Mediating Roles of AI-Driven Adoption in IT Agility Drivers on Digital Transformation

1st Sandy Kosasi
Information System
STMIK Pontianak
Pontianak, West Kalimantan, Indonesia
sandykosasi@stmikpontianak.ac.id

2nd Po Abas Sunarya
Informatics Engineering Department
Universitas Raharja
Tangerang, Indonesia
abas@raharja.info

3rd Susanti Margaretha Kuway
Information System
STMIK Pontianak
Pontianak, West Kalimantan, Indonesia
shantykuway@stmikpontianak.ac.id

4th I Dewa Ayu Eka Yuliani
Information System
STMIK Pontianak
Pontianak, West Kalimantan, Indonesia
dewaayu.eka@stmikpontianak.ac.id

5th Utin Kasma
Information System
STMIK Pontianak
Pontianak, West Kalimantan, Indonesia
utin.kasma@yahoo.co.id

6th Febriana Giovani
Information System
STMIK Pontianak
Pontianak, West Kalimantan, Indonesia
febrianaskw80@gmail.com

***Abstract*—Regarding AI-driven adoption being the primary catalyst for digital transformation, a considerable disparity in technology acceptance persists between large corporations and micro, small, and medium enterprises (MSMEs). Previous studies predominantly concentrate on the impact of IT agility drivers, specifically regarding IT flexibility, IT capability, and IT governance, on the facilitation of digital transformation, neglecting the correlation with AI-driven adoption. The research seeks to examine how AI-driven adoption mediates the influence of IT agility factors on enabling smooth digital transformation in MSMEs. The research methodology utilizes a convergent triangulation approach with an explanatory design supported by subsequent clarification. The research population consists of MSME companies that have been in existence for more than five years. Questionnaires were disseminated to 305 participants online through random sampling methods, yielding 262 responses, resulting in a return rate of 85.90%. Data processing utilizing the Likert scale and analytical tools employing SEM-PLS. The findings indicated that IT flexibility does not affect AI-driven adoption, and in this context, enhancing IT flexibility may impede AI-driven adoption. Furthermore, IT governance and IT flexibility do not significantly contribute to enabling a smooth and efficient digital transformation.**

Keywords—IT Agility Drivers, AI-Driven Adoption, Digital Transformation.

I. INTRODUCTION

Digital transformation has become a vital factor in improving competitiveness and organizational progress in Industry 4.0. Businesses, encompassing micro, small, and medium enterprises (MSMEs), must consistently embrace digital technology to improve efficiency, foster innovation, and ensure sustainability. Digital transformation includes the incorporation of novel technologies, modification of business models, optimization of operational efficiency, innovation in products and services, improvement of customer experience, and the creation of additional customer value. [1]. Digital channels, such as e-commerce, social media, and marketplaces, provide MSME firms with the capability to reach clients outside geographical constraints. This can enhance sales and broaden market share [2]. Digital transformation can stimulate growth and generate possibilities for MSME enterprises. The achievement of digital transformation is inherently linked to the mastery of information technology (IT) agility drivers, encompassing IT flexibility, IT capability, and IT governance within a highly variable environment.

IT capability indicates an organization's proficiency in developing, managing, and leveraging IT resources to achieve business objectives. This competency encompasses infrastructure, technical proficiency, and IT-driven innovation capacity, allowing firms to adapt more effectively to change [3]. IT flexibility indicates the extent to which IT systems and procedures may be readily modified according to evolving business demands. This agility is essential for accelerating the adoption of new technologies and reducing barriers to digital transformation [4]. Conversely, IT governance is crucial for ensuring that IT implementation aligns with corporate objectives and operates efficiently while maintaining security and compliance standards [5]. The three pillars are essential for facilitating IT agility drivers, which pertain to the organization's capacity to adapt to technological changes and market dynamics swiftly, hence enhancing inventive competitiveness amid technological disruption. Digital transformation enables MSME enterprises to expand and become more agile in introducing diverse new services and products to confront increasingly challenging problems [6]. The efficacy of digital transformation is intrinsically linked to the support and preparedness for AI-driven adoption. The digital transformation method involves substituting manual systems with technology-driven solutions, enhancing corporate processes, refining data analysis, and expediting decision-making based on real-time information [7]. Moreover, AI-driven adoption offers user-friendly solutions that do not necessitate extensive technical proficiency [8]. Using AI-driven adoption can provide numerous opportunities and advances in developing MSME businesses.

