

The Role of Artificial Intelligence in Enhancing Creative and Financial Performance in the Creative Sector

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Abstract

This research aims to investigate how Artificial Intelligence (AI) integration enhances creative productivity and leads to improved outcomes in financial performance. The advancement of technology enables the improvement of knowledge sharing, absorptive capacity, skills, and innovation, fostering greater efficiency in achieving organizational goals. This pioneering research develops a holistic framework that integrates AI as a moderating factor, highlighting its transformative role in achieving a competitive advantage. A sample of 499 MSMEs in the Indonesian creative sector was obtained from a total of 34,000 HIPMI members through purposive and judgment sampling methods. Using the scrutinize method, this study provides an in-depth analysis of the interactions between technological advancements and organizational capabilities, offering strategic insights for sustainable growth. Regression analysis results indicate that knowledge sharing, absorptive capacity, skills, and innovation have a significant and positive effect on the creative performance. AI also has a significant positive impact on financial performance. The integration of AI strengthens the association between innovation and creative performance, but it does not reveal a substantial impact on the link of knowledge sharing, absorptive capacity, and skills with creative performance. This study provides theoretical and practical contributions to support decision-making in technology policy in the creative sector.

Keywords: *Knowledge Sharing, Absorptive Capacity, Skills, Innovation, Creative Performance, Artificial Intelligence.*

Introduction

The fast evolution of technology opens up numerous new possibilities for both small and large enterprises (Neumeyer & Liu, 2021). Digitalization is a major trend that might threaten business models, while simultaneously holding the potential for broader opportunities (Carayannis *et al.*, 2006). The evolution of digital solutions has a disruptive consequence, compelling businesses to reevaluate their business models. Similar to how the ease of communication availability (Carayannis *et al.*, 2006; Iddris, 2018; Solberg *et al.*, 2020) significantly enhances efficiency and effectiveness. Both in the short and long term, digital technology emerges as an essential source of competitive advantage (Neumeyer *et al.*, 2021; Neumeyer & Liu, 2021). Micro, Small, and Medium Enterprises (MSMEs) act as an essential component and dynamic driving force accountable for the majority of innovation, job creation, and national economic growth (Carayannis *et al.*, 2006; Bouwman *et al.*, 2018). Nevertheless, MSMEs have not completely utilized the potential of digital technology, including employee capacity, skills, and funding (Carayannis *et al.*, 2006; Li *et al.*, 2018; Bouwman *et al.*, 2019; Neumeyer *et al.*, 2021).

The growing technological change has led to the emergence of various proficient systems, one of which is Artificial Intelligence (AI). AI denotes software, algorithms, systems, and machines that exhibit intelligence (Shankar, 2018) that replicate human intelligent behavior (Davenport & Kalakota, 2019). In recent times, AI has infiltrated the creative industry, including SMEs, by accurately assessing data, extracting insights from it, and providing flexible alterations that promote diverse innovation (Haenlein & Kaplan, 2019). The implementation has the potential to enhance the efficiency of divisions in organizations by 35-55% (McKinsey).

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The creative industry is among the industries that bolster economic growth by distinguishing cultural and national activities across different countries (Evans & Hudson, 2005). According to Howkins (2001), it represents an economic activity characterized by ideas being the input and output. In the meantime, Harwiki & Malet (2020) highlight economic, social, and cultural dimensions as vital ingredients that support the creative industry in the community. Typically, the creative field accelerates job engagement, strengthens social cohesion, heightens economic activity (Ghazi & Goede, 2018), and provides understanding of worldwide economic shifts, especially in innovation (Jones *et al.*, 2016). Consequently, many countries strategically support the creative economy movement (Lafzi Ghazi & Goede, 2017). In the same way, the local creative industries possess significant potential for development and can contribute to local economic growth nationwide (Hou *et al.*, 2019).

As noted by the Ministry of Tourism and Creative Economy (2021), the creative industry sub-sector in Indonesia contributed Rp1,153.4 trillion to GDP in 2019, which accounts for 7.3% of the total National GDP, 15.2% of the workforce, and 11.9% of exports. Indonesia is acknowledged as one of the most passionate and fast-growing emerging economies (Terry & Grünhagen, 2017) with unique features in comparison to other developing countries (De Beukelaer, 2017). The diversity of islands, hundreds of ethnic groups and languages, along with cultural heritage, provide opportunities for exploration in the creative industry. More than 8.2 million Indonesian creative businesses are dominated by culinary, fashion, and craft enterprises. The subsector that includes film, animation, video, performing arts, and visual communication design is growing the most rapidly (Kemenparekraf, 2021). The rise in growth is backed by the growing embrace of digital technology within society.

The presence of MSMEs constitutes a vital segment of the creative industry in Europe (Manfredi Latilla *et al.*, 2018) and is seen as the leading engine of the creative sector in Indonesia (Kostini & Raharja, 2020). SMEs that concentrate on innovation are known as the creative industry. This sector pertains to the absorption and adoption of innovation and the advantages gained from its implementation. Nonetheless, certain economic players often overlook innovation due to its risky nature (Games & Rendi, 2019) and the lack of assurance it brings for enhancing organizational performance (Sivadas & Dwyer, 2000). Thus, professionals in the creative industry need to comprehend business dynamics to pinpoint strategies for enhancing business performance (Haggège *et al.*, 2017; Lückmann & Feldmann, 2017; Esmael *et al.*, 2018). They require appropriate strategies to improve skills (Shin *et al.*, 2015), service quality (Nikou *et al.*, 2020), and intellectual capital (Eidizadeh *et al.*, 2017) while taking into account sustainable competitive advantages (Anwar *et al.*, 2018).

