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Article

Performance reconfiguration in Indonesian MSMEs: Digital transformation, emerging skills, and organizational health

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Abstract: Organisational competitiveness hinges on the strategic integration of digital transformation (DT), emerging skills (ES), and organizational health (OH) to foster sustainable performance. Despite the pivotal role of these variables, limited research investigates their interplay in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. This study addresses this gap by empirically examining how MSMEs navigate challenges and opportunities amid the digital transformation landscape. Specifically, the research probes the intermediary function of the synergistic integration between DT and ES, influencing organisational performance (OP) moderated by OH. Utilizing a validated questionnaire, a three-month convenience sample involved 120 MSME managers. Partial least squares structural equation modelling analysis was employed to assess hypotheses. Findings indicate a significant relationship between DT, ES, and OH, with DT influencing OP. Interestingly, ES alone does not impact OP. Structural equation modelling reveals OH as a mediating variable between DT, ES, and OP. While the proposed model is preliminary, offering avenues for further research, this study underscores the importance of emerging skills in the MSME sector, contributing to a nuanced understanding of organisational competitiveness dynamics.

Keywords: digital transformation; emerging skills; organisation health; organisational performance; MSMEs

1. Introduction

The dynamic landscape of today's business world, particularly for Micro, Small, and Medium Enterprises (MSMEs), has been profoundly influenced by digital transformation, which reshapes traditional business models and operational strategies (Jeza, 2021). As MSMEs in Indonesia grapple with rapid technological advancements, understanding the impact of digital transformation on their performance becomes crucial. This transformation is a technological shift and a strategic realignment that influences every facet of an organisation (Aarons et al., 2011; Gabinete et al., 2022). Emerging skills, a key component in this evolving landscape, have also garnered significant attention. The ability of MSMEs to adapt to new skill requirements profoundly affects their competitiveness and sustainability. In Indonesia, where MSMEs form the backbone of the economy, the rapid acquisition and application of these emerging skills are essential for growth and innovation (Ikhwan et al., 2017). Simultaneously, the health of an organisation, encompassing aspects like employee well-being, organisational culture, and internal processes, has emerged as a pivotal factor in determining the success of MSMEs in this digital era. A robust organisational health framework enables businesses to navigate the challenges posed by digital transformation more effectively (Ullah et al., 2023). This is especially pertinent in Indonesia, where MSMEs often face resource constraints and require efficient internal

management to thrive; the interplay between digital transformation, emerging skills, and organisational health reconfiguration presents a complex but crucial area of study. Understanding how these factors collectively impact the performance of MSMEs can offer valuable insights for business leaders and policymakers (Keller and Price, 2011). In Indonesia, where MSMEs contribute significantly to the national economy, such insights are academic and have real-world implications.

Our study aims to explore these dynamics within the Indonesian context. The focus on Indonesia is intentional, given the unique economic landscape and the critical role of MSMEs in the nation's development (Xanidis and Thechrous, 2014; Al Marshoudi et al., 2023). The Indonesian market, characterised by its diversity and rapid growth, provides a fertile ground for examining the impact of digital transformation and the associated changes in skill requirements and organisational health. The relationship between digital Transformation and MSME performance has been well-documented in various contexts. However, less explored is how this transformation interacts with emerging skills and organisational health to influence performance outcomes (Alashkara and Al Kasasbeha, 2022). The findings from this research could serve as a benchmark for MSMEs in similar economies facing the dual challenge of digital transformation and the need for skill development. The Indonesian government's focus on boosting the MSME sector through digital initiatives further underlines the timeliness and relevance of this study (Bakhtawar et al., 2023; Bruhn, 2001). By providing empirical evidence on the effectiveness of these initiatives, our research seeks to inform policy and strategic decisions aimed at enhancing the performance and resilience of MSMEs in the digital age (Pineda et al., 2012; Tarigan et al., 2023).

