INTERNATIONAL JOURNAL OF ECONOMICS AND BUSINESS ISSUES

Research Paper

Exploring the Impact of Technology, Organization, and Environment on MSME Performance: The Role of Social Media and Organizational Culture as Moderators

Aristiovani Azis Mardikantoro[1*], Budhi Haryanto[2]
[1,2] Faculty of Economics and Business, Sebelas Maret University, Surakarta, Indonesia.

ARTICLEINFO
Keywords:
Social Media Adoption,
Technology,
Organization,
Environment,
Organizational Culture,
MSME Performance

E-ISSN: 2958-6429
P-ISSN: 2958-6410

ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are key drivers of the economy in Central Java, Indonesia, particularly in Klaten, Jepara, and Semarang. The 2016 Economic Census found that internet-enabled businesses, especially those using social media, tend to experience greater profit growth. This study explores the impact of Technology, Organization, and Environment (TOE) factors on MSME performance, focusing on social media adoption. Using a quantitative approach and Structural Equation Modeling (SEM) with SMART PLS 3.0, the study surveyed 400 respondents. Results show that TOE factors significantly influence MSME performance, with social media adoption positively impacting business outcomes. However, organizational culture did not moderate the social media-MSME performance relationship in Klaten. The research underscores the importance of selecting the right social media platforms to foster direct and responsive communication, enhancing MSME performance through better engagement with customers and stakeholders.

1.INTRODUCTION

The development of information technology has evolved over time. Initially, technology was used to assist humans in performing simple tasks. However, as technology has advanced, it now plays a central role in virtually all aspects of life, enabling people to communicate across countries, access information, and enjoy entertainment from any location in a short period. The era of digitalization has significantly benefited various industries. Today, human behavior is closely intertwined with technology, which has improved communication, information retrieval, and entertainment. Technology now connects individuals across different fields, and digital platforms, particularly social media, have become essential tools for conducting business. As a result, information technology has transformed human behavior in communication, product purchasing, and entertainment consumption. Technological advancements are now penetrating various industries, especially marketing. Technology and marketing are closely linked, and the integration of social media has brought innovation to marketing practices. Social media, as a digital platform, provides the tools necessary for businesses to engage in social activities and enhance their operations.

The growth of a business can be influenced by the Technology, Organization, and Environment (TOE) framework. According to Tsou and Hsu (2015), TOE is a theoretical framework developed in the field of information systems to explain how the adoption and use of technology are influenced by factors such as technology characteristics, organizational context, and the external environment in which the organization operates. Essentially, TOE comprises technological, organizational, and environmental elements (Kulkarni et al., 2024). Technology is considered a critical factor in enhancing business competitiveness, particularly for businesses that leverage technology to achieve economies of scale with their resources. Therefore, understanding the factors influencing technology adoption is essential (Wang et al., 2023). Technologies like social media are easily accessible and can be adopted by businesses, especially micro, small, and medium enterprises (MSMEs), as they can be learned and utilized through the Internet (Yadav et al., 2024).

The impact of adopting technology on MSMEs is a key strategy for improving business performance (Fan & Pan, 2023). As a result, MSMEs increasingly utilize this strategy to support more effective and efficient marketing plans. Those that have adopted technology in their marketing efforts are heavily leveraging social media. Social media not only enhances marketing capabilities but also contributes to improvements at the strategic level (Junaid et al., 2023). It should be viewed not just as a technological adoption, but as a holistic approach to business transformation in the digital era, including organizational culture. A strong culture that values innovation and encourages experimentation can help MSMEs adapt more quickly to market changes and technological advancements. This flexibility is essential for staying competitive and seizing new opportunities (Al-Hakimi et al.,

*Corresponding author.
E-mail: tiokingdom@gmail.com

2022). Despite its importance, the impact of organizational culture is often overlooked in the literature, especially concerning digitalization efforts and significant changes in business (Grover et al., 2022; Münch et al., 2022). Therefore, the drive to innovate is more likely to thrive in the MSME environment than in larger corporations (Lin & Fan, 2024).

This research focuses on the implementation and adoption of TOE strategies affecting MSME business performance. In the context of MSMEs, the TOE model is an appropriate framework for understanding technology-based adoption (Chaudhuri et al., 2024). The TOE model includes several determinants that need to be specifically investigated in relation to social media adoption, particularly those factors that may influence MSMEs in adopting social media. Several previous studies have explored the relationship between social media adoption and business performance. Research has demonstrated that social media adoption positively impacts company performance (Kumar et al., 2024). Social media also positively influences consumer understanding, leading to improved business outcomes (Junaid et al., 2023). It provides several benefits for MSMEs, such as increasing market share and revenue, serving as an effective communication tool, and supporting business decision-making (Chaudhuri et al., 2024). Garg et al. (2020) examined several advancements in business practices utilizing social media and their effects on business performance. Conversely, Olanrewaju et al. (2020) highlighted that many areas of the impact of digital platform use on MSME sustainability remain unexplored. Empirical evidence from previous research contributes to the understanding of models that marketers use to improve business performance based on specific challenges. Therefore, this study aims to apply a model to MSMEs in Klaten, using TOE as a variable that influences MSME performance, with social media as mediation and organizational culture as moderation.

Business performance refers to the results or level of success an individual or organization achieves over a specific period compared to predetermined goals, targets, or criteria (Chaudhuri et al., 2023). One challenge faced by MSMEs is performance, particularly in terms of profitability. Successful business performance in MSMEs is closely related to how business owners manage their operations. It also reflects the effectiveness and efficiency of the efforts made to achieve business objectives. According to Abdelaziz et al. (2024), successful entrepreneurs are those who innovate and improve their business performance, positioning them to face market competition effectively. This view consistent with Rakotoarisoa et al. (2022). Modern developments have made it essential for businesses to operate online, and as competition tightens, improving business performance has become crucial. If Micro, Small, and Medium Enterprises (MSMEs) fail to adapt to these changes, their businesses risk stagnating and being abandoned (Fan & Pan, 2023). One solution to overcome these challenges is the adoption of technology. To enhance business performance, technology adoption in MSMEs can be understood through three factors: technology, organization, and environment (TOE). Technology is the core factor and is essential for the continuity of a business and maintaining its performance. Therefore, to improve competitiveness—whether in operational efficiency, reducing costs, aligning product design with consumer needs, or enhancing customer service quality—it is crucial for MSMEs to focus on utilizing technology. Currently, social media is the most effective tool for business promotion. The Social Media Marketing Industry Report shows that 90% of marketers agree that social media is a vital part of business, with 89% acknowledging its importance. However, only 44% of marketers believe that using social media as a marketing channel benefits businesses (Junaid et al., 2023). Social media is defined as a platform for communication, collaboration, and data sharing between interconnected individuals, communities, and organizations, enhanced by technological capabilities (Lin & Fan, 2024). Social media offers many advantages, especially for business purposes, including promoting products and services, facilitating communication between customers and suppliers, and supporting the improvement of business performance.