Despite AI-driven adoption being a significant catalyst for digital transformation, a substantial technological adoption gap persists between major organizations and MSMEs. Prior studies have primarily examined the impact of IT agility drivers on IT flexibility, IT capabilities, and IT governance in facilitating digital transformation, often overlooking the connection with AI-driven adoption [9]. Few studies have explored how AI can mediate this relationship, especially in the digital transformation of MSME business contexts. Similarly, effective IT governance directly enhances IT flexibility and IT capabilities, facilitating seamless digital transformation [10]. The efficacy of IT governance can enhance IT agility drivers, enabling the digital transformation process to improve business performance [11]. In this context, IT capability, IT flexibility, and IT governance significantly contribute to and facilitate the success of digital transformation [12].

Most previous research has insufficiently examined the technical aspects of AI, perceiving AI-driven adoption solely as a mediating variable in the correlation between IT agility determinants and the achievement of digital transformation success [14]. There is a tendency to emphasize the significance of IT agility drivers in enabling smooth digital transition, overlooking its relationship with the mediating influence of AI-driven adoption. Investigations into AI-driven adoption inside MSMEs remain notably few, particularly in Indonesia. Numerous empirical studies emphasize that MSME enterprises implement IT solutions, such as e-commerce and cloud computing, without regard for the factors influencing IT agility drivers that facilitate seamless AI-driven adoption [15].

This condition is not much different from the initial survey, where the average MSME business in West Kalimantan has not considered adopting AI in carrying out digital transformation. Considering that many MSME players still do not understand the adoption of AI technology in increasing competitiveness, are unprepared, and lack digital literacy knowledge, there is still an assumption that adopting AI technology is complicated and can only be used by large companies. With a lack of skilled resources, many MSME players still doubt the extent to which the adoption of AI technology can provide significant benefits in the short term, due to resistance to change and the primary focus on daily operational challenges.

The research is interesting as previous studies have largely neglected to investigate and validate the degree to which AI-driven adoption mediates the impact of IT agility drivers, encompassing IT flexibility, IT capability, and IT governance, on facilitating a seamless digital transformation process [15, 16]. While numerous studies have explored the correlation between IT agility drivers (IT capacity, IT flexibility, and IT governance) and digital transformation, research particularly investigating the mediating role of AI-driven adoption remains limited. This innovation is noteworthy, since many prior studies see AI-driven adoption solely as a tool or auxiliary technology for digital transformation, rather than as a strategic component that links IT agility with the success of digital transformation. This is corroborated by a previous study [17], which emphasizes the direct influence of AI-driven adoption on organizations, irrespective of the agility of IT drivers. Research on digital transformation in MSMEs predominantly focuses on IT adoption rather than AI-driven adoption, resulting in limited examination of AI technology as a mediating factor. The adoption of AI is often viewed as requiring significant financial investment and advanced literacy skills, thereby posing challenges to its implementation within MSME enterprises. [18].

The research problem defines a relationship aimed at evaluating the extent of effective digital transformation, intrinsically linked to the direct and indirect effects of each exogenous construct—specifically, the drivers of IT agility, comprising three pillars: IT flexibility, IT capability, and IT governance, with the process mediated by AI-driven adoption and its associated indicators. The problem formulation aligns with the research objectives, specifically to investigate and validate the degree to which AI-driven adoption and its indicators affect and positively influence the efficacy of digital transformation in MSME operations, while offering practical recommendations for stakeholders overseeing MSME enterprises in the West Kalimantan region.

II. Literature Review

A. IT Agility Drivers

IT agility drivers refer to an organization's ability to rapidly and effectively respond to changes in the environment. The primary factors influencing IT agility drivers are IT capability, IT flexibility, and IT governance. The IT capability component denotes the ability of organizational resources to administer, cultivate, and leverage IT to attain competitive advantage [19]. Capability encompasses technical elements, including dependable IT infrastructure, IT personnel competencies, and the effectiveness of management processes. Organizations can more swiftly recognize new opportunities and initiatives to address difficulties through IT capabilities [20]. IT flexibility denotes the capacity of IT infrastructure and systems to adjust to evolving business requirements. Adaptable IT systems enable enterprises to alter, integrate, and enhance technology with minimal disturbance. Flexibility is a crucial element that underpins operational agility and innovation under digital disruption [21]. IT Governance is critical for creating frameworks, policies, and decision-making processes that align IT investments and utilization with the organization's business plan [22]. These three factors interrelate and constitute the foundation for enterprise IT agility drivers. IT capabilities facilitate these two dimensions by supplying the requisite resources and expertise [20]. IT flexibility enables the system to adjust to changes [21] swiftly, whereas effective IT governance establishes the framework for prompt and appropriate decision-making [22]. Integrating these three factors allows firms to react to market dynamics with efficiency and efficacy. The amalgamation of adaptive IT governance, flexible IT architecture, and robust IT skills is essential for sustaining corporate agility.