One vital component of management involves knowledge sharing (Magnier-Watanabe & Senoo, 2009). With the organized intention of impacting knowledge transfer, implementation, and generation to produce value (Li *et al.*, 2009; Kozhakhmet & Nazri, 2017). The sharing of knowledge and innovation is crucial for organizational learning (Ahmad, 2018) and serves as a catalyst for value creation (Exposito & Sanchis-Llopis, 2018; Aboramadan *et al.*, 2020). Innovation may manifest as new products or services, new methods of production, or new systems or structures in administration (Hult *et al.*, 2004). SMEs obtain enhanced benefits through the development, communication, and implementation of an innovation orientation (Rosenbusch *et al.*, 2011). Innovation involves a complex and non-linear process that requires multiple company controls (Feeney & Pierce, 2018; Van der Kolk *et al.*, 2020). In addition, prior studies indicate that firms with strong absorptive capacity will promote innovation abilities (Daspit & Zavattaro, 2014; Nätti *et al.*, 2014; Bessant & Trifilova, 2017; Liu *et al.*, 2018).

Based on previous research, the innovation culture of MSMEs is too fragmented and needs to be consolidated (Wolf *et al.*, 2012; Bashir & Farooq, 2019). A significant portion of the studies concentrates on large corporations in countries like Greece (Chatzoglou & Chatzoudes, 2017; Kafetzopoulos *et al.*, 2019), Spain (Exposito & Sanchis-Llopis, 2018), Brazil (Teixeira *et al.*, 2019), and Malaysia (Hanifah *et al.*, 2019) generating findings that have been effectively implemented in other locations, but lack validation in Indonesia because of existing cultural diversity. Furthermore, employing AI within SMEs can aid in boosting productivity in business. This study also uses a positivist approach with an epistemological and ontological viewpoint instead of focusing on the nature of tacit knowledge.

Therefore, this research aims to explore the role of knowledge sharing, absorptive capacity, skills, and innovation in enhancing creative performance and its impact on financial performance in the moderating role of artificial intelligence, particularly in the creative MSME sector in Indonesia.

Literature Review

Social Exchange Theory

The social exchange theory illustrates the relationship between two parties that rely on each other (Blau, 2017). According to this theory, participation is based on the expectation of receiving a reward for the costs involved (Liao, 2008). Trust, loyalty, and shared commitment are the foundations upon which organizations are built (Cropanzano & Mitchell, 2005). Therefore, employees engage in fitting behavior (Eisenberger *et al.*, 1986; Yang, 2010), feeling responsible for contributing to the organization's success (Jaiswal & Dhar, 2016; Kurtessis *et al.*, 2017). Because of insufficient regulation, people depend on trust as a crucial element for cooperative behavior to validate the anticipated gains (Konovsky & Pugh, 1994; Blau, 2017; Luo, 2002). When employees have confidence in their leaders, they believe they can secure better long-lasting outcomes through working together (Ramaswami *et al.*, 1997).

Contingency Theory

The contingency theory states that all components of an organization must have compatibility or fit with one another. Nevertheless, as stated by Otley (1980) there is no control system that can be universally applied and is appropriate for every organization in all circumstances. Therefore, there are situational factors that influence a condition. Different conditions require a specific approach (Usman, 2016). In line with this theory, for the performance measurement system and the socialization process to be effectively implemented in the company, they need to be generalized by taking into account organizational and situational factors like individual behavior.

Resource Based View Theory

The Resource-Based View (RBV) theory is a management concept that suggests a company's resources and capabilities form the foundation for achieving a competitive edge and determining its overall performance (Wernerfelt, 1984). RBV is considered one of the most influential management theories, particularly within the context of strategic management. The theory states that successful businesses will compete in the future by cultivating distinct and original capabilities through the optimal deployment of assets and capital via strategic management. This is achievable if a company can retain, manage, and effectively utilise these assets and resources, thereby enhancing its competitive edge. The company's distinctive resources enable it to observe the evolution of organisational skills and experience over time through its organisational processes (Smitri & Das, 2018). Essential factors in developing creative concepts and innovative answers include employee skills, an innovation culture, AI technology, and the ability to assimilate new information. These resources empower firms to develop innovative concepts and original solutions that not only satisfy market requirements but also offer additional value distinct from that of their competitors. Organizations can establish a lasting basis for exceptional imagination by combining essential assets.

Management Control System

The management control system is essential for evaluating, measuring, and supervising the entire implementation process of total quality management and innovation (Antunes *et al.*, 2018). Seeks to equip managers with the information necessary to steer the company correctly and assist in managing employees to uphold suitable behavior patterns (Otley, 1980). This system is capable of improving organizational performance through skills (Gschwantner & Hiebl, 2016) and helps managers to be more attentive to the keys to success (Hoque, 2004). Unpredictable market conditions compel SMEs to innovate, frequently reassess approaches, and modify strategies to adapt to ever-changing environments while taking performance trends into account (Ates *et al.*, 2013; Bahri *et al.*, 2017). Yet,

limitations exist in terms of human resources, financial resources, structural organization, formal strategies, and the predominance of intuition in decision-making (Hudson Smith & Smith, 2007; Gleadle & Haslam, 2010; King *et al.*, 2010). Consequently, the management control system can direct the attention of managers and the company's internal resources to mitigate risks posed by external factors (Hoque, 2004; Widener, 2007; Pešalj *et al.*, 2018).

