TRUST-DRIVEN AI ADOPTION AND ITS IMPACT ON ORGANIZATIONAL INNOVATION AND PERFORMANCE

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ABSTRACT

Accelerated changes in the business environment require prompt managerial actions. The traditional approach to information systems is progressively being replaced by a dynamic adaptive framework that utilizes Artificial Intelligence (AI) technology. The application of AI fosters organizational growth across many industries, including Micro, Small, and Medium Enterprises (MSMEs). This research aims to fill a significant vacuum in the current literature about the determinants of AI adoption and its ensuing impacts. The study specifically investigates AI adoption among Indonesian MSMEs, which are vital to the country's GDP growth. Data was collected via a field survey, comprising 357 respondents from MSME business operators in Indonesia. The findings reveal that trust significantly influences AI adoption (p = 0.000), AI adoption significantly impacts innovation (p = 0.000), and innovation significantly enhances organizational performance (p = 0.000). Conversely, AI adoption does not have a significant direct effect on organizational performance (p = 0.944). This study highlights the necessity of cultivating trust and improving the business readiness of MSME stakeholders through investments in AI technology to promote innovation and integrate novel components into their enterprises.

KEYWORDS: Trust, AI Adoption, Innovation, Organizational Performance, MSME, Sustainable Growth.

1. INTRODUCTION

Changes in the business world usually mean new challenges. Backed by AI technologies, an approach focused on continuous change is taking over the traditional way of managing information systems. AI Technologies are now viewed as the cornerstone of corporate strategy and organizational change (Buzko et al., 2016). AI not only improves organizational efficiency and productivity, but also enables rapid growth and more advanced innovations. Many consider AI development the next major milestone in technological evolution, as machines can now reason, strategize, and perform very complicated human work without tiring (Murgai, 2018). Implementing systems and technologies as AI requires a leap of faith, and the effectiveness varies based on how much the users trust the technology. Trust in a system of artificial intelligence determines how well an organization can leverage AI's capabilities. Higher trust increases effectiveness in AI's utilization, its assimilation into organizational processes, and even in the creation of new inventive AI business models. On the contrary, absence of trust could derail AI adoptions and also suppress the innovation potential of an organization (Bedué & Fritzsche, 2022). AI is considered to be crucial in the management of human capital and has the potential to change processes in talent management improving organizational productivity in marketing, customer relations, and project management. In addition to these, addressing biases, accountability, and transparency also pose as major moral problems AI has (Murgai, 2018).

There has been a call to examine the drivers of AI adoption and its impact on organizational performance from a contextual and inter-organizational lens (Rana et al., 2024). The use of technology, especially artificial intelligence (AI), has shown to benefit different kinds of companies, including micro, small, and medium enterprises (MSMEs). Integrating AI technology into daily operations has already begun to be commonplace with small businesses, according to the latest report from Small Business and Entrepreneurship Council (SBEC). The AI and MSMEs productivity gains have achieved substantial efficiency improvements and the saving of hundreds of billions of dollars annually. The SBEC survey in November 2023 noted that nearly half (48 percent) of small businesses started adopting AI in the past year, while 29 percent had been using it for one to two years (CNN, 2024).

A 2020 Kearney report further highlights that the implementation of AI in Southeast Asia will have a projected impact of USD 1 trillion on the region's GDP by 2030. For Indonesia, the anticipated contribution of AI is projected to reach USD 366 billion, accounting for 12% of the national GDP by the same year. This figure underscores the tremendous prospects for MSMEs leveraging AI to enhance their competitiveness (Kurniawan, 2024). The current research aims to fill the gaps left by prior studies on the impacts and factors associated with AI adoption. From the research conducted on trust in AI adoption (Al Qahtani & Alsmairat, 2023), which later influences innovation (Panigrahi et al., 2023; Rana et al., 2024) and organizational performance (Chen et al., 2023; Salah & Ayyash, 2024), this study formulates a comprehensive research model. This research study looks into the adoption of AI in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, which is an understudied region from an empirical perspective. There have been studies on the adoption of e-commerce in different regions, including Palestine (Salah & Ayyash, 2024).

