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Unleashing Financial Performance in MSMEs: The Synergy Between Digital Transformational Leadership and Organizational Agility

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Abstrak

Keterlibatan kepemimpinan dan kelincahan organisasi sangat penting bagi organisasi dalam mendorong kinerjanya, secara khusus kinerja keuangan. Penelitian ini mengkaji peran kepemimpinan transformasional digital dalam meningkatkan kinerja keuangan UMKM melalui ketangkasan organisasi. Namun, studi yang berfokus kepada peran kepemimpinan transformasional digital belum banyak dikembangkan, khususnya pada konteks UMKM. Fokus studi ini adalah pada UMKM di Sumatera Utara, dengan sampel sebanyak 138 karyawan. Metode analisis yang digunakan adalah Structural Equation Modeling (SEM) untuk menguji hubungan antara variabel-variabel yang diteliti. Temuan penelitian menunjukkan bahwa kepemimpinan transformasional digital dan ketangkasan organisasi memiliki dampak positif signifikan terhadap kinerja keuangan, diikuti oleh kepemimpinan transformasional digital berpengaruh positif terhadap ketangkasan organisasi. Ketangkasan organisasi, pada gilirannya, berperan sebagai mediator yang kuat dalam hubungan antara kepemimpinan transformasional digital dan peningkatan kinerja keuangan UMKM. Penelitian ini memberikan panduan teoritis dan praktis bagi peneliti dan manajer yang tertarik untuk mengembangkan strategi peningkatan kinerja keuangan melalui kepemimpinan transformasional digital dan ketangkasan organisasi di sektor UMKM. Kontribusi teoretis lainnya, implikasi praktis, dan arah penelitian masa depan juga dibahas dalam studi ini.

Kata Kunci: Kepemimpinan Transformasional Digital; Ketangkasan Organisasi; Kinerja Keuangan; UMKM.

Abstract

Leadership engagement and organisational agility are crucial for organisations in enhancing their performance, particularly in terms of financial performance. This study investigates how digital transformational leadership contributes to enhancing the financial performance of micro, small, and medium enterprises (MSMEs) by fostering organisational agility. Nevertheless, there is a lack of extensive research on the significance of digital transformational leadership, particularly within the context of MSMEs. This study specifically examines MSMEs located in North Sumatra. The



sample size for this study consists of 138 employees from various organisation. The chosen analytical approach is Structural Equation Modelling (SEM), which is employed to examine the relationship between the variables under investigation. The research findings indicate that both digital transformational leadership and organisational agility have a substantial and beneficial influence on financial performance. Furthermore, it is observed that digital transformational leadership has a good impact on organisational agility. Organisational agility serves as a powerful intermediary in the connection between digital transformative leadership and enhanced financial performance of MSMEs. This study offers theoretical and practical advice for researchers and managers who are interested in devising methods to enhance financial performance in the MSME sector by implementing digital transformational leadership and fostering organisational agility. This study also examines other theoretical and practical contributions, and future research objectives.

Keywords: *Digital Transformastional Leadership; Organizational Agility; Financial Performance; MSME.*

Introduction

The participation of Micro, Small, and Medium Enterprises (MSMEs) in a nation's economic development remains a focal point in policy discourse across numerous countries (Surya *et al.*, 2021; Endris and Kassegn, 2022). Micro, Small, and Medium Enterprises (MSMEs) are seen as pivotal in generating more employment opportunities than larger corporations (Yazdanfar and Öhman, 2019; Mishra, 2020). As a result, the government and the private sector have initiated efforts to promote the establishment and expansion of MSMEs to fortify the national economy. Nonetheless, the participation of MSMEs in the worldwide development of the nation's economy is fraught with obstacles. Micro, Small, and Medium Enterprises (MSMEs) typically encounter significant obstacles, including limited access to business information and financial resources, insufficient capital, inadequate human resources, poor management capabilities, and a low capacity for technological adoption (Oliva *et al.*, 2019; Ferraris, Santoro and Pellicelli, 2020). The deployment of technology remains the foremost problem among these impediments (Rupeika-Apoga and Petrovska, 2022). MSMEs frequently struggle to use digital technologies efficiently, in contrast to larger corporations. When MSMEs implement digital technology, they can enhance sales, foster strong client relationships, and ensure organizational performance (Chang and Octoyuda, 2024).