B. AI-driven adoption

AI-driven adoption facilitates the expeditious advancement of digital transformation within enterprises by utilizing sophisticated algorithms that evaluate data, forecast trends, and offer more accurate recommendations [23]. AI-driven adoption refers to the intentional and methodical integration of artificial intelligence (AI) technology into an organization's operations, workflows, and decision-making processes. The objective is to enhance corporate operations, increase efficiency, and create new chances for innovation [24]. This approach includes pinpointing domains where AI can have a substantial influence, choosing appropriate AI tools and technologies, educating personnel, and modifying the corporate culture to facilitate AI-driven transformation. AI-driven adoption encompasses not only the deployment of AI technologies but also necessitates strategic modifications, personnel training, and alterations in organizational culture to guarantee effective and sustainable integration of AI [25]. The capacity of AI to comprehend user behaviors and preferences facilitates AI-driven adoption, enhancing efficiency in implementing new technologies, diminishing barriers to acceptance, and aligning implemented changes more closely with market demands and dynamics [26]. AI-driven adoption enhances efficiency, broadens market reach, adapts to evolving trends, and improves competitive positioning in the digital era.

C. Digital Transformation

Digital transformation incorporates technology across all organizational operations, leading to profound alterations in

work methodologies and customer value delivery [27]. Digital transformation entails a substantial alteration in the core elements of an organization, facilitated by integrating information technology, computing, communication, and connection to enhance the speed, efficiency, and efficacy of services and operations [28]. This process encompasses the integration of new technology as well as modifications in culture, attitude, and operational processes to enhance organizational performance and competitiveness [29]. Digital transformation initiatives not only substitute manual processes with information technology but also alter the organizational culture and mindset to fully leverage digital technologies' capabilities [30, 31]. This state entails reorganizing the structure and establishing environmental processes that facilitate innovation and adaptation requirements. Moreover, digital transformation emphasizes IT installation and modifying strategy, culture, and procedures to guarantee the successful and sustainable integration of technology within the business.

III. Research Method

The research population comprises all MSME enterprises in West Kalimantan that have been operational for over five years. The designated time frame can indicate the performance outcomes of each MSME without distinguishing between business types. Primary data were collected through a survey conducted from January to May 2025, employing random sampling methods to distribute questionnaires online via Google Forms to 305 respondents. Of these, 262 MSME enterprises provided complete responses, yielding a response rate of 85.90%. The duration set in this study adequately demonstrates and reflects patterns and behaviors related to the use of IT in the operational management of MSME enterprises. The research methodology employs a convergent triangulation model in conjunction with an explanatory design, supplemented by follow-up explanations [32]. The research process commences with background analysis, followed by a literature review, problem formulation, hypothesis development, data collection, data analysis, presentation of results, and concluding discussions [33].

The data were evaluated on a Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). This scale mitigates respondents' doubt bias, enhancing data accuracy and ensuring reliability in research outcomes [34]. The analytical technique utilized is Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) method. The SEM-PLS process involves several stages: constructing the conceptual model, analyzing the algorithm, employing bootstrapping methods, developing the path map, evaluating the research model, and formulating conclusions and recommendations [35]. The data distribution was analyzed by bootstrapping and normality assessment. Furthermore, it was validated by extensive interviews with five leaders of MSMEs. Key informants were selected according to inclusive and exclusive criteria. They provided input to validate the results of the route coefficient analysis, which indicates the impact of IT agility drivers (IT Capability, IT Flexibility, IT Governance) on the implementation of digital transformation via AI-driven Adoption.