However, the subject of AI adoption, especially for the development of MSMEs, is still under researched. Most of the available literature is on the hospitality industry, which has been focused on the coping strategies with the COVID-19 pandemic. This industry has been undergoing tremendous difficulties because of the widespread unemployment and a shrinking economy. A big part of the hospitality industry turned to AI for contactless services during the pandemic in order to improve productivity and protect customers (Chen et al., 2023). These services, along with the internet and e-business, became popular, perhaps, because they are easy to use (Haque et al., 2024). By deepening our understanding of the role of trust regarding the use of AI and its effects on business innovation and performance, the study contributes to the consideration of AI in enhancing business optimization.

The study focuses on the dimensions of user trust and its relationship with innovation and performance in the business setting. The outcomes are expected to assist management and business strategists in developing more efficient targets concerning AI in business operations. These are divided into five interconnected parts. The first two parts are reserved for the development of the conceptual framework and formulation of the hypothesis. The description of the research methodology used in the study is in the third section. In the fourth section, the results of the research are presented and discussed, including results from the SEM-PLS model analysis. The final section presents the conclusions and study-based recommendations.

2. LITERATURE REVIEW

2.1. Trust as a Precondition for Technological Integration

The integration of artificial intelligence (AI) in organizations is becoming commonplace; however, building trust in AI remains a crucial area of study. This trust is built as a consequence of the system's dependability, clarity, and ethical processes which form the basis of the user's perception (Bedué & Fritzsche, 2022). In line with the Technology Acceptance Model (Davis, 1989), trust can be conceptually integrated with perceived usefulness and ease of use, both of which significantly shape behavioural intentions toward technology (Al Qahtani & Alsmairat, 2023; Salah & Ayyash, 2024). As noted by Mou et al. (2017), trust encompasses willingness to incur vulnerability anchored on some degree of reliability around outcome optimization of system function over time. In other words, trust encompasses more than usefulness. Trust, in practical terms, is shaped by issues of data privacy, algorithmic discrimination, and accountability on actions taken (Chen et al., 2023). Positive perception of trust, in this case, can result from lack of negative governance, unethical use of data, and poor communication. Thus, for MSMEs in emerging economies such as Indonesia, trust in AI is additionally conditioned by cultural and institutional contexts. Trust can be amplified or dampened by communal norms, vertical organizational structures, and information gaps. Trustworthiness of AI must, therefore, be contextualized in terms of local notions of credibility, perils, and governance frameworks (Salah & Ayyash, 2024).

2.2. AI Adoption: Drivers and Challenges in Organizational Settings

Acquiring a new technology, such as AI, is just the first step; the technology must also be seamlessly integrated into the processes, culture, and strategy of the organization (Panigrahi et al., 2023). To analyze the organizational acceptance of AI, the Technology-Organization-Environment (TOE) framework identifies technology readiness, organizational culture, and outside pressures as interdependent factors (Chen et al., 2023). For micro, small, and medium-sized enterprises (MSMEs), the adoption drivers often include overriding perceived business value, the potential of automation, and the forecasted increases in operational efficiency (Agarwal, 2023). From a cognitive perspective, AI brings significant advantages, including automation of mundane and repetitive tasks, enhanced analytics, and real-time decision support (George & Thomas, 2019). Such capabilities not only allow firms to enhance innovation, but also improve business models, customer engagement strategies, and value-added services. However, adoption is not smooth for all firms. MSMEs face a confluence of capability gaps, financial constraints, and change resistance, which can be systematically addressed but require bespoke strategies to resolve. This progression is described as the diffusion of innovation, which is explained by constructs such as relative advantage, compatibility, and trialability (Rogers, 1983). With each of these innovations, there comes a set of early adopters within the organization which often serve as change agents, providing social proof and diminishing the uncertainty/shame of adoption. For the adoption of AI to evolve, there must be alignment with key performance indicators, workflow integration, and embedded continuous climate for organizational learning.