Digital transformation has emerged as a significant phenomenon impacting several sectors, especially MSMEs. This transformation encompasses both technological use and alterations in organizational operations and consumer interactions (Chang, Octoyuda and Arisanti, 2023). A critical aspect in the success of digital transformation is the impact of organizational leaders who can propel this change (Octoyuda, Siagian and Putri, 2023). Leaders possessing a robust digital vision who can inspire and motivate organizational members to embrace and leverage digital technology can effectuate substantial transformations within the organization (AlNuaimi *et al.*, 2022).

In the context of digital transformation, the significance and complexity of leadership are escalating (AlNuaimi *et al.*, 2022). Leaders must guide the organization to actively engage in the digitalization process by articulating a clear vision for digitalization. In this setting, effective leadership is referred to as digital transformative leadership (Frankowska and Rzezzycki, 2020). Digital transformational leaders possess a compelling vision and can effectively inspire and motivate organizational members to embrace and implement digital technology (Frankowska and Rzezzycki, 2020). Digital transformative leadership is essential for fostering organizational agility (Ly, 2023). Organizational agility denotes an organization's capacity to adjust swiftly and efficiently to change (Žitkienė and Deksnys, 2018). Transformational leaders foster a culture of creativity, cooperation, and continuous learning (Nasir, Zakaria and Zien Yusoff, 2022), which enhances organizational agility (Ly, 2023). Enhanced agility enables MSMEs to more readily adjust their business strategies in response to market fluctuations, technological advancements, and evolving client demands (Correani *et al.*, 2020). Furthermore, digital transformational leaders promote creative thinking and collaboration among organizational members to devise novel solutions to current difficulties (Veiseh,

Shiri and Eghbali, 2014). Digital transformative leaders underscore the need of perpetual learning to guarantee that all organizational members are consistently prepared to confront change (Petry, 2018). This strategy enables digital transformational leaders to foster an environment conducive to swift and effective adaptation to change, hence enhancing overall organizational performance. As a result, digital transformational leadership promotes the adoption of new technologies and fosters the cultivation of an agile organizational culture (Ly, 2023). This agility enables MSMEs to adapt to change more swiftly and effectively, enhance business processes, and bolster competitiveness in a dynamic market.

Enhancing the organizational agility through digital transformative leadership directly influences the financial performance of MSMEs (Son, Phong and Loan, 2020). Agile organizations can discern new opportunities, enhance business processes, and elevate operational efficiency (Morakanyane, O'Reilly and McAvoy, 2020), hence augmenting the income and profitability of MSMEs. With the advancement of digital technology, organizations are investing in infrastructure to digitize their processes to enhance competitiveness and performance (Chatterjee and Mariani, 2022). The digitalization of corporate operations and infrastructure seeks to enhance financial performance (Abou-foul, Ruiz-Alba and Soares, 2021). Nonetheless, enhancing financial performance through the application of digital technology cannot be fully achieved without appropriate implementation. Consequently, digital transformation inside organizations can be converted into competitive advantages and enhanced financial performance, for instance, by employing digital business apps that facilitate superior operational execution.

The impact of digital technology on enhancing financial performance remains confined to major corporations (Zangiacomi *et al.*, 2020; Buer *et al.*, 2021). To enable MSMEs to compete effectively, they must enhance their competencies. This empirical study intends to investigate the impact of digital transformational leadership on enhancing the financial performance of MSMEs by fostering organizational agility. This study enhances and expands the existing comprehension of the determinants affecting the financial performance of MSMEs. This study conceptually enhances the empirical comprehension of the influence of digital transformative leadership and organizational agility on the financial performance of MSMEs. This study offers practical insights for practitioners, aiding MSME leaders in formulating effective digital transformation plans, enhancing organizational agility, and ultimately, improving financial performance.

Literature Review

Leadership and MSMEs Financial Performance

Diverse interpretations of organizational performance, contingent upon stakeholder expectations (Zhang, Oo and Lim, 2022). Kijkasiwat and Phuensane (2020) elucidated that the administration of human, financial, and material resources in the pursuit of the organization's vision signifies organizational effectiveness. Organizational success comprises three distinct components: financial performance, product market performance, and shareholder returns (Richard *et al.*, 2009). Meanwhile, Okafor, Adeleye and Adusei (2021) asserted that

the formal evaluation of corporate performance is contingent upon the organization's financial outcomes. Current research focuses on financial performance to evaluate finance, a crucial component of organizational performance, as it underpins the organization's survival and competitiveness (Zeng *et al.*, 2020; Anwar and Li, 2021). The financial performance of an organization reflects its capacity to create revenue through the utilization of its assets (Soewarno and Tjahjadi, 2020).