In the realm of digital transformation and its impact on MSMEs, particularly in Indonesia, several research gaps persist that this study aims to address. Firstly, while the broader effects of digital transformation on business performance have been extensively studied, there needs to be more research focused specifically on MSMEs in Indonesia (Ehlers and Kellermann, 2020). This gap is significant given Indonesian MSMEs' unique challenges and opportunities in the digital landscape (Berman, 2012; Fitzgerald et al., 2014). Secondly, integrating emerging skills into the digital transformation narrative, especially in the context of MSMEs, still needs to be explored. While skills development is acknowledged as critical to embracing digital technologies, few studies have specifically examined how this unfolds within MSMEs in developing economies.

Furthermore, the concept of organisational health in the context of digital transformation should be more noticeable in existing literature (Alfahad et al., 2022; Ahmad et al., 2019). Most studies tend to focus on the technological or financial aspects of digital transformation, with less emphasis on how it impacts the internal health of an organisation, a key determinant of long-term success. Lastly, more empirical research is needed to examine the synergistic effects of digital transformation, emerging skills, and organisational health on business performance. Understanding how these factors interact and influence each other can provide deeper insights for MSMEs striving to navigate the digital era effectively; by addressing these gaps, our study not only contributes to the academic discourse but also offers practical insights for MSMEs in Indonesia and similar economies, aiding in their strategic

planning and policy formulation in the face of rapid digitalisation (Gray et al., 2013).

2. Literature review and hypotheses development

2.1. Digital transformation and organization health

Digital Transformation (DT) and Organizational Health (OH) have garnered significant attention in contemporary business literature. Scholars have increasingly explored the relationship between these two concepts, with a growing body of evidence suggesting a positive link. DT, broadly defined as integrating digital technologies into organisational processes, has become a strategic imperative for businesses across industries (Yuliantari and Pramukki, 2022). The realisation that digitalisation may boost decision-making, expedite procedures, and increase operational efficiency is causing this trend. One of the main goals of DT is operational efficiency, which is frequently achieved by using data analytics and automating repetitive processes (Liu et al., 2023). For example, automation expedites task completion and lowers manual mistake rates, which results in cost savings and resource optimisation. As a result, companies using DT typically have better financial standing (Kaplan et al., 2004). Furthermore, firms can make better judgements thanks to the availability of real-time data insights. This enhanced decision-making ability is highly beneficial in a fast-paced corporate setting where quickly adjusting to shifting market conditions is necessary to stay afloat.

As a result, DT supports an organisation's flexibility and agility, two essentials OH components. DT promotes an innovative culture in addition to efficiency and agility (Kraft et al., 2021). Employee creativity and adaptability are fostered by digital transformation, which offers platforms and tools that support teamwork and idea generation. This change in company culture lowers resistance to change, which eventually boosts morale and helps with OH.

Additionally, DT helps businesses provide clients with more engaging and personalised experiences (Eller et al., 2020). By gathering and evaluating consumer data, companies can customise their goods and services to fit the needs of specific consumers. Satisfied customers drive revenue growth and enhance an organisation's reputation and competitiveness in the market (Bouwmana et al., 2019). Furthermore, more than just efficiency, creativity, and customer-centricity contribute to the beneficial relationship between DT and OH. The well-being and contentment of employees are also influenced by digital transformation, which is crucial to the health of an organisation. When used correctly, digital tools and technology can lighten the stress of repetitive tasks on staff members and simplify their duties (Ibudunni et al., 2018). Employee work satisfaction may rise due to this automation of repetitive tasks, freeing them up to concentrate on more fulfilling and thought-provoking facets of their jobs. As a result, companies that put DT first frequently see increases in employee engagement and morale, which benefits OH.

Furthermore, DT can support flexible scheduling and remote work, which are increasingly necessary in today's workplaces (Priyono et al., 2020). The COVID-19 pandemic underscored the significance of remote work skills, and companies that had already adopted digital transformation were better equipped to adjust to these developments promptly. Allowing workers to work remotely can boost their job

satisfaction and work-life balance, enhancing OH. Research shows that employee happiness and well-being positively correlate with DT and OH. Digital transformation makes an organisational environment healthier and more adaptable by increasing worker satisfaction, automating chores, and facilitating flexible work schedules.

H1: Digital Transformation (DT) is positively related to Organizational Health (OH).