Levers of Control (LoC)

The role of control levers (beliefs systems, boundary system, interactive system, and diagnostic system) in managing change and developing new strategic initiatives within the company. These systems provide insights into the impact of strategic changes (Kober *et al.*, 2007), the association between top management professionalism and the interactive and diagnostic systems (Naranjo-Gil & Hartmann, 2006), along with the utilization of controls across the organizational life cycle (Su *et al.*, 2017). Belief systems are grounded in the fundamental values of the organization as reflected in its mission, vision, and business values (Tessier & Otley, 2012)). Senior managers utilize them to articulate and convey the organization's core values, objectives, and direction (Simons, 1994). Boundary Systems as the framework for defining innovation boundaries and exploring new opportunities (Simons, 1987). This control is categorized as values and norms or as procedures and rules. Interactive Control Systems emphasize uncovering new ideas within the organization, initiating new learning activities, and aiding in pinpointing an accurate future position (Simons, 1987). Diagnostic Control Systems stimulate, track, and compensate the realization of targets and strategies (Simons, 1987). LoC enhances performance and innovation (Baird *et al.*, 2019)

Knowledge Sharing

The value of knowledge as an organizational resource for gaining a competitive edge (Andreeva & Kianto, 2012), organizational capability (Alavi & Leidner, 2001; Prieto & Easterby-Smith, 2006), and the practice of spreading knowledge (Nguyen *et al.*, 2019). Knowledge sharing refers to a process where units affect each other through experience (Argote & Ingram, 2000) to produce new knowledge (van den Hooff & de Ridder, 2004). Nonaka *et al.* (2006) describe knowledge sharing as an ongoing learning process that encompasses the acquisition of new contexts, insights, and knowledge. Knowledge sharing encompasses the activities of offering ideas, suggestions, information, experiences, and expertise to fellow team members within the organization (Bartol & Srivastava, 2002). Activities related to knowledge sharing are crucial for enhancing a company's efficiency (Bavik *et al.*, 2018). The competitiveness of businesses is also influenced by effective knowledge sharing (Obeidat *et al.*, 2016) including aspects of innovation (Du Plessis, 2007).

Absorption Capacity

Absorptive capacity is defined as the potential of individuals inside an organization to create a suitable knowledge base, discern the importance of external information, make strategic decisions, and execute effective processes and organizational structures (Cohen & Levinthal, 1990). Nevertheless, Lane *et al.* (2006) argue that the concept restricts absorptive capacity to the role of knowledge, which fails to capture the complexity of the firm's structure. Zahra & George (2002) and Müller *et al.* (2021) built upon Cohen & Levinthal (1990) work by conceptualizing absorptive capacity as a multidimensional concept that includes acquisition, assimilation, transformation, and exploitation. Absorptive capacity can improve business performance directly (Xie *et al.*, 2018; Lo & Tian, 2020; Ortigueira-Sánchez *et al.*, 2020; Stelmaszczyk, 2020; Müller *et al.*, 2021) and also indirectly via innovation and mass customization capabilities (Liu *et al.*, 2018). Furthermore, absorptive capacity has been shown to boost innovation in the education sector (Lo & Tian, 2020), technology sector (Xie *et al.*, 2018), manufacturing (Stelmaszczyk, 2020), and in SMEs (Ortigueira-Sánchez *et al.*, 2020).

Skills

Globalization compels modern organizations to perpetually develop new types of competitive

advantage (March, 1991; Schulze, 2009). These conditions are reinforced by capabilities that include the pursuit of exploratory and exploitative activities (March, 1991). Exploitation is marked by search, discovery, experimentation, flexibility, variation, risk-taking, and innovation, whereas exploration encompasses refinement, implementation, efficiency, production, and selection (He & Wong, 2004). Tushman & O'Reilly (1996) highlight the significance of skills in attaining sustainable excellence, asserting that the evolutionary phase of all successful organizations consists of an extended duration of incremental changes alongside revolutionary changes initiated by environmental shifts. Consequently, it is essential to find the proper balance between exploration and exploitation, maintaining competitive capability in established markets while also creating new products and services for developing markets.

Innovation

In a fluctuating business environment, improvements in performance and productivity are required, with innovation acting as the driving force (Zhao *et al.*, 2013). The application of ideas, new discoveries, and the creation of new products or services along with managerial strategies, procedures, work methods, and technology comprise innovation (Chahal & Bakshi, 2015). In a complicated business environment, the pace and caliber of innovation are crucial for sustaining a competitive edge (Wang *et al.*, 2016a; Wang *et al.*, 2016b; Bari & Fanchen, 2017). Organizations that foster innovation have the ability to find new opportunities, technologies, capabilities, and knowledge assets for the firm (Tassabehji *et al.*, 2019). The findings of Hernández-Perlines *et al.* (2019) suggest that innovation performance may enhance a company's performance by 27,5%. Human resource management practices and knowledge sharing can improve innovation in small and medium-sized enterprises (Soto-Acosta *et al.*, 2017).

Performance of MSMEs in the Creative Sector

Organizational performance is viewed as a multidimensional concept, which is defined concerning the quality of organizational outcomes (Lakhal *et al.*, 2006). The performance of a business indicates the effectiveness of a company's management of its internal resources and its ability to adjust to the external environment (Knights & McCabe, 1997) showcasing the accomplishment of growth goals and objectives (Hult *et al.*, 2004). Utilizing both financial and non-financial measures is essential for making effective strategic decisions and evaluating long-term success (Avcı *et al.*, 2011). SMEs that possess innovative capabilities have the potential to enhance their business performance, while Freel (2000) did not observe this relationship. Previous studies have revealed the mutually dependent and reinforcing nature of the influence between innovation and business performance (Al-Ansari *et al.*, 2013). SMEs often overlook the opportunities and benefits that exist, such as the flexibility to tailor products and services to fulfill customer needs (O'Regan *et al.*, 2006). As a result, organizations should measure the level of effectiveness and efficiency achieved in several sectors.