Every business, company, or organization has its own unique organizational culture, which serves as a key distinguishing feature. Organizational culture helps align employee behavior with the strategic goals of an MSME, contributing to its success (Tsou & Hsu, 2015). When employees understand and embrace the vision and objectives of the company, it becomes easier to achieve those goals. A strong, resilient organizational culture can also help MSMEs navigate uncertainty by promoting perseverance, teamwork, and creativity in problem-solving (Saha & Kumar, 2018). A positive organizational culture creates a supportive environment where employees feel valued, motivated, and engaged, leading to higher productivity, lower turnover, and greater commitment to the organization's purpose (Batool et al., 2024). These factors ultimately contribute to better business performance, particularly in MSMEs. This research is grounded in the Technology-Organization-Environment (TOE) framework, which helps identify the factors influencing technology adoption in business. The technological context includes both internal and external technologies suited to the business's characteristics. The organizational context encompasses factors such as business size, centralization, formalization, management structure, human resources, and employee relationships. This study deviates from previous research by focusing on MSMEs in Klaten, which provides a new context for examining the TOE model. By shifting the sample and research setting, this study fills a gap in existing literature and offers new contributions and insights. The findings will enable a more nuanced interpretation of the complex relationships between variables, helping to distinguish the direct and indirect effects on MSME performance.

2. LITERATURE REVIEW

2.1. Micro, Small, and Medium Enterprises (MSME) Business Performance

Business performance, as defined by Wang et al. (2023), is a comprehensive assessment of an organization over time, where performance outcomes are determined by how effectively the company utilizes its resources in its operations. Fan and Pan (2023) emphasize that for MSMEs, business performance reflects the tangible and intangible benefits gained from adopting social media, which include both financial and non-financial outcomes (Alier & Riani. 2024; Azalia Calista & Febrianto, 2023). According to Saha and Rathore (2024), MSME performance can be categorized into four key dimensions: *Marketing:* This dimension focuses on the net profit derived from pre-sales activities, such as enhanced advertising and marketing efforts, as well as reduced marketing costs. *Sales:* This dimension encompasses the direct benefits resulting from the sale of products or services, including increased market share, revenue growth, and product improvements. *Customer Service:* This dimension highlights the advantages of customer interactions, such as improved customer satisfaction, greater convenience, and more effective communication. *Internal Operations:* This dimension addresses the operational benefits of social media use within the organization, including enhanced communication, motivation, and effectiveness among employees or staff. Together, these dimensions provide a holistic view of how MSMEs can leverage social media to improve their overall performance across multiple areas.

2.2. Technology, Organization, and Environment (TOE) Theory

Technology context includes both external and internal technologies that are relevant to your business, and technology can include devices and processes. Organizational context refers to the characteristics of institutional resources such as company size, centralization level, formalization level, management structure, human resources, unemployment level, and relationships between employees. Meanwhile, the environmental context includes the size and structure of the industry, the company's competitors, the macroeconomic context, and the regulatory environment. The following describes the three contexts of TOE, including:

2.2.1. Technology Context

The technology variable refers to any technology that is available or potentially useful to an organization but has not yet been utilized (Abdelaziz et al., 2024). Francia and Ferasso (2023) identify five key indicators of technological innovation that influence adoption: *Relative Advantage*, which refers to the perceived benefits of the innovation compared to existing alternatives; *Compatibility*, which measures how well the innovation aligns with technologies already in use within the organization; *Complexity,* which gauges whether the innovation is perceived as challenging to use; *Observability,* which assesses the visibility of the results of adopting the innovation to others; and *Trialability,* which reflects the ease with which the innovation can be tested before full adoption. Kilay et al. (2022) emphasize that technology factors significantly impact the adoption and use of social media. Kumar et al. (2024) further argue that these five technological factors—compatibility, relative advantage, complexity, observability, and trialability—are critical in determining the adoption of social media by MSMEs.

2.2.2. Organizational Context

The "Organization" variable refers to the internal characteristics of a company, including factors such as size, level of formalization, centralization, staffing, and management-related aspects like networking and staff relations (Wang et al., 2023). Previous research has highlighted the critical role of top management support in facilitating the adoption of new technologies, as they are responsible for providing the necessary resources and direction (Fan & Pan, 2023). Studies by Junaid et al. (2023) and Lin & Fan (2024) further emphasize the significant impact of organizational factors on social media adoption, showing that organizational characteristics, particularly the role of management, can influence technology adoption decisions. Chaudhuri et al. (2024) also note that top management plays a pivotal role in the innovation adoption process within MSMEs. Given that decision-making in MSMEs is often concentrated at the top management level—usually the business owner—and their organizational structures are typically simple, this study focuses specifically on top management as a key dimension of the organizational context. This approach aligns with the understanding that, in MSMEs, the owner or top manager is the primary decision-maker, making their role in adopting innovations, such as social media, particularly crucial.

2.2.3. Environmental Context

The external environment encompasses any event or factor outside the organization that has the potential to affect its operations (Wang et al., 2023). According to Lin and Fan (2024), the environment is a variable that helps identify all factors external to the organization, including the conditions under which the organization functions. Three key indicators measure this variable: a) Competitive Intensity, which refers to the pressure of losing competitive advantage in the near future. b) Competitive Pressure, which represents the level of competition within an industry. c) The Bandwagon Effect, a psychological phenomenon where a company adopts an innovation because it has been adopted by another company, even though this decision may align with its strategy.