Various leadership styles exert distinct influences on organizational performance outcomes, as demonstrated by Son *et al.*, (2020) in their research on the correlation between leadership and financial success. Bass (1985) noted that leadership roles are among the most successful ways for enhancing organizational performance at both individual and group levels. Numerous prior studies have delineated the positive association between organizational performance and leadership (Sarwar *et al.*, 2020; Son, Phong and Loan, 2020; Dahleez and Abdelmunim Abdelfattah, 2022). Nevertheless, there is a paucity of research that expressly focuses on transformational digital leadership within SMEs. Digital transformational leadership pertains to the integration of digital technology with transformational leadership. Digital transformational leadership is acknowledged as a crucial element in enhancing organizational performance through the adaptation to technological trends, the facilitation of digital change, and the guidance of organizational direction. Bass (1985) contends that transformational leaders enhance organizational performance by inspiring and encouraging individuals to exceed expectations in their work and outcomes. Zhao *et al.*, (2021) established a system that provides organizational guidance, energy, and motivation, thereby generating exceptional possibilities for people to learn and innovate, enhancing organizational performance. Anning-Dorson (2021) asserted that superior organizational performance results from the cultivation of organizational culture, which is fostered by the application and practice of leadership styles inside an organization. The aforementioned reasons underscore the significant impact of leadership on organizational performance, particularly in terms of financial outcomes. To enhance the understanding of the influence of digital transformative leadership on financial success. Consequently, we put up the subsequent hypothesis:

H1: Digital transformational leadership significantly and positively influence the MSMEs financial performance.

Organizational Agility and MSMEs Financial Performance

Recent study indicates a beneficial effect of organizational agility on organizational performance. Ly (2023) demonstrated that organizational agility enhances a organization's competitiveness. Moreover, Anning-Dorson (2021) discovered that the capacity to swiftly and adaptively recognize imminent dangers and capitalize on opportunities might enhance organization performance, particularly in unstable circumstances. Accordingly, Ravichandran (2018) asserted that agility propels organizations to enhance their financial performance. The beneficial effect on financial performance has been acknowledged to influence operational (Al-Nimer, 2019), strategic (Shin *et al.*, 2015) dan market agility (Zhou, Mavondo and Saunders, 2019). Empirical investigations of large enterprises

dominate the existing literature, but the correlation between agility and SME success remains significantly under-explored. There is scant data indicating that agility positively influences financial performance in turbulent circumstances (Shin *et al.*, 2015). Furthermore, agility allows SMEs to utilize knowledge that enhances performance (Audretsch and Belitski, 2021). Consequently, we assert that:

H2: Organizational agility significantly and positively influence the MSMEs financial performance.

Leadership and Organizational Agility in the Era of Digital Transformation

Recent studies interpret organizational agility as an embodiment of adaptability, communication, and the maturity of teams and individuals. Teams characterized by motivation, talent, self-discipline, organization, and exceptional improvisational skills exemplify an agile organization (Stettina and Heijstek, 2011). Effective leadership is essential to disseminate inspiration and cultivate organizational talent and self-discipline, hence enhancing team motivation and confidence (Ouakouak, Zaitouni and Arya, 2020). Consequently, organizational leadership is essential for implementing the organization's commitment to enhancing agility (Ly, 2023). Digital transformation perceives leadership competencies as a set of tasks essential for managing organizational change. These competencies encompass charismatic, instrumental, and institutional dimensions (Meslec *et al.*, 2020). Transformational leadership is characterized by a leader's ability to influence the values, attitudes, and emotions of their followers (Bass and Avolio, 1994). These leaders can improve organizational agility by cultivating strong relationships with subordinates, motivating them to prioritize collective interests over individual demands, and functioning adeptly in complicated and high-risk environments. Transformational leaders prepare themselves and their subordinates to effectively address future challenges and opportunities (Veisheh, Shiri and Eghbali, 2014). Agile organizations are defined by leadership that continually alters the trajectory of development and action.

Numerous studies have highlighted the significance of leadership in facilitating and promoting the transition to Industry 4.0 (Porfírio *et al.*, 2021). Leaders that can propel enterprises to adopt the latest technological developments, establish the trajectory for digital transformation, and adeptly guide teams to adapt swiftly and effectively are deemed competent in digital transformation (Swift and Lange, 2018). Leaders possessing a digital transformation perspective, known as "digital leaders," are capable of constructing collaborative organizational networks and recognizing digital capabilities (Frankowska and Rzeczycki, 2020). The literature on digital transformation notably highlights transformational leadership in the context of leadership within the digital landscape. Transformational leaders are distinguished by their capacity to cultivate trust, their aspiration to promote leadership in others, their readiness to make personal sacrifices, and their function as ethical actors. These leaders focus their attention, as well as that of their followers, on objectives that transcend the immediate requirements of the work group (Avolio, 1999). Consequently, digital leadership is regarded as a transformational leadership style that effectively integrates digitalization competencies (Kret, Massen and de Waal, 2022).