2.3. Innovation as a Mediator of Performance Outcomes

As a mediating factor between the shift in technology and an organization's performance, innovation is the transformation of new ideas into goods and services of worth (Calik et al., 2017). **In AI contexts, innovation is not only technical but also organizational** it reshapes workflows, redefines roles, and alters value propositions. AI-driven innovation can be incremental (e.g., efficiency gains) or radical (e.g., new markets), depending on organizational readiness and leadership commitment (Brynjolfsson & McAfee, 2014). In MSMEs, innovation is pivotal for both sustenance and expansion. Such enterprises are likely to function in unpredictable environments which require constant change in response to external factors. Research indicates that innovation capabilities, when strengthened through AI adoption, lead to improved agility, differentiation, and responsiveness (Agarwal, 2023; Salah & Ayyash, 2024).

2.4. Rethinking the AI–Performance Nexus

Organizational performance is frequently positioned as the ultimate outcome of technological adoption. However, empirical studies increasingly show that the relationship between AI and performance is mediated by innovation and moderated by organizational readiness (Ransbotham et al., 2017). Performance indicators such as revenue growth, process efficiency, and customer satisfaction are not direct results of AI use, but rather of how effectively AI enables novel capabilities within the

firm. In the case of MSMEs, the performance impact of AI depends on several contingent factors: digital infrastructure, human capital, managerial foresight, and institutional support. Therefore, the attempted linear framework of "AI results in performance" overlooks the intricacy of such relationships. The adoption of AI technologies takes place in a specific social and technical environment and is supported by trust, innovations, as well as other specific contextual factors (Alyahyaei et al., 2020; Chen et al., 2023). As shown by Figure 1, this is the constellation included in this research.

H1: Trust has an effect on AI Adoption.

H2: AI Adoption has an effect on Innovation.

H3: AI Adoption has an effect on Organizational Performance.

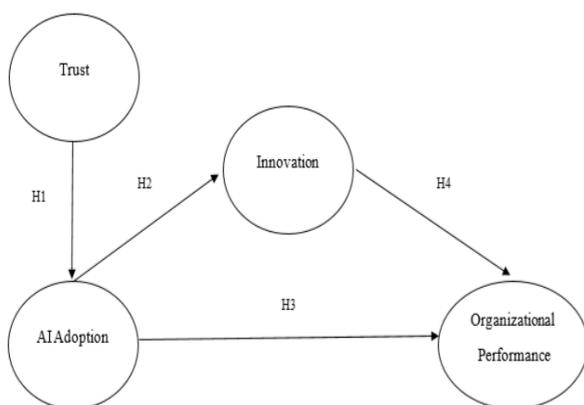H4: Innovation has an effect on Organizational Performance.

Figure 1: Research Model.

3. METHODS

In this study, a descriptive quantitative approach is combined with using Structural Equation Modeling with Partial Least Squares (SEM-PLS). The quantitative descriptive method solves problems by systematically and objectively portraying a phenomenon, and then collecting perceptions and experiences in a numerical manner. SEM-PLS is a variance-based technique especially useful for exploratory research that seeks to understand deeply embedded complex causal relationships, often with underdeveloped theoretical frameworks. This applies to assessing the effect of trust in AI utilization on innovation and performance and organizational productivity in Micro, Small, and Medium Enterprises (MSMEs) (Ghozali, 2021; Sekaran & Bougie, 2020). Indonesia has been primarily focused on due to the significant role that Micro Small and

Medium Enterprises (MSMEs) Impact on the employment and GDP of the country (Shaivudi & Pahlevi, 2023). In order to capture the full range of MSMEs, the study utilized purposive sampling to ensure the informants had the appropriate expertise and participation related to AI technology. Despite the advantages that purposive sampling brings, such as capturing specific information and knowledge which is in alignment with the study's goals, there is risk of sampling bias and limited generalizability. Due to the non-random nature of the sample, the findings are limited to the context of Indonesian MSMEs. In order to address the issue of generalizability, purposive sampling was stratified across geography in the ten primary MSME hubs to ensure that the sample was balanced and that the respondents represented varying and spread out business and cultural conditions and environments (Putri, 2023).