Hypothesis testing is conducted on each research variable construct to assess the impact of IT agility drivers, comprising three primary factors: IT Capability, IT Flexibility, and IT Governance, in facilitating the digital transformation process mediated by AI-driven adoption. The following outlines the research hypotheses: IT capability positively influences digital transformation. H2: IT flexibility positively influences digital transformation. H3: IT governance positively influences digital transformation. IT capability has a positive impact on digital transformation through the mediation of the AI-driven adoption construct. H5: IT flexibility has a positive effect on digital transformation through the mediation of the AI-driven adoption construct. H6: IT governance has a positive impact on digital transformation through the mediation of the AI-driven adoption construct—the hypothesis tests aimed to evaluate the influence of AI-driven digital transformation on the competitiveness of MSMEs.

IV. Results and Discussion

The analysis of the research results begins with an evaluation of the path coefficients for exogenous and endogenous variables. This research's findings are utilized to estimate through the Partial Least Squares (PLS) Algorithm approach, accompanied by a bootstrapping procedure. The main aim of the bootstrapping method is to establish an optimal data distribution system that fulfills the normality assumption in the research model. The bootstrapping procedure utilizes an algorithm to create multiple resamples via resampling with replacement. This method entails that each resample comprises a selection of randomly chosen data rows from the original dataset, allowing for the potential repetition of individual data rows [34]. The results of this research employed the Structural Equation Modeling-Partial Least Squares (SEM-PLS) framework to examine the relationship between exogenous and endogenous latent variables. The analyzed exogenous variables include IT capacity, IT flexibility, and IT governance, while the endogenous variables encompass AI-driven adoption and digital transformation. Validated indicators evaluate each latent variable and draw from relevant previous research.

This research model comprises five key constructs. First, IT capability encompasses the ability to manage IT infrastructure (ITC1), manage applications and data (ITC2), support business needs through IT (ITC3), and integrate new technologies (ITC4). Second, IT flexibility refers to the ability to adapt IT systems to business changes (ITF1), scale IT capacity according to needs (ITF2), and adopt new technologies without disrupting operations (ITF3). Third, IT governance involves ensuring compliance with IT regulations (ITG1), managing IT-related risks (ITG2), maintaining relationships with IT vendors (ITG3), and engaging management in IT decision-making processes (ITG4). Fourth, AI-driven adoption includes the application of AI in customer service (AIA1), business data analysis (AIA2), business process automation (AIA3), and digital marketing (AIA4). Finally, digital transformation entails the adoption of digital platforms for sales and marketing (DT1), the use of social media for customer engagement (DT2), the digitalization of operational processes (DT3), and the utilization of digital tools for team collaboration (DT4).

The findings of the outer model analysis illustrate the relationship between latent variables and their respective indicators, as depicted in the research route diagram (see Figure 1). The validity assessment was conducted in two primary phases: convergent validity and discriminant validity. Convergent validity is assessed by the Average Variance Extracted (AVE) method and composite reliability, which seek to confirm that indicators measuring the same latent variable exhibit a robust correlation. Discriminant validity

confirms that each latent variable in the model accurately assesses distinct constructs. Discriminant validity is assessed using the Fornell-Larcker criterion, which involves comparing the square root of a construct's Average Variance Extracted (AVE) to its correlations with other constructs. The AVE value measures the extent to which each concept accounts for variance relative to the variance attributed to measurement error. An AVE score of 0.50 signifies that the latent variable accounts for over fifty percent of the variance in its indicators, hence satisfying the criterion for convergent validity. The findings from the external model analysis in this study demonstrate the correlation among components depicted in the research route diagram (see Figure 1).