In the context of the current investigation, transformational leadership was found to have an impact on e-business adoption (Alos-Simo, Verdu-Jover and Gomez-Gras, 2017) and enhance organizational agility (Veiseh, shiri and Eghbali, 2014). In addition, transformational leadership influences the performance of innovation initiatives (de Oliveira et al., 2012), organizational innovation (Pirayesh dan Pourrezay, 2019), and organizational creativity (Veiseh dan Eghbali, 2014). Transformational leadership can also enhance organizational learning orientation to achieve a more advanced level of organizational agility, which is a manifestation of organizational agility (Ly, 2023). Furthermore, AlNuaimi *et al.*, (2022) showed that transformational leadership has a significant and beneficial impact on the agility of public sector organizations and improves service recovery performance. Therefore, we hypothesize that:

H3: Digital transformational leadership significantly and positively influence the organizational agility.

Digital Transformational Leadership, Organizational Agility, Kepemimpinan Transformasional Digital, and Financial Performance

Dacin *et al.*, (2002) demonstrate that change can jeopardize organizational convictions. They emphasize the significance of a novel strategy for managing change. Suddaby, Seidl and Lê (2013) assess the appropriate strategy for conceptualizing change, specifically focusing on the players engaged in strategic endeavors based on their experiences. Nonetheless, digitalization is not an initiative or program that can be accomplished swiftly. Organizations must comprehend the appropriate and adaptive strategies required to compete in the era of digitalization (Lipsmeier *et al.*, 2020). Consequently, during the shift to digitalization, organizations require appropriate leadership competencies that can foster innovation capabilities, thereby enhancing organizational performance (Correani *et al.*, 2020).

Organizational agility is crucial for enabling organizations to adapt to digital transformation. Prior research indicates that leadership can enable organizations to respond swiftly to change (Ly, 2023), therefore influencing organizational performance. Mrugalska and Ahmed (2021) underscore this concept by demonstrating the crucial role of organizational agility in facilitating this transformation. This study defines organizational agility as the capacity of a system to effectively respond to swiftly evolving demands and external stimuli in a cost-efficient way, while maintaining the quality of its products and services (Ly, 2023). An organization's adeptness at swiftly responding to change signifies its capacity to adapt to volatility. The capacity of an organization to respond swiftly is termed "organizational agility." Consequently, an organization's capacity to swiftly accept digital technological advances will enhance its performance.

The engagement of digital leadership can significantly influence organizational agility and enhance overall performance success. The appointment of a chief digital officer is essential for organizations to execute digital-centric strategies aligned with their vision and mission (Henriette, Feki and Boughzala, 2015). Organizations with a distinct vision for digital transformation can enhance decision-making processes, resulting in increased organizational performance (Mikalef *et al.*, 2019). In accordance, Chang, Octoyuda and Arisanti, (2023) asserted

that leaders play a pivotal role in enabling organizations to adapt during the transition to digital technology, which enhances organizational performance. Consequently, we put up the subsequent hypothesis:

H4: Organizational Agility significantly and positively mediates the relationship between digital transformational leadership and financial performance.