The final sample had 357 MSME participants from all regions of Indonesia. Respondents were chosen based on cellular as decision-makers or key officers with practical contacts with technology adoption within their organizations. Such selection criteria were meant to make sure that the information collected was relevant and grounded to practice. In measuring the latent variables, the validated tools with previous literature were modified. Trust was measured with a four item scale of Chi et al., (2021) and Mou et al., (2017) concerning the AI systems' trustworthiness and its functionalities. For AI adoption, a four-item scale from Agarwal (2023) and Rana et al., (2024) focusing on the integration of AI technology into business processes was used. Innovation was measured using a four-item scale from Alyahyaei et al., (2020) and Calik et al., (2017) that captured a firm's propensity towards the continual improvement of its products and processes.

Organizational performance was measured with a four item scale by Alyahyaei et al., (2020) and Garg et al., (2004) on the firm's finances, operations, and customer performance. All metrics were captured through a Likert scale, totaling a comprehensive questionnaire with 16 items. The questionnaire was administered both online and offline, depending on regional accessibility and respondent preferences. Adhering to strict ethical boundaries, the study was reviewed and approved by the relevant institutional ethics committee, participants were briefed on the details, and informed consent was collected assuring confidentiality with the data, alongside the ability to withdraw at any given point.

Moreover, considering the sociocultural

dimensions of trust and the adoption of technology, special care was taken to adapt the measurement instruments to the context of Indonesian MSMEs. In Indonesia, where communal norms, interpersonal relationships, and hierarchical structures often shape organizational behaviour, trust is not merely an individual cognitive judgment but also a socially constructed phenomenon (Bedué & Fritzsche, 2022). To reflect this, the trust and AI adoption constructs were linguistically and contextually pre-tested to ensure cultural appropriateness and semantic equivalence, thus enhancing the validity and reliability of the instrument in capturing culturally relevant dimensions of trust and technological readiness.

4. RESULTS

4.1 Distribution of the Respondents

Table 1 presents the distribution of respondents based on their social positions and demographic characteristics as obtained from the survey. Out of the total respondents, approximately 114 are female and 243 are male. Additionally, 306 respondents are married, accounting for 85% of the sample. In contrast, about 51 respondents are single, representing 14%, and roughly 7 are divorced, making up 1%.

The duration of business operations among these micro, small, and medium-sized enterprises (MSMEs) is as follows 137 respondents (38%) have been in business for one to three years, 101 respondents (28%) for four to six years, 59 respondents (16%) for seven to ten years, and sixty respondents (18%) for more than ten years. Furthermore, the data reveals that 221 respondents, which constitutes 62% of the total, have completed their education up to the level of high school, 71 respondents, which constitutes 20% of the total, have obtained a Diploma, 53 respondents, which constitutes 15% of the total, hold an undergraduate degree, and 12 respondents, which constitutes 3% of the total, have earned a graduate degree.

Table 1: The Respondents' Social Status Distribution, According to the Distribution of the Responses.

Profile		Frequency	Percent
Sex	Male	243	68
	Female	114	32
Marital status	Married	306	85
	Single	51	14
	Divorce	7	1
Length of business	1-3 years	137	38
	4-6 years	101	28
	7-10 years	59	16
	>10 years	60	18
Level of education has been completed	Senior High School	221	62
	Diploma	71	20
	Undergraduate	53	15
	Graduate	12	3

4.2. Measurement Model

The measurement model was assessed by Confirmatory Factor Analysis (CFA) as described by Hair et al. (2014). This study specifically evaluated the measuring model by analysing content validity, convergent validity, and discriminant validity. Content validity was established by reviewing pertinent literature and doing early evaluations of the instrument, resulting in the removal of certain questions due to poor overall item correlations. As observed by Hair et al. (2014), the computation of factor loadings alongside Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) must be done before assessing convergent validity.

It is also recommended that Cronbach's alpha, the composite loadings, and CR must be greater than 0.7 and AVE greater than 0.5. All measurements need to be within the acceptable range (Ghozali, 2021; Hair et al., 2014). Looking at the data provided in Table 2, we observe that both Cronbach's alpha and composite reliability values exceeded 0.7, and the AVE for all constructs exceeded 0.5. This confirms strong convergent validity.