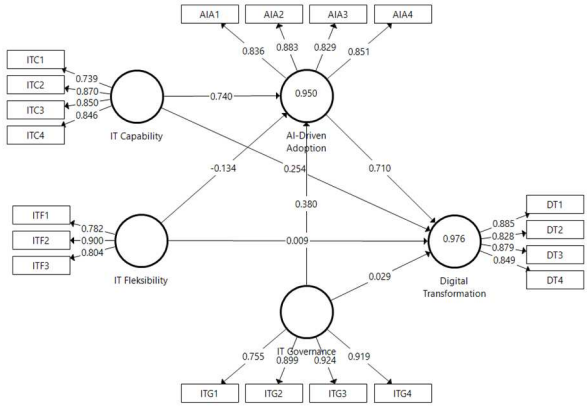

Fig. 1. Research Path Diagram Model

The findings of the outer model analysis demonstrate that each construct in this research exerts a substantial influence. The path coefficient computations produce values more than 0.70, signifying a strong link among the latent variables in the structural model, which strongly affect each other. The calculation results of the outer loadings for IT agility drivers are as follows: IT Capability ranges from 0.739 to 0.870, with ITC2 as the strongest indicator at 0.870. IT Flexibility exceeds IT Capability, ranging from 0.782 to 0.900, with ITF2 as the most dominant value at 0.900. IT Governance shows the highest IT Capability and IT Flexibility values, ranging from 0.755 to 0.924, with ITG3 as the most dominant indicator at 0.924. AI-driven adoption ranges from 0.829 to 0.883, surpassing IT Capability and IT Flexibility but falling short of IT Governance, with AIA2 as the most dominant indicator at 0.883. Lastly, digital transformation ranges from 0.828 to 0.885, with DT1 as the strongest indicator at 0.885, indicating a very high correlation of these indicators to the latent variable. The results suggest that IT Governance exhibits the highest and most stable contribution. In contrast, IT Capability presents a lower value than other constructs, though it remains valid and reliable in measuring its latent variable.

Table I presents the results of the discriminant validity assessment for each construct, evaluated using the Fornell–Larcker criterion. Table II summarizes the reliability and convergent validity results, calculated through Composite Reliability (CR), Cronbach's Alpha (CA), and Average Variance Extracted (AVE). According to established thresholds, a construct is considered reliable and valid if it exhibits a CR greater than 0.80, a CA exceeding 0.70, and an AVE above 0.50 [34]. All these conditions must be satisfied to confirm the reliability and validity of the constructs. The research model further ensures that each latent construct is precisely represented by its corresponding indicators.

TABLE I. DISCRIMINANT VALIDITY

Fornell-Larcker Criterion	AIA	DT	ITC	ITF	ITG
AI-Driven Adoption (AIA)	0.850				
Digital Transformation (DT)	0.985	0.861			
IT Capability (ITC)	0.956	0.963	0.828		
IT Flexibility (ITF)	0.683	0.696	0.705	0.830	
IT Governance (ITG)	0.881	0.869	0.817	0.776	0.877

TABLE II. RELIABILITY AND VALIDITY OF CONSTRUCTS

Fornell-Larcker Criterion	CA	rho_A	CR	AVE
AI-Driven Adoption (AIA)	0.871	0.872	0.912	0.722
Digital Transformation (DT)	0.883	0.884	0.919	0.741
IT Capability (ITC)	0.847	0.862	0.897	0.685
IT Flexibility (ITF)	0.774	0.800	0.869	0.689
IT Governance (ITG)	0.899	0.924	0.930	0.769

The inner model analysis is conducted using the bootstrapping technique in SmartPLS v.3.2.8. This approach assesses the significance of each indicator within the constructs by calculating t-values to examine the effects and relationships among the constructs in the research model. An indicator is considered significant when the T-statistic exceeds 1.96—corresponding to the z-score at a 95% confidence interval—and the p-value from the t-value calculation is less than 0.05 [34]. The path coefficient significance testing reveals that all original sample values and T-statistics yield positive results. Furthermore, all constructs in the model exhibit t-statistic values exceeding the critical value, as presented in Table III.

TABLE III. PATH SIGNIFICANCE TEST

Fornell-Larcker Criterion	Original Sample (O)	T-Statistic (|O/STDEV|)	P-Values
IT-Driven Adoption → Digital Transformation	0.710	0.047	0.000
IT Capability → AI-Driven Adoption	0.740	0.018	0.000
IT Capability → Digital Transformation	0.254	0.041	0.000
IT Flexibility → AI-Driven Adoption	-0.134	0.020	0.000
IT Flexibility → Digital Transformation	0.009	0.019	0.620
IT Governance → AI-Driven Adoption	0.380	0.023	0.000
IT Governance → Digital Transformation	0.029	0.025	0.243

The path coefficient significance test results indicate that not all original sample values are positive or exert an influence (see Figure III), as the IT flexibility construct demonstrates no influence on AI-driven adoption, with a value of -0.134. This instance indicates that more IT flexibility will result in diminished AI-driven adoption. This circumstance illustrates a contradiction in IT deployment, wherein enhanced IT

flexibility may impede AI-driven adoption. IT flexibility denotes the capacity of IT systems to accommodate alterations in the business landscape, assimilate emerging technology, and modify organizational requirements without substantial limitations [21]. In AI-driven adoption, excessive flexibility may pose difficulties in achieving data standards, system interoperability, and process consistency essential for efficient AI training. The plethora of alternatives and configurations in a highly adaptable IT system may impede firms from establishing a stable and structured foundation for AI implementation, obstructing the optimization and exploitation of AI technologies in MSME enterprises. Consequently, although facilitating the rapid deployment of AI, excessive flexibility may diminish the preparedness to incorporate AI into business strategy.

