

HOW DOES DIGITAL AGILITY ENHANCE ENTREPRENEURIAL PERFORMANCE? A SOCIO-TECHNICAL PERSPECTIVE ON DIGITAL TRANSFORMATION

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Abstract

This study examines the effect of digital agility on entrepreneurial performance, with digital transformation as a moderating variable, grounded in Socio-Technical Systems (STS) theory. A mixed methods approach with a sequential explanatory design was employed. The quantitative phase involved a survey of 120 wood craft entrepreneurs in Tulungagung, Indonesia, selected using purposive sampling and analyzed through Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that digital agility and digital transformation have positive and significant effects on entrepreneurial performance, while digital transformation significantly strengthens the relationship between digital agility and performance. To enrich the quantitative findings, the qualitative phase was conducted through in-depth interviews with 12 participants, consisting of wood craft entrepreneurs, community representatives, and SME facilitators. Qualitative results reveal that performance improvement is driven by the alignment between social systems (adaptive capabilities, learning orientation, and entrepreneurial behavior) and technical systems (digital tools, platforms, and business processes). This study contributes by extending STS theory to explain socio-technical mechanisms in digital entrepreneurship within traditional craft-based SMEs.

Keywords: Digital Agility, Entrepreneurial Performance, Digital Transformation, Socio-Technical Systems.

1. INTRODUCTION

The development of digital technology has fundamentally changed the way organizations and businesses conduct their activities, including in the micro and small craft-based business sector. Digitalization is no longer understood as merely the use of technological devices, but as a transformational process that integrates social, structural, and technical aspects within organizations (OECD, 2025). The increasingly dynamic business environment demands rapid adaptation to digital technology, changing consumer preferences, and increasingly intense global competition (Marfuin & Robin, 2021). This condition places digital capabilities as a strategic factor in improving the sustainability and performance of artisans' businesses, thereby strengthening optimal human capital (Jatmiko, 2020).

Micro, Small, and Medium Enterprises (MSMEs) are the main pillar of the Indonesian economy. In 2023, the number of MSMEs reached more than 66 million units, contributing around 61% to the Gross Domestic Product (GDP) and providing employment for around 117 million workers. However, only about 33.6% of MSMEs

have transitioned to the digital realm, while the majority still rely on conventional marketing and operational methods. This shows that the potential for MSME digitalization is still far from optimal despite significant growth in e-commerce transactions, which are projected to reach more than IDR 487 trillion in 2024 and IDR 503 trillion in 2025 (DinkopUKM Jatim, 2025).

This phenomenon can be explained through Socio-Technical Systems Theory (STS) introduced by Trist and Emery Bamfort (Trist & Bamforth, 1951). STS theory emphasizes that optimal organizational performance can only be achieved when there is joint optimization between social systems, which include people, competencies, values, and work structures, and technical systems, which include technology, processes, and work infrastructure (Appelbaum, 1997; Kemp et al., 2024). An imbalance between these two systems will result in low organizational effectiveness and performance, even if the technology used is modern. The success of digitalization is highly dependent on the ability of organizational actors to adaptively manage interactions between humans and technology (Chowdhury et al., 2022).

Referring to the socio-technical systems theory framework, digital agility is seen as a manifestation of the ability of social systems to respond to and take advantage of changes in technical systems quickly and flexibly (Gonçalves et al., 2022). Digital agility reflects the ability of individuals and organizations to recognize digital opportunities, adapt to new technologies, and continuously adjust business processes (Rojayanti et al., 2024). For woodcraft MSME actors, digital agility is crucial because limited resources demand quick and innovative decision-making in order to survive in a competitive digital environment. Without adequate agility, technology adoption tends to be symbolic and has no significant impact on business performance (Sungthong et al., 2025).

This adaptive capability cannot stand alone without the support of systematic digital transformation (Jatmiko et al., 2025). Digital transformation is a comprehensive change process that includes the integration of digital technology into strategy, organizational structure, business processes, and business value models (Eldon & Sarita, 2025). Digital transformation represents an effort to realign technical and social systems so that organizations can create new value in a sustainable manner (Müller & Hopf, 2017). MSMEs that rely solely on individual agility without structured digital transformation risk experiencing process fragmentation and performance inconsistency. Therefore, digital transformation is seen as a structural context that can strengthen or weaken the influence of digital agility on business performance.