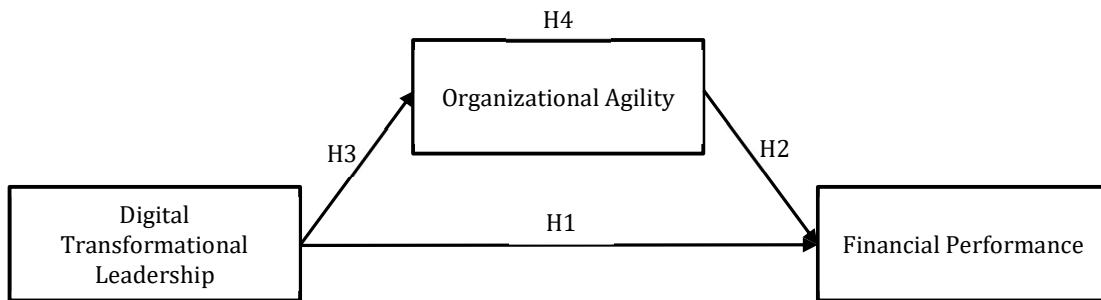


Figure 1. Conceptual Framework

Research Method

Measurement and Data Analytics

This study investigates the correlation between exogenous and endogenous characteristics, specifically digital transformational leadership and financial performance, with organizational agility serving as a mediating factor in MSME sector businesses. The data utilized in this study are primary data acquired from disseminated questionnaires. This research survey comprises three sections, specifically evaluating the digital transformational leadership evaluation instrument derived from Chen & Chang (2013). Additionally, the organizational agility measure utilized has been adapted and modified Cegarra-Navarro et al., (2016). The last objective is to assess the financial performance of MSMEs with measurements from Agyabeng-Mensah et al., (2020). The chosen organizations are MSMEs that implement digital technology in their operational procedures.

The measuring items employ a 5-point Likert scale, with values ranging from 1 (strongly disagree) to 5 (strongly agree). The data collection technique employs an online survey methodology utilizing Google Forms, with questionnaires sent through WhatsApp and Email. The data gathering method spanned three months, from March to May 2024, to obtain questionnaires from the research sample. The overall research sample derived from the questionnaire distribution was 138 samples. Table 1 presents the demographic information of the participants.

Subsequent to data collection, the data was analyzed and presented utilizing Partial Least Squares-Structural Equation Modeling (PLS-SEM) version 3.3.3. PLS-SEM is employed because of its capability to simultaneously assess measurement devices and conceptual models. This study assesses comprehensive reasoning to examine causal relationships grounded in a robust theoretical framework; thus, the SEM test was selected as the data analysis method, with PLS-SEM employed to

manage model complexity, presenting fewer constraints than alternative methods (Ringle, Sarstedt and Straub, 2012) and yielding valid results even with small to medium sample sizes (Chin, 1998).

Table 1. Characteristics of Demographic (N = 138)

Respondents Characteristic	Item	Frequencies	%
Gender	Male	71	51.45
	Female	67	48.55
Age	< 30	32	23.2
	31 – 50	100	72.5
	> 50	6	4.3
Organizational Type	Micro	39	28.26
	Small	39	28.26
	Medium	60	43.48
Year of Establishment	Before 2006	68	49.3
	2006 – 2011	9	6.5
	2012 – 2017	21	15.2
	2017 – 2023	40	29
Industrial Sector	Manufactures	20	14.5
	Trading	47	34.1
	Services	71	51.4

Source: Processed data

Result and Discussion

Measurements Model and Structural

This study evaluates internal consistency to determine construct reliability based on the acceptable thresholds of Cronbach's Alpha and Composite Reliability (CR), with a Cronbach's Alpha minimum of 0.5 (Hair et al., 2010) and a CR minimum of 0.70 (Hair et al., 2014). Additionally, we assess outer loading to quantify the correlation between a factor and its associated variable by examining the resultant value, which exceeds 0.7 (Hair et al., 2010). The study results indicate that the total factor loading values satisfy the requisite threshold of 0.7. Table 2 encapsulates the findings of convergent validity and internal consistency dependability. Moreover, all indicators and structures provided satisfy the necessary threshold. Furthermore, the findings indicate that the Composite Reliability value ranges from 0.932 to 0.937, exceeding the requisite minimum threshold. The AVE value demonstrates favorable outcomes, above the minimum requirement of 0.50 (Hair et al., 2010), with a range of 0.733 to 0.875. Subsequently, we evaluate the construct's reliability by internal consistency measurement analysis, yielding appropriate Cronbach's Alpha values ranging from 0.857 to 0.916. The study's results demonstrate that the model has strong convergent validity and internal consistency.

Moreover, discriminant validity assesses the distinction of a unique construct from its components. We assess the discriminant validity of the assessment by verifying if the square root of the AVE for each construct exceeds its

correlation with other components. Table 2 demonstrates that the square root of the Average Variance Extracted (AVE) for each construct exceeds the correlation between any two components, hence validating the established discriminant validity criterion (Fornell and Larcker, 1981). The requirements for discriminant validity are defined in Tables 3 and 4.