2.2.4. Social Media

Social media refers to online platforms that enable individuals to share, collaborate, engage, and connect with others in virtual social networks (Kumar et al., 2024). Junaid et al. (2023) further define social media as an

internet-based application grounded in Web 2.0 technology, which serves as a foundational platform for user-generated content creation and exchange. Chaudhuri et al. (2024) describe social media as an online tool accessible to anyone with an internet connection, offering opportunities to learn, interact, and connect with a broad audience. Over time, it has evolved into a powerful business tool. Previous studies have demonstrated that the use of social media enhances business effectiveness (Chaudhuri et al., 2023) and facilitates increased customer knowledge, which in turn improves business operations (Ben Abdelaziz et al., 2024). Research by Mudjahidin et al. (2024) and Saha and Rathore (2024) also supports the idea that social media adoption has a positive and significant impact on business performance.

2.3. Organizational Culture

Organizational culture plays a crucial role in enabling an organization to achieve its goals. Without the right organizational culture, an organization's staff will struggle to effectively contribute to the timely achievement of its objectives (Batool et al., 2024; Soleha & Musoli. 2024). Researchers argue that organizational culture acts as a mediator between social media adoption and SME performance (S. Saha & Kumar, 2018). Previous studies have highlighted the significant impact of organizational culture on both social media adoption and SME performance. For instance, Hooi et al. (2021) examined the influence of organizational culture on social media and performance, using a quantitative methodology with 450 respondents. Their findings revealed that a positive organizational culture enhances employees' ability to effectively use social media, which, in turn, boosts organizational performance. Similarly, Salam and Hoque (2019) conducted a study on the role of organizational culture in the relationship between social media and SME performance. Using data from 280 respondents and employing SPSS and AMOS for analysis, their research confirmed the significant influence of organizational culture on the effectiveness of social media adoption and its impact on SME performance.

In addition, Gorondutse & Hilman (2019) conducted a study in Indonesia and investigated the influence of organizational culture on the relationship and performance of social media tools; they used quantitative methodology in their research work, and the collected data was analyzed using SPSS and Smart-PLS, their findings showed that, organizational culture significantly influenced the relationship between organizational performance of social media tools. Moreover Chaudhuri et al., (2024) conducted research on organizational culture factors that affect social media marketing tools on organizational performance, they used quantitative methodology and data were collected from 175 respondents, they analyzed the data collected using SPSS and AMOS software, their findings showed that organizational culture factors have a significant influence on social media marketing tools on organizational performance.

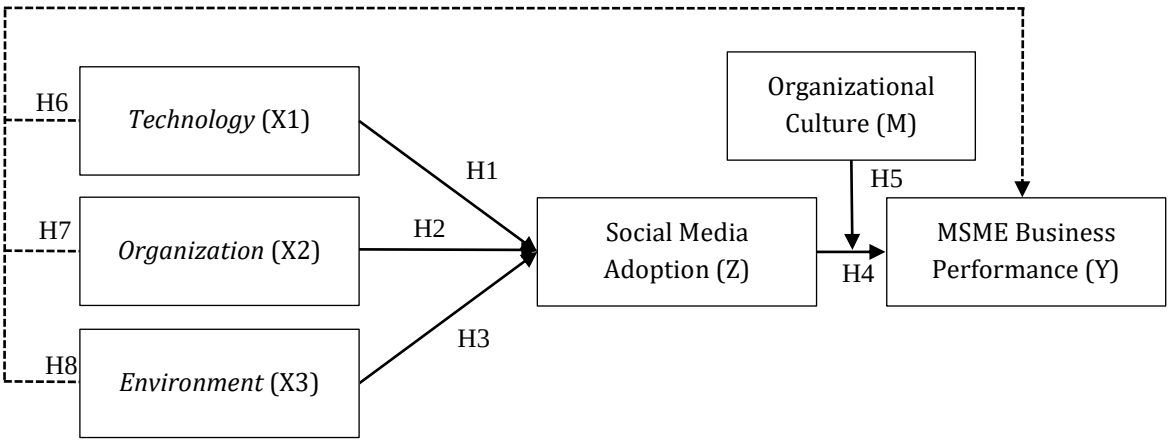

Figure 1. *Conceptual Framework*

H1: Technological factors affect the adoption of social media.
H2: Organizational factors affect social media adoption.
H3: Environmental factors affect the adoption of social media.
H4 : The adoption of social media affects the performance of MSMEs.
H5: Organizational culture moderates the influence of social media adoption on the performance of MSMEs.
H6 : Technology factors affect the performance of MSMEs through the mediation of social media adoption.
H7 : Organizational factors affect the performance of MSMEs through the mediation of social media adoption.
H8 : Environmental factors affect the performance of MSMEs through the mediation of social media adoption.

3. METHODS

This study adopts a quantitative research design with a causal approach to examine the relationships between variables. The research population consists of MSME owners and operators who have adopted social media technology and are based in Klaten. However, since the exact population size is unknown, the study employs a non-probability sampling technique, specifically random sampling. In this approach, participants are selected based on their chance encounters with the researcher or by meeting the criteria set for the sample (Cooper & Schindler, 2014). This method allows for flexibility in sample selection, ensuring that participants who meet the necessary criteria can contribute to the study. The sample included 400 respondents, providing a sufficient number of data points for robust analysis. The data collected from these respondents were analyzed using Structural Equation Modeling (SEM) with Partial Least Squares (PLS), a statistical technique that enables the examination of complex relationships between observed and latent variables. PLS-SEM is particularly suited for this study as it allows for both the measurement and structural models to be tested simultaneously, providing a comprehensive understanding of the factors influencing MSME performance through social media adoption. Using this research strategy and analytical approach, the study aims to provide meaningful insights into the role of social media technology in improving MSME performance while considering the effects of organizational culture and external environmental factors.

4. RESULTS

4.1. Convergent Validity

Convergent validity is a validity that is proven if the score obtained by the instrument that measures the concept, or measures the concept with different methods has a high correlation. The correlation between the indicator score and the variable score is a measurement *of convergent validity* of the *measurement model*. Convergent validity is done to measure the accuracy of an item or a set of items. The indicator that will be used for this study is *factor loading* (FL). If the FL value is greater than 0.5, the item measured is declared valid (Abdillah, 2018).