This phenomenon is highly relevant in the context of woodcrafters in Tulungagung, who have long been known for their manual skills and the artistic value of their products, but still face limitations in the strategic use of digital technology. Many businesses have used digital media such as marketplaces or social media, but have not been able to integrate them optimally into their production, marketing, and business management systems. This condition reflects a gap between the technical

systems that are beginning to be adopted and the social systems that are not yet fully ready, as explained in STS theory (Pasmore et al., 2019). As a result, increased technology adoption is not always followed by a significant improvement in business performance (Eldon & Yudiantoro, 2025). The Tulungagung region is known as one of the centers of woodcraft in East Java. Local woodcraft products have high potential in the local and export markets due to their aesthetic value and cultural richness. However, woodcraft businesses face several strategic challenges:

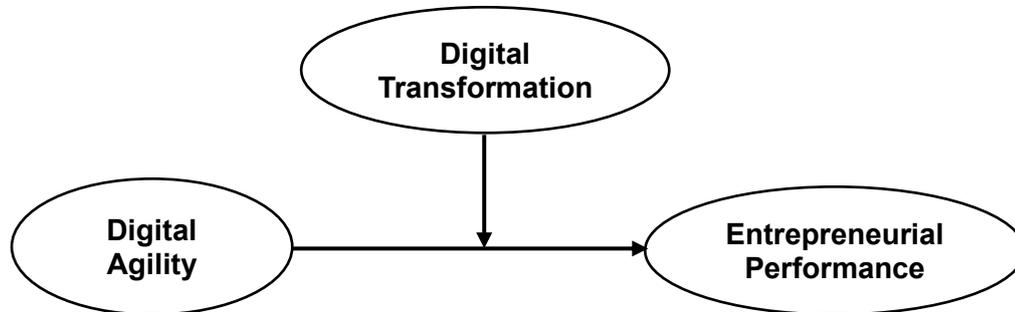
Table 1. Strategic Challenges for Business Actors

Key Issues	Challenge Deskripsi
Limitations of Digitalization	MSME products are often only passively present in the marketplace without SEO optimization, digital marketing, or market data literacy.
Limited Technology Infrastructure	Keterbatasan akses internet cepat dan Limited Access to fast internet and minimal understanding of digital technology hinder the transformation process..
Competition from Imported Products	The dominance of imported products, which account for a large share of the marketplace, limits the space for local crafts to compete
Business Scale and Resource Capacity	Many businesses do not yet have an organizational structure capable of systematically managing digital innovation.

Source: Researcher Observation Data (2025)

Although various studies have examined the impact of digitization and digital transformation on MSME performance, most studies still place technology as the main determining factor without examining in depth the interaction between the adaptive capabilities of business actors and the context of organizational digital transformation (Jewapatarakul & Ueasangkomsate, 2024; Matarazzo et al., 2021). Current literature still describes a significant research gap regarding how digital agility interacts with digital transformation as a moderator in improving business performance, particularly in the context of craft-based MSMEs. Research that specifically examines digital agility as a social capability and the role of digital transformation as a moderating factor within the STS framework is still relatively limited, especially in the craft-based MSME sector in developing countries. Therefore, this study is important to fill the literature gap by integrating the Socio-Technical Systems theory in explaining how digital agility and digital transformation simultaneously contribute to improving the performance of wood crafters in Tulungagung.

Figure 1. Conceptual Framework



Source: Data Processed (2025)

Referring to the research framework, the research pattern and analogy are presented as follows:

RQ1: How does digital agility affect the performance of woodcraft businesses?

RQ2: How does digital transformation affect the performance of woodcraft businesses?

RQ3: How does digital transformation moderate the relationship between digital agility and the performance of woodcraft businesses?