The findings show that MSMEs with minimal AI deployment encounter challenges in data standards and technology integration, which may hinder operational efficiency and decision-making. Without AI, numerous corporate activities would encounter productivity setbacks and heightened operational expenses. Furthermore, competitiveness will decline due to the failure to leverage automation and data analytics compared to entities embracing AI. The intricacy of an excessively adaptable IT infrastructure can impede business expansion and complicate access to capital and investment. Consequently, a balance between IT flexibility and AI-driven adoption is essential for enhancing the sustainability of MSME competitiveness. This research offers originality, as it remains uncommon to investigate how AI-driven adoption facilitates the operational efficiency of MSMEs. This assertion contradicts the prevailing belief that IT flexibility facilitates AI-driven adoption in the operation of MSME enterprises [21].

Furthermore, the goodness-of-fit assessment procedure is conducted on the inner model by computing the adjusted R-squared value. The calculation results indicate that AI-driven adoption has a value of 0.950, while digital transformation has a value of 0.976. This score signifies that AI-driven adoption is significantly affected by the IT agility drivers factor, encompassing three primary dimensions: IT capacity, IT flexibility, and IT governance. Digital transformation is predominantly influenced by the variables included in the study, indicating that its efficacy is significantly contingent upon the organization's technological readiness and implementation. Consequently, these findings validate that AI-driven adoption and digital transformation are intricately linked and significantly enhance the competitiveness and sustainability of MSMEs in the digital age. The calculation results indicate that the predictive relevance R-Square value attains 0.998 (99.8%). This score signifies that the research model possesses a remarkably high, trustworthy, and valid predictive capacity for estimating unobserved dependent variables within the model. Meanwhile, external influences influence the remainder.

The findings from the inner model analysis reveal that AI-driven adoption serves as a positive mediator in the relationship between IT agility drivers—comprising IT capability, IT flexibility, and IT governance—and the practical implementation of digital transformation in MSME enterprises. The computation of the route coefficient indicates that IT capacity and IT governance have positive values (0.525 and 0.270, respectively), whereas IT flexibility demonstrates a negative value (-0.095). This suggests that IT flexibility impacts the seamless digital transformation of MSME enterprises without AI-driven adoption. Elevated IT flexibility enables MSME enterprises to autonomously adjust to digital transformations without dependence on AI to expedite or automate the transition process. This encompasses the simplicity of incorporating new technologies into established systems and the capacity to tailor IT infrastructure.

Additionally, the path coefficient diagram model for each variable construct indicates that IT Capability and IT Governance positively influence AI-driven adoption, whilst IT Flexibility exerts no significant effect on AI-driven adoption. Simultaneously, IT Flexibility and AI-driven adoption have minimal impact on facilitating seamless digital transition. The correlation between IT governance and IT flexibility with digital transformation exhibits negligible implications (0.029 and 0.009). This indicates that IT governance and IT flexibility are not primary determinants in facilitating a seamless and effective digital transition. This research suggests substantial disparities exist concerning the fluidity of the digital transformation process. This finding contrasts with earlier studies [21, 22], which assert that IT flexibility significantly affects AI-driven adoption and directly facilitates the seamless digital transformation of MSME enterprises. A feedback procedure was implemented to achieve more precise outcomes from the prior analysis. Five informants posed the same issue during group conversations, concluding that MSME enterprises should establish rules and processes by integrating AI technology.

V. Conclusion and Future Research

IT flexibility negatively influences the adoption of AI-based solutions, and its effect on the digital transformation of MSME firms is relatively constrained. This indicates that while IT flexibility is beneficial for AI adoption, excessive flexibility may impede the integration of AI with existing infrastructure. This finding provides a valuable avenue for future research to investigate in greater depth the intricate interrelationships among the components of the proposed model. Such exploration may include a comprehensive examination of the dynamic interactions between constructs, as well as an assessment of the distinct contributions and relative significance of each associated indicator in shaping the overall outcomes. Understanding these elements will allow MSME firms to devise strategies for efficiently integrating AI and expediting digital transformation.