Table 1. Outer Loading Test Results

Latent Variables	Indicator	Outer loadings	Critical Value	Conclusion
Technology	T1	0,720	0,50	Valid
	T2	0,768	0,50	Valid
	T3	0,725	0,50	Valid
	T4	0,679	0,50	Valid
	T5	0,657	0,50	Valid
	T6	0,687	0,50	Valid
	T7	0,700	0,50	Valid
	T8	0,744	0,50	Valid
	T9	0,753	0,50	Valid
	T10	0,762	0,50	Valid
	T11	0,636	0,50	Valid
	T12	0,702	0,50	Valid
	T13	0,710	0,50	Valid
	T14	0,718	0,50	Valid
	T15	0,722	0,50	Valid
	T16	0,710	0,50	Valid
	T17	0,729	0,50	Valid
	T18	0,524	0,50	Valid
	T19	0,558	0,50	Valid
	T20	0,566	0,50	Valid
	T21	0,521	0,50	Valid
Organization	01	0,689	0,50	Valid
	O2	0,839	0,50	Valid
	O3	0,802	0,50	Valid
	O4	0,803	0,50	Valid
Environment	E1	0,720	0,50	Valid
	E2	0,776	0,50	Valid
	E3	0,792	0,50	Valid
	E4	0,808	0,50	Valid

Latent Variables	Indicator	Outer loadings	Critical Value	Conclusion
Culture	E5	0,808	0,50	Valid
	E6	0,719	0,50	Valid
	E7	0,778	0,50	Valid
	E8	0,839	0,50	Valid
	C1	0,779	0,50	Valid
	C2	0,840	0,50	Valid
	C3	0,860	0,50	Valid
Social Media Adoption	A1	0,758	0,50	Valid
	A2	0,779	0,50	Valid
	A3	0,817	0,50	Valid
	A4	0,797	0,50	Valid
	A5	0,802	0,50	Valid
	A6	0,681	0,50	Valid
	A7	0,736	0,50	Valid
	A8	0,781	0,50	Valid
	A9	0,783	0,50	Valid
	A10	0,772	0,50	Valid
	A11	0,783	0,50	Valid
MSME Performance	P1	0,749	0,50	Valid
	P2	0,722	0,50	Valid
	P3	0,796	0,50	Valid
	P4	0,743	0,50	Valid
	P5	0,743	0,50	Valid
	P6	0,756	0,50	Valid
	P7	0,735	0,50	Valid
	P8	0,759	0,50	Valid
	P9	0,643	0,50	Valid

In table 1, it is shown that 56 statement items out of a total of 56 statements are declared valid because they have a loading *factor* value of > 0.50. Furthermore, the test was carried out using *Average Variance Extracted* (AVE), a model that has good *convergent validity* can be seen from the AVE value. The data is said to be valid if the AVE value is greater than 0.5. From the processed data, the following results were obtained: Based on table 2, it can be seen that the AVE score obtained from the variables *Technology, Organization, Environment, Culture, Social Media Adoption,* and *MSME Performance* is > 0.50. Therefore, the stage of *convergent validity* has been completed by obtaining a *score loading factor* of > 0.7 for each research indicator item and an AVE value of > 0.5 for each research variable. Therefore, it can be concluded that the 56 valid statement items can be used as research instruments because they have met the requirements of *convergent validity*.

Table 2. Average *Variance Extracted* (AVE) Test Results

Latent Variables	AVE	Critical Value	Conclusion
Technology	0,569	0,50	Valid
Organization	0,617	0,50	Valid
Environment	0,610	0,50	Valid
Culture	0,684	0,50	Valid
Social Media Adoption	0,597	0,50	Valid
MSME Performance	0,547	0,50	Valid

4.2. Discriminant Validity

Discriminant validity is seen through the measurement of *cross loading factor* with the comparison of AVE and correlation between variables in a study. *Discriminant validity* can represent the extent to which a construct is empirically different from other constructs (Fornell & Larcker, 1981). Based on table 3 above, it shows that the square root value of AVE and the correlation value of a latent variable with other constructs show a greater value.

So that the results of the discrimination validity examination through the Fornell and Lacker criteria for latent constructs have a valid discrimination validity value.

Table 3. Fornell Lacker Criteria Test Results

	Culture	Environment	MSME Performance	Organization	Social Media Adoption	Technology
Culture	**0,827**					
Environment	0,385	**0,781**				
MSME Performance	0,447	0,777	**0,840**			
Organization	0,420	0,755	0,783	**0,785**		
Social Media Adoption	0,409	0,756	0,719	0,701	**0,773**	
Technology	0,441	0,754	0,790	0,722	0,698	**0,885**

4.3. Evaluation of Structural Measurements

The value *of R square* is the coefficient of determination in endogenous constructs. The value *of R-Square* is the coefficient of determination in endogenous constructs. The higher the *R-Square* value, the better the prediction model of the proposed research model, where the value of the determination coefficient < 0.02 has a weak influence, if the value of the determination coefficient is between 0.15 to 0.35, it has a moderate influence on the structural level, while the determination coefficient with a value of > 0.35 has a strong influence on the structural level (Ghozali, 2014). Based on Table 4, it can be seen that the *R-Square* values in the *Social Media Adoption variable* are 0.825 and 0.694 for the MSME Performance variable. The *R-Square* value for *the Social Media Adoption* variable shows the influence of *Technology, Organization,* and *Environment* on *Social Media Adoption* of 0.825 and the remaining 0.175 is influenced by other variables outside this study. Based on this, the indicators of *the Technology, Organization,* and *Environment* variables used in this study can explain up to 82.5% as factors that affect *Social Media Adoption*, thus showing that this model is classified as a strong category. While in the variable *MSME Performance,* Generate value *R-Square* by 0.694. This means that the variable *Technology, Organization, Environment, Culture,* and *Social Media Adoption* influences *MSME Performance* by 0.694, and the remaining 0.306 were influenced by other variables outside the study. So, the indicator of the variable *Technology, Organization, Environment, Culture,* and *Social Media Adoption* in influencing *MSME Performance*, which was used in this study, can explain 69.4% as a predictor factor, thus showing that this model is classified as a strong category as well.

Table 4. R-Square test results

Latent Variables	R-Square	Influence Conclusion
Social Media Adoption	0,825	Strong
MSME Performance	0,694	Strong

4.4. Hypothesis Test

To assess the significance of the prediction model in testing the structural model, the t-statistic values between the independent and dependent variables are examined. According to Widodo (2017) and Rangkuti (2017), hypothesis testing involves comparing the calculated t-statistic (t_0) with the critical t-value (t_a) from the t-distribution table. The following conditions are used to accept or reject hypotheses:

If $t_0 > t_a$: The hypothesis is accepted, indicating a statistically significant relationship between the variables.

If $t_0 \leq t_a$: The hypothesis is rejected, suggesting that there is no statistically significant relationship between the variables.