RQ4: How do Socio-Technical Systems (STS) interact in shaping performance improvement mechanisms through digital agility and digital transformation?

2. METHODOLOGY

This study uses a mixed methods approach with an explanatory sequential design, in which the quantitative stage is conducted first to test the causal relationship between variables (Creswell, 2014). Followed by the qualitative stage to deepen and explain the quantitative findings within the framework of Socio-Technical Systems (STS) Theory (Waterson et al., 2015). In the quantitative stage, the study used an explanatory survey design with a population of all woodcraft businesses in Tulungagung Regency, Indonesia, and involved 120 respondents selected through purposive sampling, with the criteria being business actors who had used digital technology (such as social media, marketplaces, or digital business applications) for at least one year.

Quantitative data were collected using a five-point Likert scale questionnaire adapted from previous literature and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) because it is suitable for testing moderation models and the relatively limited characteristics of MSME samples (Hair et al., 2014). The qualitative stage involved 12 participants who were purposefully selected based on quantitative results, consisting of 8 woodcraft entrepreneurs, 2 representatives of artisan communities/associations, and 2 MSME facilitators or local government officials, with the aim of exploring in depth the interaction between social aspects

(competence, work patterns, and decision-making) and technical aspects (use of digital technology) in improving business performance. Qualitative data was collected through semi-structured interviews and analyzed using thematic analysis, then integrated with quantitative results at the interpretation stage to produce a comprehensive understanding of the socio-technical mechanisms that explain the role of digital agility and digital transformation on the performance of woodcraft business actors (Trist & Bamforth, 1951; Waterson et al., 2015; Panpan Zhang et al., 2025).

3. FINDINGS AND DISCUSSION

3.1 Finding

3.1.1 Respondent Characteristics

This study involved 120 woodcraft entrepreneurs in Tulungagung Regency who have utilized digital technology in their business activities. The characteristics of the respondents were analyzed to provide an overview of the socio-economic profile and digital experience of entrepreneurs, which formed the basis for understanding variations in digital agility, the level of digital transformation, and its implications for business performance, as shown in Table 2.

Table 2. Respondent Characteristic

Characteristic	Category	Amount	Percentage
Age	< 30 year	20	16,7%
	30–40 year	44	36,7%
	> 40 year	56	46,6%
Gender	Male	92	76,7%
	Female	28	23,3%
Length of Business	< 5 year	32	26,7%
	5–10 year	48	40,0%
	> 10 year	40	33,3%
Monthly Income	< Rp5.000.000	38	31,7%
	Rp5.000.000–Rp10.000.000	52	43,3%
	> Rp10.000.000	30	25,0%
Length of Time Using Digitalization	< 2 year	34	28,3%
	2–5 year	50	41,7%
	> 5 year	36	30,0%

Source: Researcher Observation Data (2025)

Table 2 shows that the majority of respondents are in the over-40 age group (46.6%), followed by the 30–40 age group (36.7%), while respondents under the age of 30 are relatively fewer. These findings indicate that the woodcraft industry in Tulungagung is still dominated by mature entrepreneurs with extensive work experience. These entrepreneurs have strong production skills but face challenges in adapting to digital technology, making digital agility a capability that is crucial to the success of digital transformation and business performance. The majority of respondents were male (76.7%), reflecting the characteristics of the woodworking sector, which is still dominated by physical and technical work. The 23.3% involvement of women indicates a shift in roles, particularly in digital marketing, administration, and social media management. This

suggests that digital transformation is opening up broader opportunities for participation in the social system of business, emphasizing changes in the roles of social actors as a result of technology adoption.

Most respondents have been running their businesses for more than five years (73.3%), indicating a relatively good level of business sustainability. Long business experience provides strong social capital and market knowledge, but does not automatically guarantee digital readiness in improving business performance, especially amid changes in the digital-based business environment. The majority of business owners' income levels fall within the Rp5,000,000–Rp10,000,000 per month category (43.3%), while business owners with incomes above Rp10,000,000 are still relatively limited. This distribution shows that most business owners are small to medium-sized, making business performance improvement through the use of digital technology highly relevant. When viewed from the characteristics of long-term use of digitalization, it shows that most respondents have been using digital technology for 2–5 years (41.7%), while around 28.3% are still classified as new users. This variation reflects different levels of digital readiness among business actors. Business actors with longer digital experience tend to have better digital agility, while new users are still in the early stages of adaptation.