Hypothesis Development

Knowledge is regarded as an important power for success (Akram *et al.*, 2018). Organizations that foster a culture of knowledge sharing exhibit greater innovation (Singh *et al.*, 2020) and impact the company's performance (Wang *et al.*, 2014). Knowledge sharing serves as a means of competitive advantage and value creation in both intra- and inter-organizational settings (Iqbal *et al.*, 2018). Sharing knowledge facilitates work and enhances process efficiency by exchanging pertinent information, practices, insights, experiences, preferences, and learning (Faroog, 2018). If the organisation effectively inspires and motivates employees to share knowledge, it will foster a positive organisational culture that values productive performance and knowledge (Iqbal *et al.*, 2018; Wang *et al.*, 2014)

H1: Knowledge Sharing has a positive impact on the Creative Performance of MSMEs in the Creative Sector

A company with absorptive capacity gains the advantage of boosting its ability to consistently innovate, and innovation is essential for the company's sustainability in gaining and keeping market share. (Cohen & Levinthal, 1990) assert that in management, absorptive capacity is defined as a company's proficiency

in acquiring, assimilating, and exploiting knowledge or information for commercial gain. This position can improve company performance (Lo & Tian, 2020; Müller et al., 2021; Ortigueira-Sánchez et al., 2020; Stelmaszczyk, 2020; Xie et al., 2018) , including the MSME sector, as seen in the studies by (Ortigueira-Sánchez et al., 2020) in Peru and (Müller et al., 2021) in Germany.

H2: Absorptive Capacity has a positive impact on the Creative Performance of MSMEs in the Creative Sector

Developing expertise in business strategy, marketing, and pre-innovation information systems while prioritizing these areas can enhance innovation capabilities and enable ongoing market success (Scott, 2014). Skills are consistently assessed using two dimensions, specifically exploration and exploitation (Chang *et al.*, 2011; Prange & Bruyaka, 2016; Zheng *et al.*, 2016; Chen & Su, 2017; Tsai & Wang, 2017; Benitez *et al.*, 2018; da Costa *et al.*, 2018). Employee engagement and skills are the primary factors driving organizational growth and performance. Furthermore, the connection between skills and innovation performance improves the overall performance of the company (Chang *et al.*, 2011; Costa *et al.*, 2018; Úbeda-García *et al.*, 2018). Firms looking to develop strategic skills in innovation must carry out all processes to improve output and overall performance.

H3: Skills has a positive impact on the Creative Performance of MSMEs in the Creative Sector

A company's ability to innovate can influence its business performance (Talke et al., 2011). Successful innovation is seen as a contributor to business performance across different industries and sectors (Zahra et al., 1999). The performance of SMEs and innovation exhibit a relationship that is mutually reinforcing and mutually dependent (Al-Ansari et al., 2013). Some researchers discover a beneficial association between innovation and the performance of SMEs (Keskin, 2006), in contrast to (Freel, 2000) who found no such relationship. Innovation has the potential to enhance competitive advantage and assist companies in enduring in the market (Gunasekaran et al., 2000; Jiménez-Jiménez & Sanz-Valle, 2011).

H4: Innovation has a positive impact on the Creative Performance of MSMEs in the Creative Sector

Artificial intelligence pertains to the emulation of human intelligence in machines, enabling them to behave humanely and possess the capability to learn, communicate, or carry out human tasks (Nguyen & Malik, 2021; Russell & Norvig, 2016). AI delivers tools and technologies that help SMEs with product design processes, data processing, and market analysis. By automating routine tasks, small business owners can focus more on innovative ideas and the development of new products. Moreover, AI offers in-depth and real-time analysis of consumer and market trends, enabling SMEs to develop products that are more relevant and attractive. AI also enhances teamwork and communication within groups. In other terms, AI not only boosts operational efficiency but also acts as an essential factor in enhancing creative performance in the MSME setting.

H5: Artificial Intelligence has a positive impact on the Creative Performance of MSMEs in the Creative Sector.

Maintaining performance advancement can be accomplished by distributing both general and specialized knowledge to employees within an organization via a variety of mechanisms, whether formal, informal, or using technology platforms or Artificial Intelligence. The growing use of AI has resulted in employees and customers reporting various effects from knowledge exchange (Gursoy et al., 2019; Malik et al., 2021). AI can offer deeper insights into preferences, allowing employees to talk about the best solutions to meet customer needs (Russell & Norvig, 2016). The collaboration of this concept allows employees to create more memorable and personalized experiences, which can lead customers to perceive a higher quality of service (Prentice & Nguyen, 2020) As a result, this can ultimately result in a rise in sales and organizational performance (Nguyen & Malik, 2021)

H6: Artificial Intelligence moderates Knowledge Sharing on the Creative Performance of MSMEs in the Creative Sector.

As a dynamic capability associated with knowledge utilization, absorptive capacity can preserve

competitive advantage (Mikalef & Gupta, 2021). The diversity of absorptive capacity levels is crucial for operational efficiency and the adoption of new technologies (Abou-Foul et al., 2023). Entities with elevated absorptive capacity can effortlessly recognize new opportunities and create value via cognitive technological capabilities (Mikalef et al., 2020). Therefore, the effectiveness of innovation largely relies on the absorptive capacity of the organization. Employing AI for knowledge intake includes internalizing customer data and routing it into machine learning models to form more intricate consumer profiles, enhanced insights, more personalized propositions, and enriched customer experiences (Wilson et al., 2018).

H7: Artificial Intelligence moderates Absorptive Capacity on the Creative Performance of MSMEs in the Creative Sector.

Technology based on artificial intelligence has the capability to improve skills while incurring no physiological or psychological costs (de Ruyter et al., 2020). The necessity of introducing gradual changes in conjunction with revolutionary changes is evident, owing to environmental fluctuations from widespread technological progress. Balanced skills can improve the consumer experience, promoting higher subscription intent and more actual consumption. Employing AI, including chatbots, can harness algorithms, live access to customer data, and advanced computing power to identify cross-selling or quick sales prospects. Consequently, skills moderated by AI will deliver an experience to customers that influences sales and enhances performance (Fan & Liu, 2021)

H8: Artificial Intelligence moderates Skills on the Creative Performance of MSMEs in the Creative Sector.