This process helps to determine whether the independent variables have a meaningful impact on the dependent variables, thereby validating the structural model's predictive power.

Table 5. *Path Coefficient*

Relationship Between Variables	Original sample	Sample mean	Standard deviation	T-stat	P values	Conclusion
Technology -> Social Media Adoption	0,679	0,686	0,066	10,261	0,000	H1 accepted
Organization -> Social Media Adoption	0,136	0,131	0,057	2,368	0,009	H2 accepted
Environment -> Social Media Adoption	0,142	0,140	0,059	2,427	0,008	H3 accepted
Social Media Adoption -> MSME Performance	0,732	0,736	0,038	19,278	0,000	H4 accepted
Culture -> MSME Performance	0,138	0,138	0,041	3,366	0,000	H5 accepted
Culture x Social Media Adoption -> MSME Performance	-0,059	-0,056	0,027	2,161	0,016	
Technology -> Social Media Adoption -> MSME Performance	0,497	0,504	0,048	10,312	0,000	H6 accepted
Organization -> Social Media Adoption -> MSME Performance	0,099	0,097	0,043	2,304	0,011	H7 accepted
Environment -> Social Media Adoption -> MSME Performance	0,104	0,104	0,045	2,321	0,010	H8 accepted

5. DISCUSSION

In this study, the researcher used an alpha level of 5%. So by using the t table (α) and df (n-k) then the t value of the table is 5% (bidirectional test), and df(385) = 1.9684. Calculations show that the t-table in this study is 1.9684. Based on Table 5, the p-value is used to determine the rejection or acceptance of the significance level of the alternative hypothesis (Hα). If the p-value is below 0.05 then the alternative hypothesis (Hα) is accepted, and conversely if the p-value is more than 0.05 then the alternative hypothesis (Hα) is rejected. In this study, alternative hypotheses were accepted on all hypotheses (H1, H2, H3, H4, H5, H6, H7, and H8). Based on the t-statistical value (t0) in Table 5, the test results for each hypothesis are accepted and will be described below.

In table 5. indicates t value 10.261 > a tα value of 1.9684. Thus H_1 received shown by the significance value of *p-value* < 0.05, which is 0.000. The value of *the original sample estimate is positive, which is 0.679,* which indicates that the direction of the relationship between the two variables is positive. This means that the factor *of technology has* a positive and significant effect on the adoption of social media by MSME actors in Klaten. Technology factors were found relevant in MSMEs' decision to adopt *social media* and its use. The findings of this study are also in line with previous research conducted in other developing countries such as Malaysia, Africa, UAE, China, and Saudi Arabia (Chatterjee & Kar, 2020; Ahmad et al., 2019; Abed, 2020; Chege & Wang, 2020; Cao et al., 2018; Ainin et al., 2015). These findings imply that the main reason for the implementation of social media in MSMEs operating in Klaten is the expected benefits (relative advantages, compatibility, complexity, *trialability, and Observability*). The use of social media in developing countries is usually still in the early stages of development, so it is necessary to pay more attention to the growth of social media and its awareness can be further improved so that social media adoption can be further increased (Sugandini et al., 2021). Rana et al. (2019) mentioned that awareness of the relative superiority of a company is beneficial in improving knowledge sharing and overall organizational performance. In addition, Chatterjee and Kar (2020) state that compatibility is the extent to which new technology is consistent with previous practices, technologies, and current needs, accompanied by the current values of Small and Medium Enterprises. Therefore, the technology factor is one of the most critical factors in assessing the adoption of social media and is rarely used in the literature within the framework of the TOE (Rana et al., 2019). Therefore, social media is an innovative technology because it provides a way to improve interaction between customers and organizations (Maroufkhani et al., 2020).

Table 5 shows the value of t_0 by 2.368 > the tα value is 1.9684. Thus, H_2 received indicated by the significance value of *p-value* < 0.05, which is 0.009. The value of the original sample estimate is positive, which is 0.136, which suggests that the direction of the relationship between the two variables is positive. This means that organizational factors have a positive and significant effect on social media adoption, showing that organizational factors are one of the factors that determine the desire of MSME actors in Klaten to adopt social media. Organizational construction was found to be an essential factor in MSMEs' decision to adopt SM and its use in the Klaten area. Significantly, top management support has proven to be a vital factor for the adoption of social media; this finding is consistent with (Pateli, 2020). The results propose that managerial support is an essential element in influencing social media adoption and motivating employees to use social media extensively for marketing activities. In addition, current research implies that the habits and abilities of MSME actors in Klaten to use social media in their daily lives make them more likely to adopt social media as a marketing tool. In addition, MSMEs

operating in other developing countries have lost managerial support related to the application of innovative technology (Tajudeen, 2018).

The construction of an organization includes the internal characteristics of the company, such as the number of employees, size, turnover, managerial structure, and related issues. This study uses the characteristics of top management and entrepreneurial orientation. The existing literature based on innovation primarily focuses on top management as a significant factor that changes the norms, values, and culture within the company. In turn, this allows other internal stakeholders to adapt to new technologies (Olanrewaju et al., 2020). Social media not only provides advantages but also disadvantages, which hinders top management's choice to adopt social media. Some of the negative aspects of implementing social media include wasted employee time and negative posts from dissatisfied customers, which can affect the reputation of the organization (Ahmad et al., 2018). Additionally, the adoption of social media requires continuous monitoring and educated and trained staff (Tajudeen et al., 2018). Maduku et al. (2016) found a significant relationship between top management support and mobile marketing adoption intentions in African SMEs through social media.

Table 5 shows a t-value of 0 of 2.427 > a tα value of 1.9684. Thus, $_H3$ *is accepted, which is indicated by a significance value* of < 0.05, which is 0.008. The original *sample estimate* value is positive, which is 0.142, which indicates that the direction of the relationship between the two variables is positive. This means that *the environment* has a positive and significant effect on *social media adoption*. This shows that environmental factors are one of the factors that determine the desire of MSME actors in Klaten to adopt social media. These findings are consistent with Cao et al. (2018), who suggest that MSMEs must adopt social media in response to their competitors to gain a competitive advantage and intelligence, respond to customers, and build good relationships with customers and other stakeholders. The results also show that some MSMEs are adopting new technology simply because other MSMEs in the market are also adopting it. In addition, some adopt for fear of losing customers and falling behind competitors.