Overall, the characteristics of the respondents show that woodcraft business actors in Tulungagung have strong business experience, but face challenges in adjusting social and technical systems to improve business performance, so it is necessary to emphasize the importance of harmony between social actors and technological systems.

3.1.2 Inferential Statistics Results of Research

The outer model was evaluated to test the validity and reliability of constructs covering digital agility, digital transformation, and business performance. Convergent validity was evaluated through factor loading values and Average Variance Extracted (AVE), while reliability was measured using Cronbach's Alpha and Composite Reliability (CR).

Table 3. Construct Validity and Realibility Test Result

Variable	Cronbach's Alpha	Composite Reliability	AVE
Digital Agility	0,88	0,91	0,63
Digital Transformation	0,90	0,92	0,66
Entrepreneurial Performance	0,87	0,90	0,60

Source: SEM-PLS Output Data (2025)

The analysis results show that all indicators have loading factors above 0.70, AVE above 0.50, and Cronbach's Alpha and CR values above 0.70, so all constructs are declared valid and reliable. These results indicate that the research instrument has met the criteria for good measurement and is suitable for further structural analysis (Hair et al., 2019).

An inner model evaluation was conducted to assess the predictive power of the structural model through R-square (R^2) and Q-square (Q^2) values.

Table 4. The Value of R^2 and Q^2

Variabel Endogen			R-square	Q-square
Dig. Transformation	Agility →	Dig. Transformation →	0,62	0,41
Entrepreneurial Performance				

Source: SEM-PLS Output Data (2025)

The analysis results show that the R^2 value for the business performance variable is 0.62, which means that digital agility and digital transformation can explain 62% of the variation in business performance, while the rest is explained by other variables outside the model. The result of Q^2 value greater than zero indicates that the model has good predictive relevance. These values show that the research model has strong predictive capabilities, in line with the characteristics of exploratory and predictive research based on SEM-PLS.

Hypothesis testing was conducted using a bootstrapping procedure with 5,000 subsamples to obtain path coefficient values, t-statistics, and p-values, as shown in Table 5.

Table 5 Result of Hypothesis

Hypothesis			Koefisien	t-statistics	p-value	Decision
Dig. Entrepreneurial Performance	Agility →		0,41	4,87	0,000	Accepted
Dig. Entrepreneurial Performance	Transformation →		0,36	4,12	0,000	Accepted
Dig. Transformation Entrepreneurial Performance	Agility*Dig. →		0,19	2,45	0,014	Accepted

Source: SEM-PLS Output Data (2025)

The results of Hypothesis 1 (H1) testing show that digital agility has a positive and significant effect on the business performance of woodcrafters, with a coefficient value of 0.41, t-statistics of 4.87, and a p-value of 0.000. This positive coefficient value indicates that the higher the ability of business actors to adapt quickly and flexibly to changes in digital technology, the higher the business performance achieved. This finding confirms that the adaptive abilities of business actors, such as the speed of responding to digital opportunities, flexibility in changing work methods, and the courage to try new technologies, are key factors in improving the performance of woodcraft MSMEs.

The results of Hypothesis 2 (H2) testing show that digital transformation has a positive and significant effect on business performance, with a coefficient value of 0.36, t-statistics of 4.12, and a p-value of 0.000. These results indicate that the higher

the level of digital technology integration into business processes, marketing, and business management, the better the business performance. Digital transformation in this study reflects not only the use of technology, but also changes in work methods and business structures that are more efficient and data-driven, thereby directly impacting the increased productivity and competitiveness of business actors.