References

[1] G. Elia, G. Solazzo, A. Lerro, F. Pigni, & C. L. Tucci, “The Digital Transformation Canvas: A Conceptual Framework for Leading Digital Transformation Process,” Business Horizons, 67, 2024, pp. 381-398.

[2] M. N. Ardiansah, S. Martini, R. Raharjanti, U. Hidayati, & A. W. Mansur, “Determinants of ICT Adoption in Business for Emerging SME Entrepreneurs in Indonesia,” European Journal of Business and Management Research, 9(5), 2024, pp. 177-184.

[3] H. Mao, S. Liu, & Y. Gong, ”Balancing Structural IT Capabilities for Organizational Agility in Digital Transformation: A Resource Orchestration View,” International Journal of Operations & Production Management, 44(1), 2024, pp. 315-344.

[4] J. Khuntia, T. Saldanha, A. Kathuria, & M. R. Tanniru, “Digital Service Flexibility: A Conceptual Framework and Roadmap for Digital Business Transformation,” European Journal of Information Systems, 33(1), 2024, pp. 61-79.

[5] A. Ilmudeen, “Information Technology (IT) Governance and IT Capability to Realize Firm Performance: Enabling Role of Agility and Innovative Capability,” Benchmarking: An International Journal, 29(4), 2022, pp. 1137-1161.

[6] S. Ajgaonkar, N. G. Neelam, & J. Wiemann, “Drivers of Workforce Agility: A Dynamic Capability Perspective,” International Journal of Organizational Analysis, 30(4), 2022, pp. 951-982.

[7] C. Pelletier, F. L'Écuyer, and L. Raymond, “Digital Transformation Capabilities in Manufacturing SMEs: Gaining Agility Through IT Capability Configurations,” 56th Hawaii International Conference on System Sciences, 2023, pp. 4284-4293.

[8] P. Eng’airo, “The Impact of AI-Driven Performance Evaluation on Organizational Outcomes in Kenya: A Systematic Literature Review,” Journal of Information and Technology, 8(2), 2024, pp. 1-15.

[9] G. Mangalaraj, S. Nerur, & R. Dwivedi,” Digital Transformation for Agility and Resilience: An Exploratory Study,” Journal of Computer Information Systems, 63(1), 2023, pp. 11-23.

[10] P. Mikalef, A. Pateli, & R. van de Wetering, “IT Architecture Flexibility and IT Governance Decentralization As Drivers of IT-Enabled Dynamic Capabilities and Competitive Performance: The Moderating Effect of the External Environment,” European Journal of Information Systems, 30(5), 2021, pp. 512-540.

[11] X. Zhang, Y. Y. Xu, & L. Ma, “Information Technology Investment and Digital Transformation: The Roles of Digital Transformation Strategy and Top Management,” Business Process Management Journal, 29(2), 2023, pp. 528-549.

[12] J. Khuntia, T. Saldanha, A. Kathuria, & M. R. Tanniru, “Digital Service Flexibility: A Conceptual Framework and Roadmap for Digital Business Transformation,” European Journal of Information Systems, 33(1), 2024, pp. 61-79.

[13] V. Barba-Sánchez, A. Meseguer-Martínez, R. Gouveia-Rodrigues, and M. L. Raposo, “Effects of Digital Transformation on Firm Performance: The Role of IT Capabilities and Digital Orientation, Heliyon, 10(6), 2024, pp. 1-10.

[14] J. P. Shetty, & R. Panda, “Cloud Adoption in Indian SMEs–an Empirical Analysis,” Benchmarking: An International Journal, 30(4), 2023, pp. 1345-1366.

[15] H. Mao, Y. Gong, & R. Titah, “Understanding The Relationship Between IT Capabilities and Operational Agility: A Multi-method Approach,” Journal of Enterprise Information Management, 36(2), 2023, pp. 409-436.

[16] H. T. Tsou and J. S. Chen, “How Does Digital Technology Usage Benefit Firm Performance? Digital Transformation Strategy and Organizational Innovation as Mediators,” Technology Analysis & Strategic Management, 35(9), 2023, pp. 1114-1127.

[17] M. Masialeti, A. Talaei-Khoei, & A. T. Yang, “Revealing The Role of Explainable AI: How Does Updating AI Applications Generate Agility-Driven Performance?,” International Journal of Information Management, 77, 2024, pp. 102779.