The extent to which companies use artificial intelligence can affect a nation's innovation (Agrawal et al., 2019). Usinesses that commit to the advancement and successful utilization of artificial intelligence can catalyze innovation, improve efficiency, decrease costs, raise product quality (Perifanis & Kitsios, 2023) and encourage productivity and performance improvements (Marino et al., 2023). This can foster innovation in multiple sectors and aid in the growth of overall performance. Moreover, the McKinsey Global Institute states that the economic potential of AI is vast and can contribute to considerable productivity and value creation.

H9: Artificial Intelligence moderates Innovation on the Creative Performance of MSMEs in the Creative Sector.

The creative potential of a firm can affect its overall business (Talke et al., 2011). Various areas can facilitate the progress and development of an organization in evaluating its effectiveness and efficiency (Kafetzopoulos et al., 2019). Innovation that succeeds is seen as a contributor to improved business performance in various industries (Zahra et al., 1999). Furthermore, they can reinforce the organisation's competitive advantage and support the company's survival in the market (Gunasekaran et al., 2000; Jiménez-Jiménez & Sanz-Valle, 2011). As a result, delivering quality performance is crucial for individuals in the creative sector to ensure sustainable development.

H10: Creative Performance has a positive impact on the Financial Performance of MSMEs in the Creative Sector

Conceptual Framework

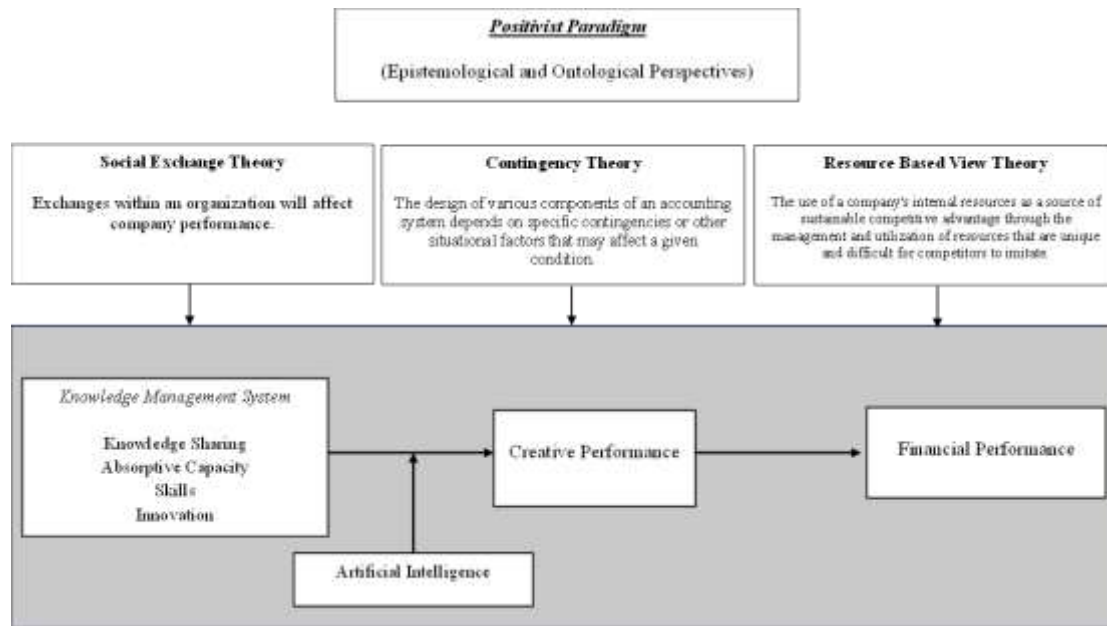


Figure 1. Conceptual Framework

Research Method

Population and Sample

This study aims to test hypotheses that clarify the nature of specific relationships, focusing on the differences between groups or the independence of two or more variables (Sekaran & Bougie, 2016). This study's population includes 34,000 members of the Indonesian Young Entrepreneurs Association (Himpunan Pengusaha Muda Indonesia/ HIPMI) involved in both creative and non-creative sectors. Using a purposive sampling method of judgment sampling type, criteria were set for SMEs in the creative sector (16 sub-sectors), resulting in a total of 499 data points collected. The method of data collection involved primary data gathered from questionnaires that contained a structured set of questions, featuring both multiple-choice and open-ended formats. This research employs a Likert scale ranging from 1 to 5, with a score of 1 reflecting strong disagreement and a score of 5 reflecting strong agreement.

Formulation of Indicators

The performance of the creative industry is assessed by comparing its score to the overall performance score of the creative industry, which is based on several indicators. The collection of indicators relies on the Global Innovation Index, Malcolm Baldrige, Balance Scorecard (BSC), and several earlier research results. Based on recent developments in the field of artificial intelligence (AI), we examine what type of human labor will be a substitute versus a complement to emerging technologies. We argue that these recent developments reduce the costs of providing a particular set of tasks – prediction tasks. Prediction about uncertain states of the world is an input into decision-making. We show that prediction allows riskier decisions to be taken and this is its impact on observed productivity although it could also increase the variance of outcomes as well. We consider the role of human judgment in decision-making as prediction technology improves. Judgment is exercised when the objective function for a particular set of decisions cannot be described (i.e., coded). However, we demonstrate that better prediction impacts the returns to different types of judgment in opposite ways. Hence, not all human judgment will be a complement to AI. Finally, we show that humans will delegate some decisions to machines even when the decision would be superior with human input (Meek *et al.*, 1995; Dawes, 1999;

Paige & Littrel, 2002; Merhant Van der Stede, 2007; Asikhia, 2010; Wingwon, 2012; Karacaoglu *et al.*, 2013; Mason *et al.*, 2015; Exposito & Llopis, 2018; Gali *et al.*, 2020). By investigating each indicator thoroughly (*scrutinizing*), we gather indicators that share the same meaning for combination. We held a Focused Group Discussion (FGD) to collect insights from practitioners and experts via content validity testing. As a result, 10 performance indicators for the creative industry were attained.