Hypothesis testing 3 (H3), which is a moderation hypothesis, shows that the interaction between digital agility and digital transformation has a positive and significant effect on business performance, with an interaction coefficient value of 0.19, t-statistics of 2.45, and a p-value of 0.014. This finding indicates that digital transformation strengthens the influence of digital agility on business performance. In other words, the positive impact of digital agility on performance will be stronger when businesses are at a high level of digital transformation. Businesses that have good adaptive capabilities but are not supported by adequate digital systems and infrastructure tend to be unable to maximize the potential of digital agility in improving performance.

3.2 Discussion

3.2.1 Digital Agility on Entrepreneurial Performance Woodcraft MSMEs Actors

The results of this study indicate that digital agility has a positive and significant effect on the entrepreneurial performance of woodcraft businesses. These findings suggest that the ability of businesses to respond quickly, flexibly, and adaptively to changes in digital technology is a key factor in improving business performance, both financially and non-financially (Senoaji et al., 2025). In the context of woodcraft businesses facing changes in market tastes, competition from substitute products, and the pressure of digitalization, digital agility acts as a dynamic capability that enables entrepreneurs to continuously adjust their business strategies and processes development.

These findings can be explained through Socio-Technical Systems (STS) Theory, which asserts that organizational performance is the result of harmony between social and technical systems. Digital agility in this study represents social system capabilities, which include individual skills, learning patterns, decision-making methods, and the psychological readiness of business actors to utilize digital technology (Serena et al., 2025). When business actors are able to actively learn, experiment, and adapt to new technologies, the social system can function optimally to support the technical systems used (Gouda & Tiwari, 2022). Improvements in entrepreneurial performance are not solely determined by the technology adopted, but by how entrepreneurs are socially capable of managing and optimizing that technology, as emphasized in the principle of joint optimization in STS theory (Bagheri et al., 2022).

The results of this study are in line with previous empirical findings which confirm that digital agility plays a strategic role in improving organizational and business performance. Hensellek et al., (2023) assert that agility enables

organizations to respond more quickly to opportunities and threats through the use of information technology. Recent studies in the context of MSMEs also show that digital agility contributes to improved performance through accelerated innovation, increased market responsiveness, and operational flexibility (Yu & Moon, 2021). However, most studies have focused on large or technology-intensive sectors, so the context of craft-based MSMEs remains relatively unexplored. The existing literature tends to view digital agility as an organizational capability at the macro level (Chang & Octoyuda, 2024), without exploring in depth how digital agility works in the context of small businesses based on traditional skills such as woodcraft. The results of this study are not supported by several studies that state that digital agility does not have a significant effect on performance, particularly on improving business quality (Elmouhib & Idrissi, 2025; Li & Chalermvongsavej, 2025; Srivastava et al., 2023).

These findings reinforce the argument that an imbalance between social and technical systems can hinder business performance improvement. Businesses that adopt digital technology without accompanying adaptive capabilities and continuous learning tend to experience underutilization of technology. Conversely, businesses with high digital agility are able to utilize technology more strategically, for example by adjusting digital marketing content, utilizing customer data, and changing work processes to be more efficient. This explains why digital agility has a significant direct influence on entrepreneurial performance, even before considering broader digital transformation factors.

3.2.2 Digital Transformation on Entrepreneurial Performance Woodcraft MSMEs Actors

The results of the study show that digital transformation has a positive and significant effect on entrepreneurial performance. These findings indicate that the digital transformation carried out by business actors is not merely the adoption of technology, but reflects fundamental changes in the way businesses are run, from operational processes and marketing to strategic decision-making (Jafari-Sadeghi et al., 2021). In the context of entrepreneurship, particularly in the woodworking industry, digital transformation is an important means of improving efficiency, expanding market reach, and creating sustainable added value.

From the perspective of Socio-Technical Systems (STS) Theory, digital transformation is understood as an integrative process that aligns technical systems (digital technology, online platforms, information systems) with social systems (work patterns, organizational culture, business actor competencies, and decision-making structures). STS emphasizes that performance improvement can only be achieved if transformation in technical systems is balanced with changes in social systems (Abbas & Michael, 2025). The findings of this study support this principle, whereby comprehensive digital transformation can drive entrepreneurial performance through the optimization of interactions between technology and business actors.