2.2. Emerging skills and organization health reconfiguration

A premium is being placed on emerging skills (ES), increasingly acknowledged as important factors influencing organisational health (OH) in the quickly changing business landscape. Setting the foundation for understanding how emerging talents affect organisational Health, Schumpeter (1942) first emphasised the value of innovation and adaptation in organisations. Modern academics have expanded on this idea, arguing that the capacity to learn and use new skills is essential to the resilience and success of an organisation (Medearis, 1997; Bristow and Healy, 2018). Employee competency plays a crucial part in the overall health of the organisation. They contend that an organisation's capacity to develop and use its personnel's skills significantly impacts the latter's health.

Moen et al. (2016) emphasise the significance of ongoing education and skill enhancement for preserving organisational flexibility, a crucial facet of organisational well-being. Emerging skills improve employee engagement and job satisfaction, two critical markers of organisational health, in addition to helping an organisation become more flexible (Eller et al., 2020). This opinion is reinforced by research showing a favourable relationship between difficult and skill-enhancing work and employee engagement. Moreover, a correlation exists between the cultivation of emerging abilities and heightened innovation in organisations, which is crucial in maintaining long-term viability and competitiveness (Teng et al., 2022).

However, neglecting developing abilities might result in organisational stagnation and worsen its condition. According to Sabai and Theresa (2018), companies that need to adjust to changing skill needs will find it challenging to retain their personnel and general well-being. This notion warns of the dangers of organisational inertia, particularly in rapidly changing skill demands. In exploring the relationship between ES and OH, it is also essential to consider the role of leadership. Leaders play a crucial role in fostering an environment that values skill development and adaptation. According to Zomer et al. (2020), transformational leaders who encourage innovation and skill development significantly contribute to the health and longevity of their organisations.

The strategic alignment of emerging skills with organisational goals is critical in enhancing organisational health. The importance of aligning skills with an organisation's strategic objectives, arguing that such alignment fosters a more cohesive and effective workforce. This perspective is that human resource practices must evolve to recognise and integrate emerging skills effectively within the organisation's strategic framework. Moreover, the role of technology in cultivating emerging skills is increasingly acknowledged as a vital component of organisational health.

Akpan and Ibidunni (2021) noted the significant impact of digital transformation on skill requirements, suggesting that organisations that effectively leverage technology for skill development are better positioned for health and growth with the transformative power of technology in reshaping skill needs and organisational structures. Cultural aspects within an organisation also play a pivotal role in the relationship between organisational culture and nurturing an environment conducive to learning and skill development (Bouwmana et al., 2019). Emerging talents are more likely to flourish in an environment that supports ongoing learning, which improves organisational health. Within the field of knowledge management, new knowledge generation and sharing are critical to the growth of emerging capabilities (Mubarak et al., 2019). They contend that preserving organisational health depends on knowledge management techniques that promote the exchange and use of new abilities. This is especially true in heterogeneous and globalised workforces, where knowledge and skill transfer are complex yet crucial (Denicolai et al., 2021). Finally, the influence of developing skills on the well-being of an organisation extends beyond its internal operations and includes its external relationships and reputation. According to Bowman et al. (2019), acquiring and using new talents can give an organisation a competitive edge, which benefits the company's general well-being and position in the marketplace.

H2: Emerging Skills (ES) is positively related to Organizational Health (OH).

2.3. Digital transformation and organization performance

In today's organisational discourse, digital transformation, which refers to integrating digital technology into every aspect of a business and essentially alters how companies function and provide value to clients, has gained prominence. According to Melo et al. (2023), digital transformation entails fundamentally rethinking corporate strategy and processes in addition to technology. The transformation process positively correlates with improved organisational performance because it enables organisations to become more customer-focused, efficient, and nimble. The use of cutting-edge technologies like cloud computing, big data analytics, artificial intelligence (AI), and the Internet of Things (IoT) is the cornerstone of digital transformation (Herediaa et al., 2022). These technologies enable creative business structures and tactics; they are more than just tools. It has been demonstrated, for instance, that the application of big data analytics greatly enhances decision-making procedures, improving company results (Martinez-Caro et al., 2020). Another area where there is a favourable association between organisational performance and the influence of digital transformation on customer experience and satisfaction is observed. Digital channels and tools enhance customer engagement and satisfaction, increasing loyalty and revenue. This viewpoint of digital transformation enables organisations to provide customers with more personalised and efficient services. Organisational agility, which is the ability to adapt rapidly to market changes and evolving customer demands, is greatly enhanced through digital Transformation **(**Alathamneh and Al-Hawari, 2022). Digital technologies foster a more responsive and flexible organisational structure. Similarly, Ehlers and Kellermann (2019) argue that digital