Table 1. Creative Performance Indicators for MSMEs in the Creative Sector

No.	Creative Performance Indicators for MSMEs
1	Do you agree that your business sales have increased over the past three years due to innovation?
2	Do you agree that your business's burden or expenses have decreased over the past three years due to innovation?
3	Do you agree that the production capacity of your business has increased over the past three years due to innovation?
4	Do you agree that the production quality of your business has improved over the past three years due to innovation?
5	Do you agree that your product enhances the value of the organization in the products produced?
6	Do you agree that your product incorporates elements of local culture in the produced goods?
7	Do you agree that the cultural elements in your product are more important than the financial profits you gain?
8	Do you agree that expressing creativity in your product is more important than the financial profit you gain?
9	Do you agree that your business has adopted the use of technology in the production process?
10	Do you agree that your business has its own brand?

Table 2. Knowledge Sharing Indicators

No	Knowledge Sharing Indicators
1	Do you agree that your company often shares information and knowledge at work?
2	Do you agree that your business has used information technology to share information and knowledge in the workplace?
3	Do you agree that your efforts have demonstrated good teamwork through sharing information and knowledge?

Source: Liao (2008), Teixeira *et al.* (2019)

Table 3. Absorption Capacity Indicators

No	Absorption Capacity Indicators
1	Do you agree that your employees often collaborate to hone their skills and acquire new knowledge?
2	Do you agree that your employees often engage in discussions?
3	Do you agree that your employees often collaborate or work together with other creative sector SMEs?
4	Do you agree that employees occasionally consult with third parties, whether consultants or the government, regarding the development of MSME businesses?
5	Do you agree that your employees have an understanding of the business environment?
6	Do you agree that your employees are capable of reading market opportunities?
7	Do you agree that the employees are capable of analyzing market changes?
8	Do you agree that your employees have prepared the skills and knowledge for the future (marketing/business/etc.)?
9	Do you agree that your employees are very aware of the importance of knowledge (marketing/business/etc.)?
10	Do your employees always carefully consider and plan the launch of new products or services?
11	Do you agree that your employees are responsive to consumer demands?
12	Do you agree that your employees have a clear division of tasks and responsibilities?
13	Do you agree that your employees have strategies for developing knowledge and skills as well as obtaining useful information for the business?

Source: Müller *et al.* (2021)

Table 4. Skill Indicator

No	Skill Indicator
1	Do you agree that your business has experienced economies of scale? (For example, increased turnover, increased sales, etc.)
2	Do you agree that your business has improved product development and expanded marketing reach to customers?
3	Do you agree that your business has implemented cost-cutting or cost-reduction measures in its internal business processes?
4	Do you agree that your business has the motivation to create new products or services?
5	Do you agree that your business creates new products or services in the local market?
6	Do you agree that your business engages in massive marketing of products and services?

Source:

Table 5. Innovation Indicator

No	Innovation Indicator
1	Do you agree that your business has developed a new product?
2	Do you agree that your business always has creative ideas in production process innovation?
3	Do you agree that your efforts in developing a knowledge management system within the company? (Knowledge management system is the management of knowledge needed by employees to enhance their skills in assisting the organization)
4	Do you agree that your business is always developing marketing methods?

Source: Saunila *et al.* (2014), Soto-Acosta *et al.* (2017)

Table 6. Artificial Intelligence Indicator

No	Artificial Intelligence Indicator
1	Do you agree that your business uses artificial intelligence when predicting customer needs?
2	Do you agree that your business uses artificial intelligence when conducting marketing promotions?
3	Do you agree that your business's use of artificial intelligence or AI increases brand awareness?
4	Do you agree that your business uses Artificial Intelligence or AI in personalizing marketing activities for specific customers or individuals?

Source: Wedel *et al.* (2020), Luo & Bo (2020)

Statistical Data Analysis

The testing data analysis technique employs the Partial Least Square (PLS) method. The model implemented is a causal model or path analysis. The technique employed for model fit analysis to test the hypothesis is Structural Equation Modeling (SEM) utilizing SMARTPLS 3.0.