[18] T. V. Iyelolu, E. E. Agu, C. Idemudia, & T. I. Ijomah, “Driving SME Innovation with AI Solutions: Overcoming Adoption Barriers and Future Growth Opportunities,” International Journal of Science and Technology Research Archive, 7(1), 2024, pp. 036-054.

[19] S. Ajgaonkar, N. G. Neelam, & J. Wiemann, “Drivers of Workforce Agility: A Dynamic capability perspective,” International Journal of Organizational Analysis, 30(4), 2022, pp. 951-982.

[20] V. Barba-Sánchez, A. Meseguer-Martínez, R. Gouveia-Rodrigues, & M. L. Raposo, “Effects of Digital Transformation on Firm Performance: The Role of IT Capabilities and Digital Orientation,” Heliyon, 10(6), 2024, pp. 1-10.

[21] X. Zhu, Q, Zhao, & X. Yao, “How Inventory Flexibility Affects Productivity: The Moderating Roles of Digital Transformation and Supply Chain Concentration,” Journal of Manufacturing Technology Management, 35(8), 2024, pp. 1554-1580.

[22] S. Borja, Y. Moon, H. Yoon, & J. Hwang, “IT Governance Mechanisms, IT Governance Domains, and Their Influence on IT Governance Effectiveness: Empirical Analysis in Colombia,” Portland International Conference on Management of Engineering and Technology (PICMET), IEEE, 2022, pp. 1-10.

[23] A. Taherizadeh, & C. Beaudry, “An Emergent Grounded Theory of AI-Driven Digital Transformation: Canadian SMEs’ perspectives,” Industry and Innovation, 30(9), 2023, pp. 1244-1273.

[24] U. A. Khan, J. Kauttonen, & D. Kudryavtsev, “AI Adoption in Finnish SMEs: Key Findings from AI Consultancy at a European Digital Innovation Hub,” 23rd World Symposium on Applied Machine Intelligence and Informatics (SAMI), IEEE, 2025, pp. 000465-000470.

[25] I. Kulkov, J. Kulkova, R. Rohrbeck, I. Menvielle, V. Kaartemo, & H. Makkonen, “Artificial Intelligence - Driven Sustainable Development: Examining Organizational, Technical, and Processing Approaches to Achieving Global Goals,” Sustainable Development, 32(3), 2024, pp. 2253-2267.

[26] N. Rane, S. P. Choudhary, & J. Rane, “Acceptance of Artificial Intelligence: Key Factors, Challenges, and Implementation Strategies,” Journal of Applied Artificial Intelligence, 5(2), 2024, pp. 50-70.

[27] A. Hanelt, R. Bohnsack, D. Marz, & C. Antunes Marante, “A Systematic Review of The Literature on Digital Transformation: Insights and Implications for Strategy and Organizational Change,” Journal of Management Studies, 58(5), 2021, pp. 1159-1197.

[28] M. I. Ononiwu, O. C. Onwuzulike, & K. Shitu, “The Role of Digital Business Transformation in Enhancing Organizational Agility,” World Journal of Advanced Research and Reviews, 23(3), 2024, pp. 285-308.

[29] S. Seppänen, J. Ukko, & M. Saunila, “Understanding Determinants of Digital Transformation and Digitizing Management Functions in Incumbent SMEs,” Digital Business, 2025, pp. 100106.

[30] M. Elazhary, A. Popovič, P. Henrique de Souza Bermejo, and T. Oliveira, “How Information Technology Governance Influences Organizational Agility: The Role of Market Turbulence,” Information Systems Management, 2022, pp.1-21.

[31] S. Vejseli, A. Rossmann, and K. Garidis, “The Concept of Agility in IT Governance and its Impact on Firm Performance,” Thirtieth European Conference on Information Systems (ECIS), 2022, pp.1-17.

[32] J. F. Hair et al., “Advanced Issues in Partial Least Squares Structural Equation Modeling,” Second Edition, SAGE Publications, Inc., 2023.

[33] J. W. Creswell and J. D. Creswell, "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches," Sixth Edition, California: SAGE Publications, Inc., 2022.

[34] U. Sekaran and R. Bougie, "Research Methods for Business: A Skill Building Approach," Eighth Edition, United Kingdom: John & Wiley & Sons, Ltd., 2020.

[35] J. F. Hair et al., "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)," Third Edition, SAGE Publications, Inc., 2021.