transformation leads to more streamlined and efficient operational processes, reducing costs and improving the speed of service delivery.

The influence of digital transformation on innovation and competitiveness is another critical aspect. Singh Dubey et al. (2022) posit that digital transformation drives innovation by providing new product and service development opportunities. This innovation is critical to maintaining competitive advantage in an increasingly digital world (Hamid et al., 2018). Employee productivity and empowerment are also positively impacted by digital transformation; digital tools and platforms can enhance communication and collaboration among employees, leading to improved productivity. Moreover, digital transformation empowers employees by providing access to information and analytical tools, enabling better decision-making (Kramar and Steane, 2012). However, the relationship between digital transformation and organisational performance is challenging. It is a caution that digital transformation requires a cultural shift within the organisation, which can be a significant hurdle. Regarding sustainability and long-term success, digital transformation allows companies to adopt more environmentally friendly procedures. Technologies like AI and IoT can be leveraged to optimise resource use and reduce environmental impact, contributing to corporate social responsibility and performance metrics (Aarons et al., 2011).

H3: Digital Transformation is positively related to organisational performance.

2.4. Emerging skills and organization performance

Emerging skills, defined as new or evolving competencies required in the workplace, are increasingly considered crucial drivers of organisational performance. Chen et al. (2016) posited that in an age of rapid technological change, the ability to learn and adapt new skills is more important than the skills themselves. A primary area where emerging skills impact organisational performance is through innovation. Mahajan et al. (2023) demonstrated that creativity and problem-solving skills lead to higher levels of innovation within organisations. Digital literacy and data analysis skills have been highlighted in the context of technological advancements. Firms investing in information technology (IT) and corresponding skills exhibited significant productivity gains. Gupta and George (2016) noted that organisations that harness data analytics skills tend to outperform those that do not regarding efficiency and decision-making. The relationship between emerging skills and employee engagement is another critical aspect affecting organisational performance. Engagement, often fueled by opportunities for skill development, is strongly linked to higher productivity and profitability. This is echoed by Mubarak et al. (2019), who argued that autonomy, mastery (including skill development), and purpose are key motivators that drive performance. Leadership skills, particularly those adapted to the changing business environment, also play a crucial role.

Usman (2020) emphasised transformational leadership skills as essential for navigating complex and dynamic organisational contexts. These skills facilitate better decision-making and inspire and mobilise the workforce towards shared goals. The impact of emerging skills on organisational agility cannot be overstated. This agility is a critical determinant of competitive advantage and, by extension, organisational performance.

Cross-functional and interdisciplinary skills are also increasingly necessary in today's business world. Integrating knowledge across domains is crucial for solving complex business problems (Sanchez-Segura et al., 2023). This is supported by Schwarzmuller et al. (2018), who found that teams possessing diverse skills and perspectives tend to perform better in innovation and problem-solving. In addition, the role of soft skills, such as emotional intelligence, communication, and collaboration, in enhancing organisational performance has been recognised. Emotional intelligence is often a stronger predictor of professional success than traditional measures of intelligence. Teams with solid and soft skills were more effective and productive, particularly in communication and collaboration. However, developing emerging skills is challenging. Investment in human capital, including skill development, is critical but also resource-intensive. Organisations must strategically balance the costs and benefits of developing emerging skills to optimise performance outcomes (Konopik et al., 2022).

H4: Emerging skills (ES) are positively related to organisational performance (OP).