The final dimension of the TOE framework is the environmental context, which includes the size and structure of the business, the company's competitors, the macroeconomic context, and the regulatory environment (Skafi et al., 2020). Therefore, environmental factors are the field around the company, which consists of various stakeholders such as members of the organization, competitors, suppliers, customers, governments, communities, and so on (Ghanem & Hamid, 2021). Therefore, these factors greatly influence how a company interprets the need for innovation, its ability to acquire resources to innovate, and the company's ability to actually implement it. These stakeholders can support or hinder technological innovation (Chatterjee & Kumar Kar, 2020). In addition, changing markets and competitive conditions encourage companies to use various forms of innovation. Government regulations are also another powerful tool to limit the operational activities of companies, increase production costs, and encourage investigation into technologies that must meet the mandatory criteria in the country (Skafi et al., 2020).

Table 5 shows the value of t_0 of 19.278 > a tα value of 1.9684. Thus, H_4 received indicated by the significance value of *p-value* < 0.05, which is 0.000. The value of *the original sample estimate is positive, which is 0.732,* which indicates that the direction of the relationship between the two variables is positive. This means that the level of social media adoption by MSME actors has a positive and significant effect on the performance of MSMEs in the Klaten area. There is a positive and significant influence between *social media adoption and MSME performance, where MSME actors will adopt social media to promote their business, which* will have an impact on the business performance of MSMEs in the Klaten area.

This study aims to explore the direct impact of social media adoption on the performance of MSMEs while also investigating the mediating role of social media adoption in this relationship. The findings suggest that the adoption and use of social media significantly enhance MSME performance by improving customer service, fostering stronger customer relationships, increasing customer loyalty and retention, enhancing company reputation, and expanding visibility to a more extensive customer base. These results align with Pateli (2020), which highlights the positive effects of social media adoption on business performance. Previous studies have examined various mediating variables between social media adoption and SME performance, such as communication performance (Wang, 2016), trust and sales ability (Pratono, 2018), and marketing capacity (Tajvidi, 2021). However, this study posits that social media not only has a direct influence on SME performance but also serves as a mediator between the Technology-Organization-Environment (TOE) framework and SME performance. This perspective is supported by Himelboim et al. (2014), who emphasize the mediating role of social media in the relationship between external factors and organizational outcomes. Sundjaja et al. (2017) further confirm the constructive mediating role of social media in shaping user behavior and motivation. Similarly, research by Qalati et al. (2021) supports the idea that social media adoption mediates the relationship between TOE attributes and SME performance. Based on these findings, this study develops a hypothesis for mediation testing, using a segmentation method to measure the indirect influences of TOE factors on SME performance through social media adoption.

Table 5 shows the value of t_0 is 2.161 > the tα value is 1.9684. Thus, H_5 received indicated by the significance value of *p-value* < 0.05, which is 0.016. The value of *the original sample estimate is negative, which is -0.059,* which indicates that the direction of the relationship between the two variables is negative. This means that organizational culture moderating influences social media adoption negatively and significantly on *MSME performance* in Klaten. As seen in Table 4.14, organizational culture has a significant negative influence on the relationship between social media adoption and MSME performance. This implies that the organizational culture in Klaten does not strengthen the relationship between social media adoption and MSME performance. Despite the fact that the results of the study show that there is a direct relationship between social media adoption and MSME performance. However, organizational culture shows a significant negative influence as a moderation variable between the two variables. This implies that the organizational culture in Klaten does not strengthen the relationship between social media and the performance of MSMEs. These results are in line with the research of Reyaee & Ahmed (2015) and Ahmad et al. (2019), noting that although the use of social media has increased drastically in the UAE, privacy concerns *Online* And building trust is a very sensitive issue in the region. As a result, protective measures such as government censorship and regulations are cultural characteristics in the UAE, which may go beyond the cultural context of organizations such as the MSME business environment. Therefore, understanding the role of organizational culture in social media adoption and company performance is crucial in this regard.

In table 5. indicates t value$_0$ of 10.312 > a tα value of 1.9684, thus H_6 received indicated by the significance value of *p-value* < 0.05, which is 0.000. The value of*original sample estimate* is positive, which is 0.497 which indicates that the direction of the relationship between the two mediated variables is positive. Means *technology* have a positive and significant effect on *MSME performance* through *Social Media Adoption*. The findings of this study reveal that the main reason for the adoption of social media is the benefits obtained through the technological aspect. Regarding the individual characteristics of technological impact, the positive relationship between the relative advantage of technological factors on performance through social media adoption was found to be consistent with previous research by Ainin et al. (2015), who argued that comparative advantage is a significant factor in social media adoption in Malaysian SMEs. Because SMEs have the resources available, the adoption of social media provides a lower-cost option than conventional (traditional) forms of promotional media (Chatterjee & Kar, 2020). This shows that the adoption of social media technology affects SMEs' performance in terms of improving customer service, relationships, and engagement, increased loyalty and retention, increased visibility, brand reputation, cost efficiency, and reaching a large number of customers.

In table 5. indicates t value$_0$ is 2.304 > the tα value is 1.9684, thus H_7 received indicated by the significance value of *p-value* < 0.05 is 0.011. The value of*original sample estimate* is positive, which is 0.099 which indicates that the direction of the relationship between the two mediated variables is positive. Means *Organization* have a positive and significant effect on *MSME performance* through *Social Media Adoption*. These results are consistent with previous studies (Tajudeen et al., 2018; Garg et al., 2020). The results of this study show that top management is interested in social media adoption and employees are required to use social media adoption widely as a marketing tool. The findings of this study show that while highly educated young owners, executives, and managers in Pakistan are already using social media, they prefer to adopt social media as a marketing tool. Regarding the relationship between these organizational factors, mediation of social media adoption has a significant relationship with the performance of MSMEs. Perhaps for fear of losing out on the competition, SMEs in developing countries, such as Pakistan, are acting organizationally when it comes to social media adoption.

Table 5 shows the value of t_0 2.321 > tα value of 1.9684, thus H_8 received indicated by the significance value of *p-value* < 0.05, which is 0.010. The value of*original sample estimate* is positive, which is 0.104 which indicates that the direction of the relationship between the two mediated variables is positive. Means *Environment* have a positive and significant effect on *MSME performance* through *Social Media Adoption*. In addition, Cao et al. (2018) argue that environmental factors through the adoption of social media show that environmental impacts have a significant influence on the performance of SMEs. Competitive pressure also has a significant influence on social media adoption (Qalati, 2020). This implies that SMEs are forced by competitive pressure to develop positive intentions towards social media adoption, this finding is consistent with the findings of Maroufkhani (2020). The study also found that the participatory effect had a significant influence on social media adoption. This implies that most SMEs adopt this innovative technology only because other SMEs also adopt it, i.e. most SMEs adopt it to reduce the fear of falling behind due to market fluctuations (Qalati, 2020).