The results of this study are in line with a number of previous studies that state that digital transformation contributes significantly to improving organizational and business performance (Kusumawati & Anik, 2023; Ratnasari, 2023; Rukayah et al., 2024). Bormane & Blaus (2024) explain that digital transformation enables organizations to create new value through process and business model innovation. Chuang (2020) emphasizes that digital transformation acts as a strategic mechanism that helps organizations adapt to a rapidly changing environment. The results of this study are not fully supported by other studies showing that the integrated use of digital technology has not been able to improve business performance through increased flexibility and market responsiveness (Adewumi & Abasilim, 2024; Cedaryana et al., 2025; Pajrudin & Wahyuningtyas, 2024).

This study fills this gap by providing empirical evidence that digital transformation still plays a significant role in improving entrepreneurial performance, even when applied to the woodcraft business sector. Digital transformation in this context does not always take the form of complex technology use, but rather a change in mindset and operating methods, such as the use of social media for marketing, the use of digital platforms for transactions, and the digitization of communication with customers and business partners. This confirms that the essence of digital transformation lies in changing processes and values, not merely in technological sophistication.

3.2.3 The Moderating Role of Digital Transformation Woodcraft MSMEs Actors

The results of the study indicate that digital transformation significantly moderates the relationship between digital agility and entrepreneurial performance. These findings suggest that the influence of digital agility on entrepreneurial performance is not universal or independent, but rather highly dependent on the level of digital transformation implemented by businesses. These results indicate that the ability of business actors to adapt quickly and flexibly to digital changes will have a stronger impact on performance when supported by adequate digital transformation (Meuter et al., 2000; Moordiningsih et al., 2024).

From the perspective of Socio-Technical Systems (STS) Theory, the moderating role of digital transformation can be understood as a mechanism that aligns social capabilities (digital agility as the ability of individuals or business actors) with technical capabilities (digital transformation as technology-based systems, infrastructure, and processes). STS emphasizes that optimal performance can only be achieved when social and technical systems develop in harmony (Govers & van Amelsvoort, 2023). The findings of this study reinforce this assumption by showing that digital agility will be more effective in improving entrepreneurial performance if business actors have carried out digital transformation that is integrated into their business operations (Y. Zhang et al., 2023).

These results are in line with research stating that the adaptive capabilities of individuals or organizations require digital system support in order to produce superior

performance (Tana & Chai, 2023). These findings are also supported by research confirming that digital transformation serves as a strategic context that enables dynamic capabilities, including agility, to be optimized (Akhtar et al., 2024; Alroud, 2025). This finding is reinforced by the result that adaptive capabilities will only have a significant impact on performance if supported by the right configuration of resources and technology (Markhumah et al., 2025; Sijabat & Hardianawati, 2024).

This study fills this gap by showing that digital transformation acts as an enabling condition that strengthens the contribution of digital agility to entrepreneurial performance. For woodcraft businesses, digital agility, such as the speed of learning new technologies, flexibility in digital marketing, and the ability to respond to market demand online, will not produce optimal performance if it is not accompanied by digital transformation that includes the use of digital platforms, electronic payment systems, and the digitization of communication and distribution processes.

3.2.4 Socio-Technical Systems (STS) in shaping performance improvement mechanisms through digital agility and digital transformation

Qualitative analysis shows that the improved performance of woodcraft businesses cannot be understood solely as a direct result of digital technology adoption or individual capabilities, but rather as the result of dynamic interactions between social and technical systems, as explained in the Socio-Technical Systems (STS) Theory framework. In-depth interviews with business actors, representatives of artisan communities, and MSME facilitators revealed that the success of business digitalization is largely determined by the extent to which digital technology can be integrated with the work patterns, values, and competencies of business actors.

From the social system perspective, digital agility emerged as a key capability reflected in how business actors respond to changes in the business environment. Most informants stated that they initially did not have a strong digital background, but were compelled to learn independently due to market pressures and changes in consumer behavior (Jatmiko, 2022). One business owner said:

“At first, I just tried selling through WhatsApp and Facebook, but over time I had to quickly adapt to new trends, such as short videos or online catalogs”.