Additionally, we do a collinearity assessment prior to evaluating the structural model. Collinearity is assessed by calculating the Variance Inflation Factor (VIF), with an optimal cutoff value of less than 0.5. The study's results indicated that the VIF values for OA2, FP2, and FP4 exceeded the designated threshold. To address the elevated collinearity, Hair et al., (2017) recommended the removal of measurement markers that beyond the established threshold. Additionally, we performed an R² test for each endogenous construct, which demonstrates the model's predictive strength by indicating the variation of endogenous factors that can be elucidated by exogenous variables. The structural model is deemed satisfactory if the R² value surpasses 0.1 or nears 1. The analysis indicates that the organizational agility construct has an R² value of 0.205, attributed to the digital transformational leadership route coefficient. The financial performance construct exhibits an R² value of 0.374, derived from the digital transformational leadership route coefficient and organizational agility. The R² value for endogenous constructs in the study model exceeds 0.1, hence signifying adequacy.

The goodness of fit was assessed using SmartPLS, yielding a standardized root mean square residual (SRMR) of 0.056 and a normed fit index (NFI) of 0.819. The SRMR value is under 0.08, signifying that the data aligns with the model (Hu and Bentler, 1999; Henseler, Ringle and Sarstedt, 2015), meanwhile the NFI value ranges from 0 to 1, with proximity to 1 suggesting superior fit (Lohmöller, 1989).

Table 2. Construct Validity and Internal Consistency

Construct	Items	Factor Loading	AVE	CR	Cronbach's Alpha
Digital Transformational Leadership	DTL1	0.889	0.750	0.937	0.916
	DTL2	0.858			
	DTL3	0.888			
	DTL4	0.881			
	DTL5	0.811			
Organizational Agility	OA1	0.805	0.733	0.932	0.908
	OA3	0.897			
	OA4	0.917			
	OA5	0.812			
	OA6	0.842			
Financial Performance	FP1	0.937	0.875	0.933	0.857

Note: OA2, FP2, and FP4 must be eliminated since it fails to meet the benchmark.

Source: Processed data

Table 3. Fornell-Larcker Criterion

	DTL	OA	FP
DTL	0.886		
OA	0.452	0.856	
FP	0.517	0.525	0.936

Note: The square root value of AVE is indicated by the numbers printed in bold and marked in blue, while the remaining numbers represent the correlations between constructs.

Source: Processed data

Table 4. Cross Loading Matrix

	DTL	OA	FP
DTL1	0.889	0.426	0.460
DTL2	0.858	0.363	0.475
DTL3	0.888	0.410	0.462
DTL4	0.881	0.350	0.405
DTL5	0.811	0.401	0.431
OA1	0.351	0.805	0.363
OA3	0.393	0.897	0.499
OA4	0.420	0.917	0.465
OA5	0.380	0.812	0.411
OA6	0.387	0.842	0.492
FP1	0.494	0.496	0.937
FP3	0.473	0.486	0.933

Source: Processed data

Hypotheses Results

This research employs SmartPLS to evaluate the presented hypothesis. The analysis demonstrates that the direct effect of H1 ($\beta = 0.352$; $p = 0.000$) is validated, indicating that digital transformational leadership statistically influences financial performance directly. Additionally, the outcome of H2 ($\beta = 0.366$; $p = 0.000$) substantiates the presence of a direct correlation between organizational agility and financial performance, hence validating H2. The study demonstrates a direct correlation between digital transformative leadership and financial performance, leading to the acceptance of H3 ($\beta = 0.452$; $p = 0.000$). The mediation effect results indicate that organizational agility fully mediates the association between digital transformational leadership and financial performance, with a coefficient of $\beta = 0.166$ and $p = 0.000$, hence supporting hypothesis H4 (refer to table 5).

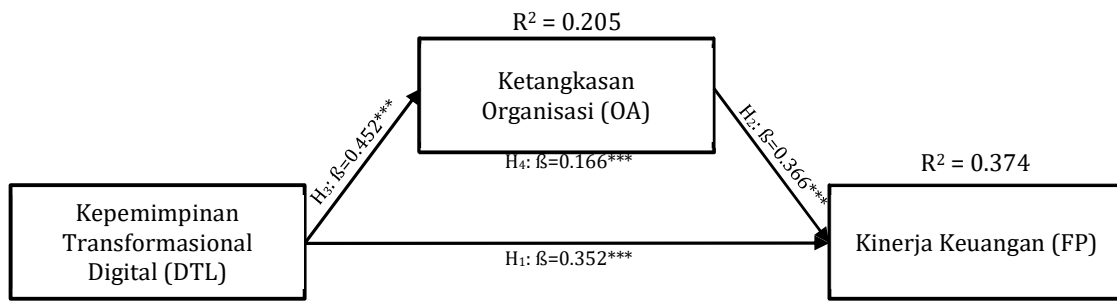


Figure 2. Structural Model Results

Source: Processed data

Table 5. Hypotheses Testing

Causal Relationship	β	t-Value	p-Value	Conclusion
Direct Relationship				
H ₁ : DTL → FP	0.352	5.474	0.000	Accepted***
H ₂ : OA → FP	0.366	5.225	0.000	Accepted***
H ₃ : DTL → OA	0.452	4.869	0.000	Accepted***
Mediating Relationship				
H ₄ : DTL → OA → FP	0.166	3.748	0.000	Accepted***