Results of Analysis and Discussion

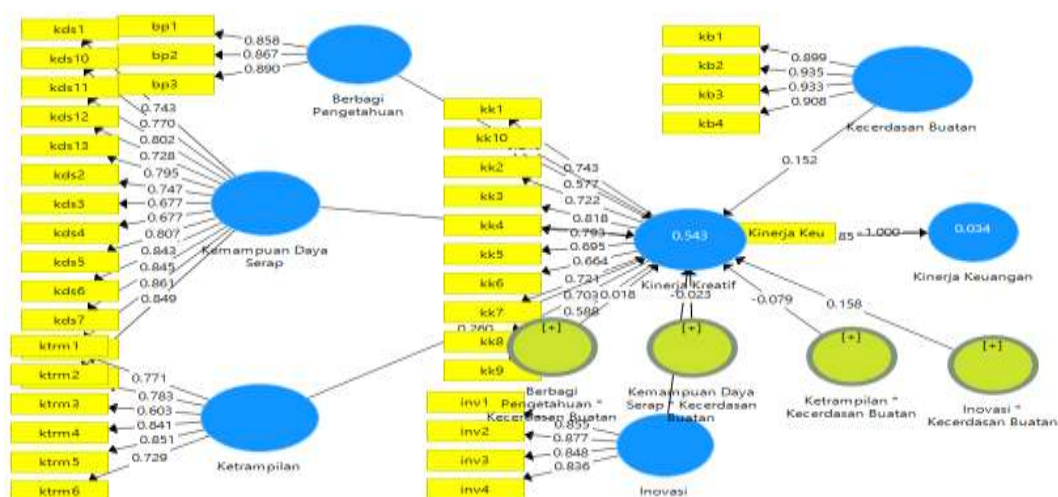


Figure 2. Model 1 PLS

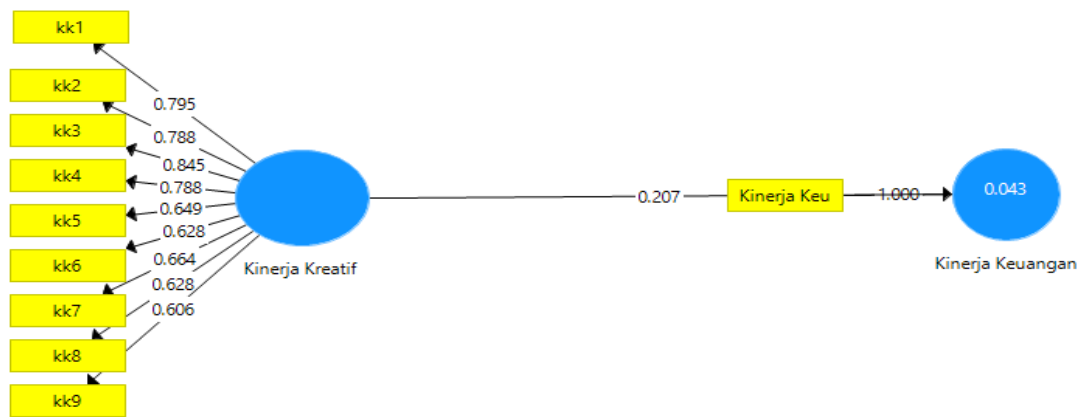


Figure 3. Model 2 PLS

Table 7. F Test Results

	Regressions	
	Creative Performance	Financial Performance
F-Squared	0,25	0,245
Rule of Thumb	$0,15 \leq F2 < 0,35$	Small Effect

Source: Data processed by researchers, 2024

The results of the F test on creative performance show an F-square (F^2) value of 0.25 which is a measure of the effect or strength of the relationship between the independent variable and the dependent variable in the regression model. Based on the Rule of Thumb, the F-squared value is considered a moderate effect. This means that the independent variables in the regression model have a significant contribution in explaining variations in creative performance, but there are still other factors that influence creative performance that have not been taken into account in this model. Meanwhile, the F-squared value on the financial performance variable is 0.245 which is included in the small effect category. This means that creative performance is only able to explain a small part of the variance in financial performance.

Table 8. Determination Coefficient Results

	Adjusted R Square	
	Creative Performance	Financial Performance
Determination Coefficient	0,532	0,243
Rule of Thumb	R-square (R^2) = 0,50	R-square (R^2) = Small

Source: Data processed by researchers, 2024

Based on table 8, it shows the results of the coefficient of determination (R-squared) of the creative performance variable of 0.532 indicating that the regression model can explain about 53.2% of the variance in creative performance. The Rule of Thumb which states that the R-squared (R^2) value of 0.50 is considered a fairly moderate model, this result indicates that the regression model used has a fairly good quality in explaining variations in creative performance, but there is still 46.8% of the variance that cannot be explained by the model.

The results of the financial performance determination coefficient of 0.243 indicate that the regression model can only explain about 24.3% of the variance in financial performance. The Rule of Thumb that categorizes this value is in the small effect category, which means that the relationship between the independent variable (creative performance) and the dependent variable (financial performance) is quite weak. Thus, there are other factors outside of creative performance that play a more significant role in explaining variations in financial performance. Because, 76% of the variance in financial performance still cannot be explained by the model.

Table 9. Hypothesis Testing Results

Path	β	M	StDev	T Statistics	P Values
Knowledge Sharing -> Creative Performance	0,240	0,236	0,052	4,640	0,000
Absorptive Capacity -> Creative Performance	0,096	0,097	0,047	2,066	0,039
Skills -> Creative Performance	0,260	0,272	0,067	3,879	0,000
Innovation -> Creative Performance	0,163	0,155	0,066	2,464	0,014
Artificial Intelligence -> Creative Performance	0,152	0,151	0,060	2,518	0,012
Knowledge Sharing * Artificial Intelligence -> Creative Performance	0,018	0,013	0,045	0,400	0,689
Absorptive Capacity * Artificial Intelligence -> Creative Performance	-0,023	-0,018	0,048	0,474	0,636
Skills * Artificial Intelligence -> Creative Performance	-0,079	-0,069	0,073	1,083	0,279
Innovation * Artificial Intelligence -> Creative Performance	0,158	0,154	0,063	2,488	0,013
Creative Performance -> Financial Performance	0,185	0,186	0,052	3,580	0,000

Source: Data processed by researchers, 2024

As shown in Table 9, there is a significant positive relationship between Knowledge Sharing and Creative Performance, with a p-value greater than 0.000. This suggests that Knowledge Sharing can improve the Creative Performance of SMEs, thereby accepting Hypothesis 1. This aligns with earlier studies that indicate knowledge sharing can generate value and offer a competitive edge (Iqbal et al., 2018). According to (Singh et al., 2020) firms that cultivate a knowledge-sharing culture exhibit greater innovation and show enhanced performance. Knowledge is regarded as an important dynamic element for the achievement and effectiveness of an organization (Akram et al., 2018)

This study confirms Hypothesis 2, which posits that Absorptive Capacity significantly influences the Creative Performance of SMEs with a p-value greater than 0.039. By effectively absorbing and processing external information, MSMEs can improve innovation, productivity, and attain better creative results. These findings correspond with Xie *et al.* (2018), Lo & Tian (2020), Ortigueira-Sánchez *et al.* (2020), Stelmaszczyk (2020), and Müller *et al.* (2021) indicating that a high absorptive capacity allows companies to more effectively adjust to environmental changes, thus enhancing competitiveness and performance growth.

