangan UMKM halal. *Jurnal Ekonomi dan Bisnis Islam*, 8(2), 145–158.

Cleodora, A., & Diana, S. (2023). Model Pentahelix dalam pengembangan UMKM. *Jurnal Manajemen Pembangunan*, 5(1), 33–45.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.

Davis, F. D., & Granic, A. (2024). Technology Acceptance Model: Recent developments and applications. *Journal of Information Systems*, 38(1), 1–15.

Diskop UKM Provinsi Sumatera Utara. (2024). *Data UMKM Provinsi Sumatera Utara Tahun 2024*. Medan.

Fitrianisa, R., Dwiharyadi, Afni, N. (2023). Analisis faktor-faktor yang mempengaruhi minat penggunaan aplikasi akuntansi berbasis digital pada pelaku UMKM di Kota Padang. *Musytari Neraca: Jurnal Ekonomi dan Bisnis Islam*, *5*(3), 176–184.

Florita, A. (2018). Pembinaan UMKM dan peningkatan daya saing usaha kecil. *Jurnal Ekonomi Mikro*, 6(1), 22–35.

Ginting, R., Nasution, A., Harahap, M., & Siregar, D. (2025). Tantangan UMKM Sumatera Utara di tengah tekanan ekonomi. *Jurnal Ekonomi Daerah*, 9(1), 55–68.

Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan

Vol. 6 No. 1, 2026, 727–737 e-ISSN 2798-0170

Regency. *Malacca: Journal of Management and Business Development* , *1*(1), 31–46. https://doi.org/10.69965/malacca.v1i1.51

Kementerian Koperasi dan UKM Republik Indonesia. (2023). *Data UMKM Nasional Tahun 2023*. Jakarta.

Pratita, A., et al. (2024). Integrasi TAM dan TPB dalam adopsi e-commerce UMKM pasca pandemi Covid-19. *Jurnal Manajemen dan Kewirausahaan*, 26(1), 1–15.

Pusfitaningrum, D., et al. (2022). Analisis penerimaan e-commerce pada UMKM agribisnis menggunakan TAM. *Jurnal Agribisnis Indonesia*, 10(2), 101–112.

Rustandi, R. (2020). Indikator pertumbuhan usaha mikro dari sisi nilai tambah dan ketenagakerjaan. *Jurnal Pengembangan Ekonomi Lokal*, *5*(2), 91–104.

Sembiring, M., Lubis, H. (2025). Self-efficacy dan penerimaan teknologi oleh UMKM pasca pelatihan. *Jurnal Pemberdayaan Ekonomi Digital, 5*(1), 33–47.

Sitorus, D., et al. (2023). Model inkubator bisnis partisipatif di Indonesia. *Jurnal Kewirausahaan Nasional*, 11(1), 1–15.

Sugiyono. (2019). *Metode Penelitian Kualitatif, Kuantitatif, dan R&D*. Bandung: Alfabeta.

Susilo, H. (2019). Inkubator bisnis sebagai strategi pengembangan usaha baru. *Jurnal Manajemen Bisnis*, 14(1), 45–56.

Temasek, Bain & Company, & Google. (2023). *e-Conomy SEA 2023 Report*. Singapore.

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model. *Management Science*, 46(2), 186–204.

Venkatesh, V., et al. (2022). *User acceptance of information technology*.

Widyastuti, H., Utami, S., Rachmawati, A. (2022). Business incubation and SME digital readiness: Evidence from Indonesia. *Journal of Small Business Strategy, 32*(3), 45–63

World Economic Forum. (2023). *Global Competitiveness Report 2023*. Geneva.