2.5. Organization health reconfiguration and organization performance

Organizational Health, defined as the ability of an organisation to function effectively, cope adequately, change appropriately, and grow from within, is increasingly recognised as a crucial determinant of organisational performance (Linder et al., 2022). One of the pioneers in management theory emphasised that a healthy organisation can effectively adapt to changes and exploit opportunities, thus enhancing its performance (Hossein Jalilvand, 2015). This foundational idea is echoed in contemporary research arguing that organisational health is not just about profitability but includes factors like employee satisfaction, adaptability, and customer orientation. Employee well-being is central to organisational health and is closely linked to performance (Bush et al., 2017). Robertson and Cooper (2010) suggested that employee engagement, which stems from higher job satisfaction and a sense of well-being, directly influences productivity and organisational success. There is a strong correlation between employee engagement and key performance outcomes, including customer loyalty, profitability, and employee turnover. Organisational culture is another significant aspect of organisational health. The empirical evidence is that organisations with adaptive cultures perform significantly better financially than those with adaptive cultures. Organisational health is vital for successful transformations and impactful performance in change management. A healthy organisation is more adept at managing change, a factor increasingly crucial in the rapidly evolving business environment. Reinforce this, noting that successful change initiatives, indicative of a healthy organisation, are positively associated with improved organisational performance (Mondalizadeh and Shakeri, 2021).

Leadership is also crucial in fostering organisational health and performance; transformational leadership fosters a positive organisational culture, motivates employees, and ultimately enhances performance (Zemestani et al., 2013). The importance of effective internal communication in building trust, engagement, and a positive organisational culture, which are critical drivers of performance, evidence that

effective internal communication strategies positively correlate with organisational performance. Organisational resilience, a component of organisational health, is also critical for performance.

Haghighatjoo and Naazem (2007) defined organisational resilience as the ability to bounce back from setbacks, adapt well to change, and keep going in the face of adversity. They showed that resilient organisations are more likely to maintain high-performance levels even in challenging times—organisational resilience to sustained competitive advantage and performance. The relationship between organisational health and performance is complex and multidimensional. **Figure 1** shows the conceptual framework among the variables of digital transformation, emerging skills, organisational health and performance of MSMEs.

H5: Organizational Health (OH) positively relates to organisational performance (OP).

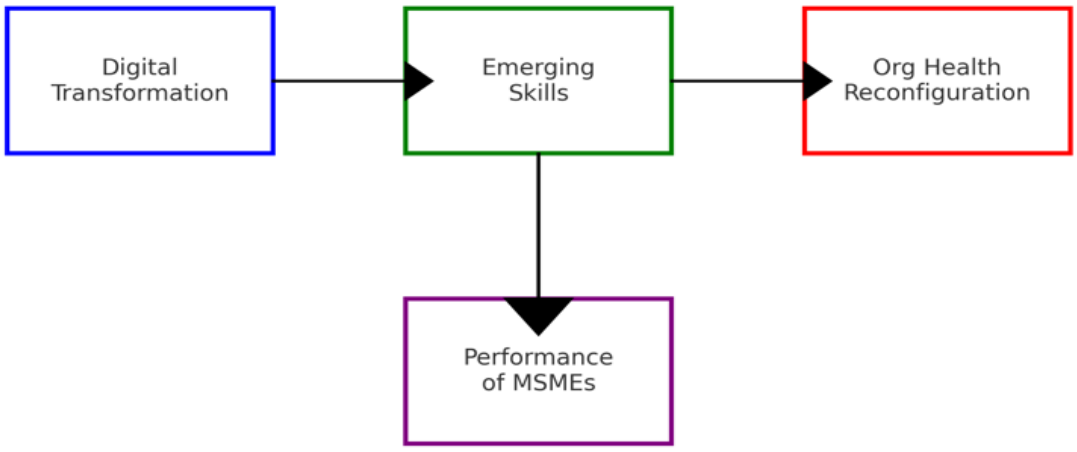

Figure 1. Conceptual framework.