Skills greatly positively affect the Creative Performance of MSMEs, demonstrated by a p-value > 0.000, showing that the skills held by MSME participants can directly improve their capability to generate and execute innovative ideas. These findings back Hypothesis 3, which states that strong skills positively influence Creative Performance, reinforcing the ability of SMEs to respond to market changes and enhance value in each business process. These results align with the studies of Benitez *et al.* (2018) and Chen & Su (2017), which demonstrated a positive correlation between skills and company performance, suggesting that skills may serve as a significant asset in attaining competitive advantage and fostering overall performance growth.

Innovation has a significant positive impact on the Creative Performance of SMEs, with a p-value > 0.014 , indicating that the implementation of innovation can directly strengthen SMEs' ability to produce more creative and adaptive performance. By accepting Hypothesis 4, these results indicate that innovation plays a key role in accelerating the creative process and creating sustainable added value. This research is consistent with Keskin (2006) findings, which show that innovation has a significant impact on the performance of SMEs, highlighting the importance of SMEs' ability to continuously innovate in the face of competition and develop creative solutions in a dynamic business environment.

Artificial Intelligence greatly influences Creative Performance positively, with a p-value exceeding 0.012. As a result, Artificial Intelligence can improve the Creative Performance of SMEs. Therefore, Hypothesis 5 is accepted. AI allows entrepreneurs to devote time to creative thinking, as it enhances access and boosts productivity. Additionally, AI supports better collaboration and teamwork. With robust analytical skills, it will aid in uncovering solutions to intricate issues.

Artificial Intelligence does not have the ability to moderate the effect of Knowledge Sharing on Creative Performance, given that the p-value is less than 0.689. This can happen due to the intricate relationship between knowledge sharing, AI utilization, and creative performance, along with other elements like the work environment, motivation, and support. Consequently, Hypothesis 6 is dismissed. While AI can help in certain areas, creativity still demands critical thinking. Not every AI tool or application is efficient with varied characteristics. The opposition from individuals to the use of AI obstructs the capacity to make optimal use of technology.

The Absorptive Capacity does not affect the relationship between Skills and Creative Performance, with a p-value of less than 0.636. The outcome might happen because of the uneven or not entirely optimized capacity to take in information. Humans rely on AI, which results in a decline in their own creative thinking skills. AI has limitations in grasping context and cannot completely substitute or assist in that role in every scenario. As a result, Hypothesis 7 is dismissed.

Artificial Intelligence does not affect the relationship between Skills and Creative Performance, with a p-Value less than 0.279. This may occur since not every aspect can be supported by AI, hence still necessitating a personal touch and intuition that AI cannot fully emulate. It must be overseen to avoid excessive reliance on AI, as this diminishes personal initiative for creative thinking. As a result, Hypothesis 8 is dismissed.

The impact of Innovation on Creative Performance is moderated by Artificial Intelligence, showing a p-value of less than 0.013. The findings align with the study conducted by (Agrawal et al., 2019). Firms that put resources into the advancement and efficient application of AI can inspire innovation and enhance productivity. AI can improve teamwork and communication, along with more effective project management, which consequently fosters innovation and creative output. As a result, Hypothesis 9 is accepted.

Table 7 indicates that Creative Performance significantly positively affects Financial Performance, with a p-value greater than 0.000. These results endorse the acceptance of Hypothesis 10 and confirm that the enhancement in Creative Performance directly affects the Financial Performance of SMEs. To put it differently, innovation in operations and product or service creation can lead to financial advancement, offer a competitive edge, and enhance the standing of SMEs in the marketplace. This illustrates that creativity is not merely a supporting element but also an essential factor in attaining improved financial outcomes for SMEs.

Conclusion

Research findings on SMEs in the creative sector in Indonesia suggest that knowledge sharing, absorptive capacity, skills, and innovation positively and significantly affect the enhancement of creative performance. The use of artificial intelligence (AI) technology has shown to enhance the connection between innovation and creative performance, offering SMEs the chance to be more adaptable to market needs and emerging trends. Nevertheless, the application of AI does not demonstrate a notable effect on enhancing the

connection between knowledge sharing, absorptive capacity, and skills related to creative performance. The restrictions in technological preparedness and expertise in this field. A lot of SMEs in Indonesia do not currently possess the necessary mature infrastructure or skilled human resources to optimally integrate AI into their knowledge sharing and skill development processes. The implementation of AI also requires significant operational adjustments and investments in training and technological tools, which can be obstacles for SMEs, so AI has not yet been fully utilized to enhance internal capabilities that support creative performance.

Implication and Suggestion

Theoretical implications stemming from Social Exchange Theory suggest that AI has not yet succeeded in promoting social reciprocity like trust and interaction needed for the exchange of knowledge and skills, leading to a restricted effect on the creative performance of SMEs. According to Contingency Theory, these findings highlight that the success of AI is influenced by the contextual preparedness of SMEs, such as the infrastructure and organizational culture that facilitate technology adoption. These results suggest that the application of AI within organizations needs to be adapted to their internal readiness to successfully enhance creative performance. Consequently, creating a model that incorporates social and cultural elements in the adoption of AI within SMEs can yield more profound insights, particularly regarding sustainable innovation and creative performance.

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