Additionally, discriminant validity assessment evaluates the extent to which questions differentiate across various conceptions or assess separate concepts (Ghozali, 2021; Hair et al., 2014). To ascertain discriminant validity, the study juxtaposed the correlation of each construct with other components against the square root of its Average Variance Extracted (AVE).

A measurement model is deemed appropriate if

the square root of the Average Variance Extracted (AVE) for each construct exceeds its correlation with other constructs, as illustrated in the respective rows and columns (Ghozali, 2021; Hair et al., 2014). The findings presented in Table 3 validate that the measurement model attains sufficient discriminant validity.

Table 2: The Result of the Measurement Model.

Constructs	Items	Loading factors	Cronbach's Alpha	Composite reliability	AVE	Adapted from
Trust	My overarching philosophy is to place trust in new technology until they demonstrate a lack of reliability (T1)	0,971	0,980	0,985	0,943	(Chi et al., 2021; Mou et al., 2017)
	I typically place my trust in technology until it provides a justification for distrust (T2)	0,964				
	I believe AI is effective in helping us find various information that is useful for the organization (T3)	0,971				
	In general, AI is a very knowledgeable information provider (T4)	0,979				
AI Adoption	Our organisation possesses the capability to utilise AI (AA1)	0,976	0,981	0,986	0,946	(Agarwal, 2023; Rana et al., 2024)
	Our organisation is poised to augment its utilisation of AI (AA2)	0,957				
	AI adoption drives the integration of all existing functions within an organization (AA3)	0,978				
	AI adoption reduces overall costs for organizations (AA4)	0,978				
Innovation	We consistently enhance our products and processes. (IN1)	0,954	0,978	0,984	0,937	(Alyahyaei et al., 2020; Calik et al., 2017)
	We investigate unconventional and innovative approaches of conducting business (IN2)	0,975				
	We systematically conduct observations and engage in brainstorming to identify improved techniques for operating our business. (IN3)	0,974				
	We seek methods to enhance the value of our current products/services to distinguish our business from competitors. (IN4)	0,969				
Organizational Performance	Our organization's profitability is demonstrated by its enhanced revenue and net profit (BP1)	0,949	0,973	0,980	0,926	(Alyahyaei et al., 2020; Garg et al., 2004)
	Our organisation consistently accomplishes its objective of optimising its cost structure (BP2)	0,959				
	Our market share is expanding, as seen by the rising number of new consumers (BP3)	0,971				
	We infrequently encounter lost or diminished orders (BP4)	0,969				

Table 3: Discriminant Validity of Constructs.

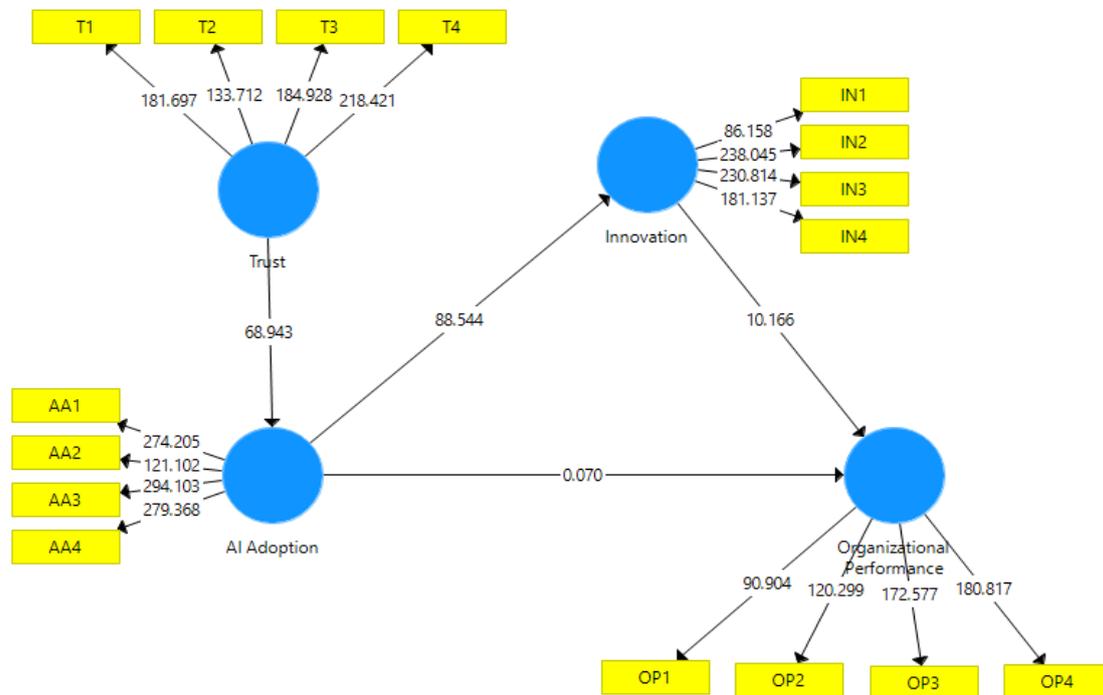| Constructs	Diversity Management	Employee Performance	Innovative Work Behavior	Working Environment
AI Adoption	0,972			
Innovation	0,964	0,968		
Organizational Performance	0,938	0,973	0,982	
Trust	0,947	0,926	0,914	0,971