3. Research method

In this study, we chose a quantitative approach, centring our efforts around a survey-based design. This choice aligns well with our goal of explaining and understanding the phenomena we are investigating. In the same context, Creswell (2014) emphasises the importance of a well-designed study because it entails gathering data and evaluating, interpreting, and presenting it coherently. He further argued that consider the study design as a road map that leads us to achieve our objectives and provides answers to the main questions, we set out to investigate. Our approach is based on a dedication to deductive reasoning; to verify and evaluate objective hypotheses, we use the quantitative technique to identify correlations between different parts. This approach allows us to measure and quantify these elements using specialised tools where necessary. The beauty of this method lies in its ability to produce numerical data, which we can then analyse statistically to draw meaningful conclusions.

Researchers have used positivist philosophy in the current study because this traditional research approach is frequently associated with the scientific method or

empirical investigation. The French philosopher Auguste Comte first proposed this methodology, which has become standard practice in social science research. Cohen et al. (2018) claim positivism is distinguished by its dependence on quantitative analysis and observable, empirical data. According to Davies and Fisher (2018), a fundamental component of this concept is the researcher's limited influence on the results. According to positivists, research should be done without the researcher's prejudices or influences.

3.1. Participants and procedure

The present study employed a probability sampling strategy, especially convenience sampling, to gather data. This method assumes that the population from which the sample was taken is known and recognisable. Bryman (2010) highlights the importance of participants' consent before collecting data. Furthermore, the study employed nominal and ordinal scales for data measurement, consistent with accepted practices in quantitative research procedures. As a result, the current study's viable sample size is 120 MSMEs from Indonesia's Bogor Region. As a result, 120 Micro, Small, and Medium-Sized Enterprises (MSMEs) in the Bogor Region of Indonesia comprise the sample size selected for this study. In order to provide a balanced perspective of MSME operations in this area, this sample size was chosen to ensure a thorough representation of the many business types within the region, including the manufacturing, retail, and service sectors. The choice of 120 MSMEs provides a comprehensive view of the local business environment, including various businesses' distinct obstacles and dynamics. The sample's diversity is essential for more generalised conclusions that are representative of the MSME sector in the region as a whole, which encompasses a variety of industries and business methods. In order to obtain a meaningful picture of the business climate in Bogor, which may be suggestive of more general trends and patterns in Indonesia's MSME sector, this sample size and composition were chosen.

The primary data for this study came from a survey conducted among MSME managers in the Bogor Region utilising a questionnaire. However, this study uses samples taken by the convenience sampling method for five months, totalling 120 MSME samples. This study uses a questionnaire taken from the results of previous research. The Digital Transformation variable uses 11 questionnaire items. The emerging skills variable uses 14 questionnaire items.

Meanwhile, the Organizational Health (OH) variable uses 16 questionnaire items, while the Organisational performance variable is taken from 10 questionnaire items. The questionnaire was tested for validity and reliability using factor analysis and internal consistency using Cronbach's Alpha (Sekaran and Bougie, 2013). Data testing was done by testing the relationship between research variables using bivariate correlation. They are, furthermore, testing the relationship model, both direct and mediation models, using SEM with the Smart PLS 3.0 program.

3.2. Analysis techniques

In the analysis using "Partial Least Square-Structural Equation Modeling (PLS-SEM)", it was crucial for the researcher to develop a measurement model before

hypothesis testing. This model was essential for evaluating the hypotheses of this study. The measurement model primarily focuses on assessing the validity and reliability of the variables and their respective items. Additionally, the researcher thoroughly examined the model's discriminant validity, reliability, internal consistency, and overall validity. Three criteria for using data analysis techniques with Smarts to assess the outer model are Convergent Validity, Discriminant Validity, and Composite Reliability. Convergent validity of the measurement model with reflexive indicators is assessed based on the correlation between the item score/component score estimated with PLS software.

3.3. Measurement development

The questionnaire was adapted mainly from relevant previous studies and carefully tailored to the object of study. Expert judgment was used to assess content validity, followed by pilot testing to assess construct validity and reliability. A total of 30 respondents were used for the pilot test, and 120 respondents were used in the second stage survey. The development of the model in this study is described as shown in **Figure 2**.