This statement shows that digital agility does not always arise from formal competencies, but rather from a continuous adaptive learning process, in line with the characteristics of social systems in STS (Elmouhib & Idrissi, 2025).

The interview results also reveal that digital agility alone is not sufficient to drive performance improvement if it is not supported by an adequate technical system. Several business actors stated that even though they have the desire and ability to adapt, limitations in the digital system often become an obstacle. One informant stated that:

“We want to join the marketplace, but the recording is still manual, the stock is often out of sync, and we end up overwhelmed”.

These findings reveal an imbalance between adaptive social systems and untransformed technical systems, which, from an STS perspective, has the potential to reduce performance effectiveness (Stankevičiute et al., 2020). Informants understand digital transformation not as the use of complex technology, but as a change to a more structured and digital-based way of working. Business actors who have implemented digital transformation more consistently, such as the use of scheduled social media, digital payment systems, and platform-based customer communication, show more noticeable performance improvements. One craftsman stated that:

“Since using a digital payment system and simple recording in the application, the business has become more organized and turnover has increased”.

This statement confirms the role of technical systems in creating efficiency and clarity in business processes. The interaction between digital agility and digital transformation forms a socio-technical mechanism that drives improved entrepreneurial performance. Digital agility enables business actors to recognize opportunities and respond to changes quickly, while digital transformation provides the infrastructure and processes that enable these responses to be realized effectively. In STS terms, this condition reflects the joint optimization between social and technical systems, where both reinforce each other in producing optimal performance (Monferrer et al., 2021).

Qualitative findings also reveal that when digital transformation is not running smoothly, digital agility tends to result in additional workload rather than improved performance. Several informants stated that the use of digital media without a clear system actually made them feel overwhelmed. This shows that disharmony between social and technical systems can create tension (socio-technical misfit), which has a negative impact on business performance. Conversely, when digital transformation is structured, digital agility functions as a performance accelerator, not just a survival tool.

The results of this study reinforce the view that digital transformation acts as a structural context that enables digital agility to function productively. Digital transformation creates rules, workflows, and support systems that channel the adaptive capabilities of business actors towards economic value creation. This explains why, in quantitative analysis, digital transformation has been shown to moderate the relationship between digital agility and entrepreneurial performance.

Overall, these qualitative findings provide a deep understanding of the internal mechanisms of how digital agility and digital transformation work simultaneously to improve entrepreneurial performance. Using the Socio-Technical Systems approach, this study shows that performance improvement is not the result of technology or humans separately, but rather the harmony and interaction between the two in the daily business practices of woodcraft entrepreneurs. These findings not only reinforce the quantitative results, but also provide a conceptual contribution by explaining the

socio-technical processes underlying the relationships between variables in the research model.

4. CONCLUSION

The results of quantitative analysis show that digital agility has a positive and significant effect on entrepreneurial performance. Digital transformation has also been proven to have a direct effect on entrepreneurial performance, indicating that changes in work methods, business processes, and the use of digital technology are strategic factors in improving business efficiency and competitiveness. Digital transformation can act as a moderating variable that strengthens the influence of digital agility on performance, so that the adaptive capabilities of business actors will have a more optimal impact when supported by adequate digital systems and infrastructure. Qualitative findings deepen the understanding of these results by showing that successful business performance improvement is the result of harmony between social and technical systems, as explained in the Socio-Technical Systems (STS) Theory framework. This study confirms that improved entrepreneurial performance is not the result of technology adoption or individual capabilities in isolation, but rather the integration of both within a coherent socio-technical system, particularly in the context of Indonesian craft sector MSMEs.

ACKNOWLEDGEMENTS

The author would like to express sincere appreciation to all parties who have provided support and contributions to this research. Special thanks are extended to the respondents who participated in this study, as well as all individuals who kindly assisted in data collection and analysis. Without their hard work and contributions, this research would not have been possible. Once again, thank you for the dedication and outstanding cooperation of everyone involved in this research.

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