4.3. Hypothesis Testing

Figure 2: Structural Model.

Figure 2 illustrates the statistical importance of the independent variable, namely trust, on the dependent variables of AI adoption, innovation, and organisational performance via t-statistics. Table 4 provides a summary of the p-value results.

Table 4: Path Coefficients among Latent Variables.

No	Path	β	T Statistics	P-Value	Significance
1	Trust → AI Adoption	0.947	68.943	0.000	Significance
2	AI Adoption → Innovation	0.964	88.544	0.000	Significance
3	AI Adoption → Organizational Performance	0.007	0.070	0.944	Not Significance
4	Innovation → Organizational Performance	0.966	68.943	0.000	Significance

Table 4 presents the study's results, confirming hypothesis 1, which posits that trust influences AI adoption (p = 0.000). Additionally, hypothesis 2 is supported, showing that AI adoption impacts innovation (p = 0.000). In contrast, hypothesis 3 is not supported, as AI adoption does not affect organizational performance (p = 0.944). Finally, hypothesis 4 is validated, indicating that innovation affects organizational performance (p = 0.000).

5. DISCUSSION

The findings of the first hypothesis indicate that trust significantly influences AI adoption. This result is consistent with previous studies that emphasize the foundational role of trust in determining the extent of AI integration in organizations (Agarwal, 2023; Al Qahtani & Alsmairat, 2023). Trust denotes user confidence that an AI system is dependable, guaranteed against exploitation, and operates with

unambiguous explicability (Gefen et al., 2003). On the other hand, low trust usually results in user resistance and is usually linked to algorithmic bias, wrong data, or some other ethical concern (Rana et al., 2024).

As far as Rai et al. (2019) is concerned, organizations that trust an AI system tend to use it in their operations to a greater degree. Education or familiarity with the system, together with how openly it functions, enhances trust as noted by Lee and See (2004). Findings from the second and fourth hypotheses underscored the pronounced and beneficial impact of adopting AI technologies on innovation, which subsequently enhances organizational performance. This trend supports the increasing literature

AI adoption is viewed as a strategic innovation driver (Al Qahtani & Alsmairat, 2023; Salah & Ayyash, 2024). AI's ability to automate, and analyze vast data efficiently while providing complex solutions previously unattainable is valued (Brynjolfsson & McAfee, 2014). In the same manner, Davenport and Ronanki (2018) assert AI boosts innovation processes and data driven decisions as well as minimizes errors. Huang and Rust (2018) further AI enhances human ingenuity, providing algorithmic insights which intelligently guide product design. Clearly, AI's innovation capabilities are well documented, both intellectually and in practice. Consequently, we see how innovation becomes a central factor of organizational performance. Businesses that invest heavily on innovation are likely to be more effective in operation, more effective in valuing perceptions, and far more successful in value creation for their customers when compared to their rivals (Agarwal, 2023).