6. CONCLUSION

This research facilitates an understanding of how effective social media adoption can improve MSME performance in several aspects. For example, the findings reveal that the adoption of social media has a significant impact on MSMEs in terms of reducing costs related to marketing activities. In addition, the active use of social media can increase customer relationships and loyalty because the active presence of MSMEs on social media will

improve customer service. In addition, the application of social media can increase brand visibility and allow a large number of customers to reach a large number of customers because the presence of social media, both digital and online, will make it easier for customers to reach the products offered by MSMEs. This also increases customer access to information because social media has made it easier for customers to share their information and input, and MSMEs can share their positive messages and images. In another aspect, social media will also help MSMEs find potential businesses for future alliances because of the presence of other MSMEs on social media.

As revealed in this study, there is a positive relationship between social media adoption and MSME performance. Where management and business owners can encourage members or workers in their MSMEs to adopt social media because the findings show that the adoption of social media will help MSMEs improve their performance, reduce marketing costs, reach more potential customers, and find more potential partners for future growth through social media. The TOE factor helps companies adopt social media quickly because these factors provide a favorable environment in which to adopt social media easily and quickly without any resistance. In addition, the most widely used type of social media application is social networking services. Before deciding which apps to adopt as part of their strategic plan, decision-makers should work closely with what social media data is currently most popular in their region. The most common types of media used by companies are Instagram and WhatsApp. Some studies state that organizations use social media simply because other organizations in the industry do the same. This results in a waste of resources, and social media adoption may not deliver the desired results. The study proposes that MSMEs have a clear understanding of how social media can help business owners improve their performance and image in the market. More importantly, this research highlights the reasons why social media should be adopted and how social media can be implemented successfully.

This research is significant for MSMEs because it can bridge the gap, serve as a research reference for academics, and provide new findings related to social media and MSME performance in the future. Similarly, this research serves as a policy guide for policymakers, especially in the field of MSMEs. However, the results of this study cannot be generalized to all other industries, and this is the limitation of this research. So, in the future, it is hoped that there will be relevant follow-up research that will help policymakers in decision-making not only related to MSMEs but also all other industries. In addition, in terms of regions, it is hoped that in the future, there will be further research with a broader range of respondents in a wider region, for example, on a country scale or several countries (for example, in developed countries, in developing countries, and so on). In addition, sample size and range may be considered limitations. If this research is applied correctly, it will undoubtedly help policymakers in decision-making related to social media and the performance of MSMEs in Klaten. This study will provide significant benefits for MSMEs because it provides an avenue for MSMEs in Klaten to understand the role of social media marketing tools in their performance.

The study investigates the impact of technology, organization, and the environment as important factors in the performance of micro, small, and medium-sized enterprises. This research also examines the role of mediating social media adoption. The findings show that social media has a significant influence on the performance of SMEs. The findings of this study suggest that social media allows MSMEs to connect effectively with customers, business partners, and other stakeholders on a more personal level, as social media facilitates direct mentions and direct replies. Most importantly, the study highlights how social media adoption allows MSMEs to build brand awareness and loyalty, improve customer relationships, and provide several benefits, including cost-effectiveness, relative advantage, visibility, and interactivity so that they can adjust to limited resources. Ultimately, the proposed construction provides a more detailed understanding of social media adoption for decision-makers in an MSME.

7. REFERENCES

Alier, A. A. T., & Riani Rachmawati. (2024). Digital Transformation's Impact On Organizational Performance: Exploring The Role Of Digital Innovation And Customer Experience. *International Journal of Economics and Business Issues,* 3(1), 40–51. https://doi.org/10.59092/ijebi.vol3.Iss1.37

Al-Hakimi, M. A., Al-Swidi, A. K., Gelaidan, H. M., & Mohammed, A. (2022). The influence of green manufacturing practices on the corporate sustainable performance of SMEs under the effect of green organizational culture: A moderated mediation analysis. *Journal of Cleaner Production*, *376*(September), 134346. https://doi.org/10.1016/j.jclepro.2022.134346

Azalia Calista, V., & Febrianto, R. (2023). Impact of Governance Structure, Blockholder, Company Age, and Technology Cost on the Implementation of Internet Financial Reporting. *International Journal of Economics and Business Issues,* 2(1), 20–31. https://doi.org/10.59092/ijebi.vol2.Iss1.23

Batool, S., Izwar Ibrahim, H., & Adeel, A. (2024). How responsible leadership pays off: Role of organizational identification and organizational culture for creative idea sharing. *Sustainable Technology and Entrepreneurship*, *3*(2), 100057. https://doi.org/10.1016/j.stae.2023.100057

Behl, A., Gaur, J., Pereira, V., Yadav, R., & Laker, B. (2022). Role of big data analytics capabilities to improve sustainable competitive advantage of MSME service firms during COVID-19 – A multi-theoretical approach.

Journal of Business Research, *148*(November 2021), 378–389. https://doi.org/10.1016/j.jbusres.2022.05.009

Ben Abdelaziz, F., Chen, Y. T., & Dey, P. K. (2024). Supply chain resilience, organizational well-being, and sustainable performance: A comparison between the UK and France. *Journal of Cleaner Production*, *444*(September 2023), 141215. https://doi.org/10.1016/j.jclepro.2024.141215

Chaudhuri, R., Chatterjee, S., Gupta, S., & Kamble, S. (2023). Green supply chain technology and organization performance: The moderating role of environmental dynamism and product-service innovation capability. *Technovation*, *128*(December 2022), 102857. https://doi.org/10.1016/j.technovation.2023.102857

Chaudhuri, R., Chatterjee, S., Mariani, M. M., & Wamba, S. F. (2024). Assessing the influence of emerging technologies on organizational data driven culture and innovation capabilities: A sustainability performance perspective. *Technological Forecasting and Social Change*, *200*(June 2023), 123165. https://doi.org/10.1016/j.techfore.2023.123165

Cooper & Schindler. (2014). *Bussiners Research Method*. McGrawHill.

Cooper, D. R., & Schindler, P. S. (2014). *Business research methods* (Twelfth Ed). McGrawHill.