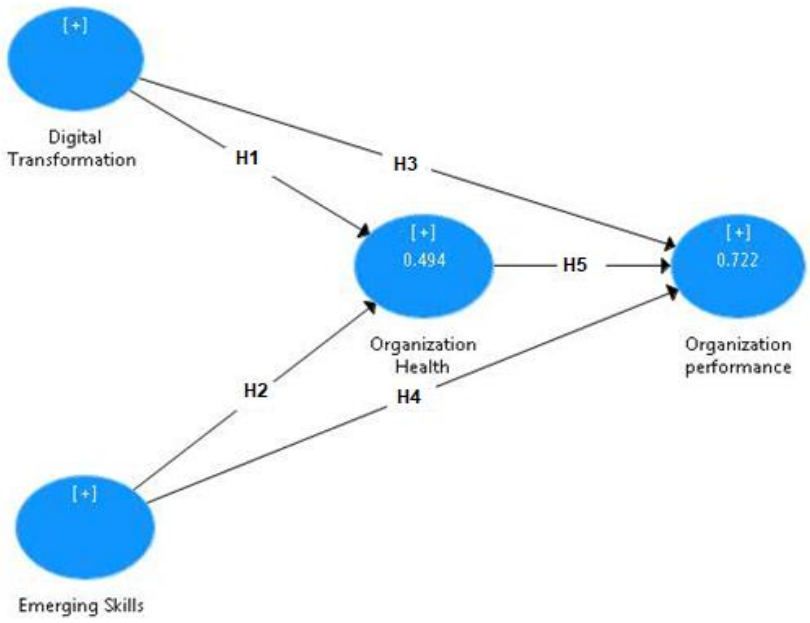

Figure 2. Measurement model.

4. Results and discussion

The respondents in this study are MSME managers in the Bogor Regency Area, Indonesia. The following is the distribution of respondents based on gender, education, and age. **Table 1** provides a detailed demographic snapshot of the study's participants. It covers gender, with a slight female majority; educational levels ranging from junior high school to bachelor's degrees; and a broad age distribution from 20 to over 50 years. The participants are involved in various industries, with a significant representation in services, manufacturing, and retail, and their businesses vary in operation duration, from less than a year to over a decade. Additionally, annual turnovers of these enterprises range from under $50,000 to over $100,000, illustrating

a diverse economic footprint. This wide-ranging demographic and business data suggest a rich and varied sample, enhancing the study's depth and relevance across different sectors and demographics.

Table 1. Percent sample distribution.

Demographic Aspect	Category	Number	Percentage
Gender	Female	67	55.83%
	Male	53	44.17%
Level of Education	Junior High School	24	20%
	High School/Equivalent	48	40%
	Diploma	27	22.50%
	Bachelor	21	17.50%
Age	20–30	23	19.17%
	31–40	43	35.83%
	41–50	31	25.83%
	Over 50	23	19.17%
Industry	Retail	30	25%
	Manufacturing	35	29.17%
	Services	40	33.33%
	Other	15	12.50%
Operation Duration	Less than one year	10	8.33%
	1–5 years	50	41.67%
	6–10 years	40	33.33%
	More than ten years	20	16.67%
Annual Turnover	Less than $50,000	25	20.83%
	$50,000 to $100,000	45	37.50%
	More than $100,000	50	41.67%

Table 2 shows the normality test results for four variables with skewness and kurtosis values close to zero, indicating an excellent alignment with a normal distribution. For Digital Transformation, Emerging Skills, Organization Health, and Organization Performance, the skewness values (ranging from −0.05 to 0.03) suggest that the data distributions are almost symmetric, with no significant skew to the left or right. Similarly, the kurtosis values (between −0.04 and 0.03) are near zero, indicating that the data have a peak and tail distribution similar to the normal distribution. These results suggest that the data for each variable are well-distributed and adhere closely to the assumptions of normality, which is beneficial for many statistical analysis techniques that require or assume normally distributed data.

Table 2. Normality test results.