This strengthens the proposition on innovation serving as the mediating factor in the relationship between AI adoption and improved organizational performance. As Salah and Ayyash (2024) explain, businesses that invest heavily on innovation are at times capable of outmatching all their rivals in long term business sustainability and the achievement of strategic business targets. Nonetheless, the third hypothesis analyzing the direct effect of AI adoption on organizational performance received no backing. Unlike other studies which found a direct link between AI adoption and performance growth, such as Brynjolfsson et al. (2017) and Huang and Rust (2018), our findings indicate that no such impact exists, at least with regard to the Indonesian MSMEs. One explanation is the AI adoption maturity arc of these enterprises.

A majority of Indonesian MSMEs stand to gain from AI adoption are at the low to mid-levels of the adoption maturity arc, a stage defined by minimal strategic integration, limited functionality, and pilot projects. The MSMEs' early stage operational focus hinders the anticipated progress in performance metrics with the adoption of AI which is only realized when AI frameworks are integrated with other systems in the business operations and systems.

The extent of the performance-transforming capabilities of AI is noted to be contingent of the structural and technological resources of the firm by top management, innovation, and the culture of the firm, which in the case of MSMEs, is likely very weak (Ransbotham et al., 2017). From this viewpoint, the 'lack of significant impact' of AI adoption in MSMEs can be mitigated to absence of adequate infrastructure to support the technology. Strategies aligned with AI must be proactive, otherwise lack of innovation could lead to misalignment and result in neither productivity nor profit increases. AI implementation, in the same breath, calls for technological integration and an aligned strategy coupled with strong management support, positive market responsiveness, and endorsement, as noted by Abdeldayem and Aldulaimi (2020).

Organizational preparedness, as emphasized by Chen et al. (2023), is foundational to AI implementation if results are to be realized. In this context, the study outlines the core importance of innovation as the mechanism AI pours its potential in the area of organizational results. AI does not seem to duplicate the performance gains; its essence appears to be in the value enhancement of the capabilities for the innovation processes that yield improved performance later. This appreciation deepens the understanding of the drivers that enable the organization to gain competitive advantage through adoption of AI.

6. CONCLUSION

How trust is placed on the use of Aritifical intelligence technology impacts its adoption, as well as the innovation and organizational performance. Usually, trust in any given AI system increases organizational adoption in its use. The use of AI systems, especially within an organization, fosters an inventive atmosphere as new products and services are created, which increases organizational creativity and performance. All these findings point to the need of AI technology adoption especially for Micro, Small and Medium Enterprises (MSMEs) aimed at innovation in their products or services for better

business performance. In addition, AI technology adoption by itself is not likely to lead to performance improvement. So, it is advisable for MSMEs to strategically use AI technology in ways that ensure their commercial innovations enhance organizational performance.

This research has two theoretical ramifications. The intelligent use of AI technologies can foster innovation and boost the performance of MSMEs. This contribution has significance in resolving the gaps of previous research by forming a complete model which positions trust as a prior element of AI adoption and examines the effects of AI adoption on innovation and organizational performance.

The second contribution is the absence of a direct relationship between the AI deployment and the organizational performance provides great value for all MSMEs actors. It indicates that in the absence of the use of AI as a tool for organizational innovation, improvements in organizational performance are unlikely. Therefore, this underscores the sufficiency of controlling AI in order to drive innovation which consequently results in competitive value that enhanced the performance of MSME enterprises. This study's practical consequences entail fostering trust and improving the business preparedness of MSME stakeholders by promoting investments in AI technology to facilitate innovation or company revitalisation.

Micro, Small, and Medium Enterprises (MSMEs) can integrate artificial intelligence via websites, social media, and e-commerce platforms, thereby enhancing market reach, augmenting visibility, and facilitating effective financial record-keeping. Moreover, permitting clients to execute online payments can stimulate revenue expansion. It is essential to customise the deployment of technology to the distinct requirements and capabilities of MSMEs to guarantee its efficient use.

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