Note: *** $p < 0.001$

Source: Processed data

Discussion

This study assesses the conceptual framework comprising digital transformational leadership, organizational agility, and the financial performance of MSMEs. This study investigates the interplay among these variables and their combined influence on financial performance, considering the mediating role of organizational agility. The outcomes of the proposed hypotheses are meticulously analyzed and articulated as follows:

First, H₁ verifies that executives possessing a digital mindset significantly influence the enhancement of their financial achievement. Digital transformational leadership integrates the principles of transformational leadership with the effective use of digital technology to facilitate and promote the transition to Industry 4.0. According to Li *et al.*, (2021), transformational leadership significantly impacts the execution of intended changes during digital transformation. The findings indicate that organizations led by individuals with a digital mentality can enhance performance, if they are prepared to embrace change. Darvishmotevali et al., (2020) assert that enterprises must modify their processes, structures, and management to facilitate organizational change, particularly to enhance performance during the digital transformation period. Organizations must prioritize enhancing their performance capabilities by employing effective organizational learning methodologies (Menon & Suresh, 2021). Furthermore, they advocate for the use of

suitable human resource techniques to enhance the adaption process within the digital environment, consequently yielding a more significant effect on organizational performance, particularly its financial outcomes.

Secondly, H2 contends that agile businesses can enhance performance. Organizational agility refers to an organization's capacity to swiftly respond to and adapt to changes in both the external and internal environments (AlNuaimi *et al.*, 2022). In the digital age, organizational adaptability is acknowledged as essential for survival and success amid technological upheaval (Chan *et al.*, 2019). Consequently, the utilization of digital technology is favorably associated with organizational agility. The data analysis results confirm that organizational agility is favorably associated with organizational performance. This finding aligns with other research indicating that the adoption of an agile organization can enhance performance (Troise *et al.*, 2022). The analysis indicates that organizational agility has effectively enabled organizations to confront environmental instability. Agile organizations achieve success for the organization. According to Eckstein *et al.*, (2023), organizational flexibility in digital transformation effectively enables organizations to swiftly respond to current circumstances, thereby enhancing their reliability in addressing market demand, which subsequently improves organizational performance.

The capacity of organizations to swiftly and effectively adjust in a dynamic digital environment hinge on the caliber of leaders capable of facilitating the shift to digital technology for the purposes of innovation and adaptability. Consequently, the role of leaders is essential in fostering organizational adaptability (Ly, 2023). Moreover, the study's findings indicate that digital transformational leadership is essential for fostering organizational agility (Hypothesis 3). The results indicate that the adoption of digital technology does not significantly enhance the organization's financial performance. During the digital transformation era, organizations are urged to swiftly and precisely adjust to unpredictable surroundings (AlNuaimi *et al.*, 2022). Organizations must possess agility to adapt swiftly. Organizational agility refers to an organization's capacity to swiftly recognize emerging dangers and capitalize on opportunities in a flexible manner. Simultaneously, a leadership position is essential to foster organizational adaptability. Digital transformational leadership is essential for organizations to enhance agility by empowering employees, facilitating adaptive processes, using advanced technology, fostering a sustainable culture, and articulating a digital vision. Consistent with this, Ramadan *et al.*, (2023) affirmed that leadership propels businesses toward greater agility. Research indicates that organizations aiming for success in the digital transformation era must prioritize digital transformational leadership capabilities, as these capabilities enable leaders to perceive digital challenges from multiple viewpoints, including those that affect organizational agility.

Eventually, Hypothesis 4 posits that organizational agility mediates the relationship between digital transformational leadership and financial performance. The data analysis results validated a significant correlation between digital transformative leadership and organizational agility (H3a). The findings align with prior studies indicating that transformational leaders enhance organizational agility by fostering relationships with subordinates and promoting

innovation and calculated risk-taking among employees in response to challenges and opportunities (Veisheh, Shiri and Eghbali, 2014). Chang et al., (2023) discovered that transformational leadership positively influences the agility of an organization, as it encourages rapid adaptation to the needs of evolving business environments. Consequently, organizations aiming to enhance financial performance must pursue individuals possessing traits of digital transformational leadership. Leaders possessing these attributes can perceive issues from several viewpoints and enhance organizational agility. Consequently, digital transformational leadership enhances the organization's capacity to adapt swiftly to change while also fostering overall financial performance enhancement.