Escobar-Castillo, A., Velandia-Pacheco, G., Navarro-Manotas, E., Otalora-Beltran, J., Garcia-Tamayo, D., Archibold-Barrios, W., & Ramirez-Juvinao, L. (2023). Factors that impact the innovation capability in MSMEs: Case of Colombia's Atlantico Department. *Procedia Computer Science*, *224*(2021), 490–494. https://doi.org/10.1016/j.procs.2023.09.070

Fan, B., & Pan, T. (2023). Does information technology–organizational resource interaction affect E-government performance? Moderating roles of environmental uncertainty. *Government Information Quarterly*, *40*(3), 101830. https://doi.org/10.1016/j.giq.2023.101830

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis (7th ed).* Essex: Pearson Education Limited.

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*(December 2019), 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hoi, L. W., Liu, M. S., & Lin, J. J. J. (2021). Green human resource management and green organizational citizenship behavior: do green culture and green values matter? *International Journal of Manpower*, *43*(3), 763–785. https://doi.org/10.1108/IJM-05-2020-0247

Junaid, M., Zhang, Q., Cao, M., & Luqman, A. (2023). Nexus between technology enabled supply chain dynamic capabilities, integration, resilience, and sustainable performance: An empirical examination of healthcare organizations. *Technological Forecasting and Social Change*, *196*(June 2022), 122828. https://doi.org/10.1016/j.techfore.2023.122828

Kilay, A. L., Simamora, B. H., & Putra, D. P. (2022). The Influence of E-Payment and E-Commerce Services on Supply Chain Performance: Implications of Open Innovation and Solutions for the Digitalization of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(3), 119. https://doi.org/10.3390/joitmc8030119

Kulkarni, A. V., Joseph, S., & Patil, K. P. (2024). Artificial intelligence technology readiness for social sustainability and business ethics: Evidence from MSMEs in developing nations. *International Journal of Information Management Data Insights*, *4*(2), 100250. https://doi.org/10.1016/j.jjimei.2024.100250

Kumar, S., Goel, U., Joshi, P., & Johri, A. (2024). Factors affecting Information & Communication Technology (ICT) adoption among MSMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100205. https://doi.org/10.1016/j.joitmc.2023.100205

Larios-Francia, R. P., & Ferasso, M. (2023). The relationship between innovation and performance in MSMEs: The case of the wearing apparel sector in emerging countries. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(1), 100018. https://doi.org/10.1016/j.joitmc.2023.100018

Lin, J., & Fan, Y. (2024). Seeking sustainable performance through organizational resilience: Examining the role of supply chain integration and digital technology usage. *Technological Forecasting and Social Change*, *198*(April 2023), 123026. https://doi.org/10.1016/j.techfore.2023.123026

Mudjahidin, M., Aristio, A. P., Balbeid, N. H., & Junaedi, L. (2024). The Influence of Social Media Sales Intensity and Competency on the Improvement of Business Performance Satisfaction in MSMEs. *Procedia Computer Science*, *234*, 869–875. https://doi.org/10.1016/j.procs.2024.03.074

Pozzo, D. N., Roa, I. G., Beleño, C. A. G., Orfale, H. J., Gomez, A. J. R., & Guerrero, V. C. (2023). The impact of entrepreneurial orientation on innovation performance: A study on micro, small and medium-sized enterprises (MSMEs) in the Colombian Caribbean. *Procedia Computer Science*, *224*, 502–506. https://doi.org/10.1016/j.procs.2023.09.072

Rakotoarisoa, M. H. S., Sulistyandari, S., Ravoaja, H., Randrianantenaina, S. M. A., & Ramalina , R. M. M. (2022). The

Influence of Positive Psychological Capital on Social Entrepreneurship Intention During Covid-19. *International Journal of Economics and Business Issues,* 1(1), 28–43. https://doi.org/10.59092/ijebi.vol1.Iss1.8

Rigdon, E. E. (2012). Rethinking Partial Least Squares Path Modeling: In Praise of Simple Methods. *Long Range Planning*, *45*(5–6), 341–358. https://doi.org/10.1016/j.lrp.2012.09.010

Saha, E., & Rathore, P. (2024). The impact of healthcare 4.0 technologies on healthcare supply chain performance: Extending the organizational information processing theory. *Technological Forecasting and Social Change*, *201*(April 2023), 123256. https://doi.org/10.1016/j.techfore.2024.123256

Saha, S., & Kumar, S. P. (2018). Organizational culture as a moderator between affective commitment and job satisfaction: Empirical evidence from Indian public sector enterprises. *International Journal of Public Sector Management*, *31*(2), 184–206. https://doi.org/10.1108/IJPSM-03-2017-0078

Sekaran & Bougie. (2016). *Research Methods for Business: A skill Building Approach* (7th ed.). John wiley@Sons.

Soleha, D. A., & Musoli. (2024). The Role of Organizational Commitment in Mediating the Influence of Self-Efficacy and Work-Life Balance on Organizational Citizenship Behavior. *International Journal of Economics and Business Issues*, 3(1), 22–33. https://doi.org/10.59092/ijebi.vol3.Iss1.42

Tarihoran, A. D. B., Hubeis, M., Jahroh, S., & Zulbainarni, N. (2023). Market-based dynamic capabilities for MSMEs: Evidence from Indonesia's ornamental fish industry. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(3), 100123. https://doi.org/10.sc1016/j.joitmc.2023.100123

Tsou, H. T., & Hsu, S. H. Y. (2015). Performance effects of technology-organization-environment openness, service co-production, and digital-resource readiness: The case of the IT industry. *International Journal of Information Management*, *35*(1), 1–14. https://doi.org/10.1016/j.ijinfomgt.2014.09.001

Wang, X., Liu, Z., Li, J., & Lei, X. (2023). How organizational unlearning leverages digital process innovation to improve performance: The moderating effects of smart technologies and environmental turbulence. *Technology in Society*, *75*(April), 102395. https://doi.org/10.1016/j.techsoc.2023.102395

Yadav, S., Samadhiya, A., Kumar, A., Luthra, S., Kumar, V., Garza-Reyes, J. A., & Upadhyay, A. (2024). The interplay effects of digital technologies, green integration, and green innovation on food supply chain sustainable performance: An organizational information processing theory perspective. *Technology in Society*, *77*(May), 102585. https://doi.org/10.1016/j.techsoc.2024.102585