Conclusions

Theoretical Implications

This study significantly advances research on organizational behavior and culture within the realm of digital transformation, particularly concerning MSMEs. Empirical research indicates that digital transformative leadership positively impacts organizational agility, hence enhancing financial performance. Moreover, organizational agility is crucial for enabling adaptation to changes induced by digital transformational leadership, consequently enhancing organizational performance. Moreover, digital transformational leadership is acknowledged as a catalyst for expediting organizational responses to change and enhancing organizational agility.

This study enhances the current literature by examining the mediating role of organizational agility in the relationship between digital transformative leadership and financial performance, particularly in MSMEs. While the notion of organizational agility is frequently addressed in literature, research examining its role in mitigating the impact of digital transformative leadership on performance remains scarce. Theoretically, the findings of this study may serve as a foundation for subsequent research to further explore and refine this model. This study enhances current studies regarding the influence of digital transformative leadership on financial performance. This study's results enhance the comprehension of the significance of digital transformational leadership's impact on organizational agility for improved financial performance. Consequently, the theoretical ramifications of this study may serve as a foundation for a more comprehensive investigation into the impact of digital transformational leadership on enhancing efficiency, decision-making, and operations of MSMEs within a dynamic business landscape.

Practical Implications

The findings and consequences of this study, conducted in North Sumatra, clearly demonstrate the potential to impact MSME business practices and settings. MSMEs must implement procedures that promote organizational dynamism to enhance financial performance. Regrettably, MSMEs that prevail in the nation's economic landscape continue to struggle with competition in the context of digital transformation (Rupeika-Apoga & Petrovska, 2022). Consequently, leaders of MSME sector organizations encounter challenges in organizational development due to

constrained resources (Dowdy et al., 2017). However, this study indicates that to enhance operations and financial performance during digital transformation, MSMEs must embrace organizational agility and draw insights from larger enterprises to achieve success. Organizational agility, characterized by the capacity to swiftly and effectively adapt to change, significantly enhances an organization's financial performance. Moreover, transformational digital leadership acts as a catalyst for expediting the organization's adaptability to change and enhancing organizational agility.

Digital transformational leaders can augment organizational agility by cultivating appropriate relationships with subordinates, fostering innovation, and promoting calculated risk-taking in response to prospective challenges and opportunities. Consequently, to attain optimal financial performance, MSMEs must guarantee they possess executives capable of facilitating digital technology transformations within their organizations.

Furthermore, this study reveals that MSME sector businesses must deliberately enhance organizational agility and prioritize the recruitment of managers possessing requisite digital capabilities. This might motivate firms to enhance their competitiveness in the digital transformation era by increasing organizational agility. These findings can serve as a foundation for human resource departments to enhance career planning and recruitment processes that promote the digital skills and leadership traits essential for the digital transformation age. AlNuaimi *et al.*, (2022) found that employees have a diminished inclination to manage change in the absence of adequate motivation. To enhance financial performance, MSME organizations must ensure that the enhancement of organizational agility is underpinned by appropriate leadership and the engagement of the entire organization, rather than permitting employees to implement changes without requisite support.

Limitations and Direction for Future Research

While the findings of this study significantly affect MSMEs, it is essential to recognize its limits. This study was carried out on a limited number of firms within the MSME sector in North Sumatra. Future research may utilize a more extensive sample derived exclusively from diverse MSMEs across different areas in Indonesia. This study is constrained to specific characteristics that may influence organizational financial performance within a digital transformation scenario. Future study is anticipated to investigate more attributes, such as organizational culture, knowledge management, and innovation, which may enhance the mediating function of organizational agility in the correlation between digital transformational leadership and financial performance.

This study is confined to the correlation among digital transformative leadership, organizational agility, and the financial performance of MSMEs. Future study is anticipated to evaluate the effects of digital transformational leadership and organizational agility on overall organizational performance, competitive advantage, and the sustainability of MSMEs. Ultimately, additional research is required to investigate how digital transformative leadership can enhance organizational agility and how this agility can subsequently mediate enhancements in financial performance. Consequently, forthcoming research is anticipated to

enhance the comprehension of these intricate dynamics and furnish more extensive insights for professionals and scholars in the domains of change management and digital transformation.

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