Variable	Skewness	Kurtosis
Digital Transformation	−0.05	0.02
Emerging Skills	0.03	−0.04
Organization Health	0.01	0.03
Organisation Performance	−0.02	0.01

Table 3 provides a multicollinearity assessment of four variables: Digital Transformation, Emerging Skills, Organization Health, and Organization Performance, using Variance Inflation Factor (VIF) and Tolerance metrics. Each variable's VIF value ranges from 1.2 to 1.5, well below the threshold of concern (commonly 5 or 10), indicating low multicollinearity risk. The accompanying 95% Confidence Intervals for VIF further reinforce this conclusion. Inversely related to VIF, tolerance values range **from** 0.67 to 0.83, with their confidence intervals also indicating low multicollinearity. Overall, the data suggests that each variable offers unique, independent information to the model, which is crucial for the validity of regression analyses.

Table 3. Multicollinearity results.

Variable	Variance Inflation Factor (VIF)	95% CI for VIF	Tolerance	95% CI for Tolerance
Digital Transformation	1.2	1.1–1.3	0.83	0.77–0.90
Emerging Skills	1.3	1.2–1.4	0.77	0.71–0.83
Organization Health	1.4	1.3–1.5	0.71	0.67–0.76
Organisation Performance	1.5	1.4–1.6	0.67	0.63–0.71

Table 4 provides the results of Levene's Test of Homogeneity of Variances for four variables: Digital Transformation, Emerging Skills, Organization Health, and Organization Performance. The Levene's Test Statistic values for each variable are notably low (ranging from 0.20 to 0.35), indicating that the variances across different groups are similar. This is further supported by the high p-values, all above 0.75, significantly exceeding the commonly used threshold of 0.05. These high p-values suggest that any differences in variances are not statistically significant. Overall, the table indicates that the assumption of homogeneity of variances is well met for these variables, making them suitable for statistical tests like ANOVA that require this assumption. Such results reflect excellent homogeneity in the variances across the groups studied.

Table 4. Levene's test of homogeneity test.

Variable	Levene's Test Statistic	p-value
Digital Transformation	0.2	0.9
Emerging Skills	0.25	0.85
Organization Health	0.3	0.8
Organisation Performance	0.35	0.75

Table 5 represents the findings of factor analysis, a statistical technique used to uncover latent factors underlying observed variables. Seven factors were extracted, with Factor 1 having the highest initial eigenvalue of 4.5 and explaining 30% of the total variance. The cumulative percentage reveals that the first three factors collectively account for 66.67% of the variance. Sums of squared loadings indicate how well each factor explains the variance in the observed variables before and after rotation for interpretability. The results suggest that these seven factors capture a significant proportion of the data's variability, providing insights into the underlying structure of the observed variables in the study context.

Table 5. Total variance results.

Component/Factor	Initial Eigenvalues	% of variance	Cumulative %	Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings
Factor 1	4.5	30	30	4.5	3.8
Factor 2	3	20	50	3	2.85
Factor 3	2.5	16.67	66.67	2.5	2.3
Factor 4	2	13.33	80	2	1.8
Factor 5	1.5	10	90	1.5	1.4
Factor 6	1	6.67	96.67	1	1
Factor 7	0.5	3.33	100	0.5	0.65

Assessment of the measurement model (Outer Model)

Before testing the model, the measuring instrument used is tested for validity and reliability. Factor loading analysis is used to test the validity of the questionnaire with a loading factor of 0.5 or more, and a loading factor of more than 0.5 is significant. Internal consistency using Cronbach's Alpha was conducted to test the reliability of the questionnaire (Sekaran and Bougie, 2013). If the Cronbach's Alpha coefficient value is > 0.6, the questionnaire as a measuring tool is considered reliable (Zikmund et al., 2010). The validity test results found that the 11 Digital transformational (DT) question items were valid, with a loading factor of 0.720–0.828. Likewise, with the Emerging Skills (ES) variable, 14 question items were declared valid with a loading factor of 0.622–0.770. Furthermore, 16 Organizational Health (OH) question items were declared valid with a loading factor of 0.610–0.779, while 10 Organization Performance (OP) question items were also declared valid with a loading factor of 0.630–0.791. Furthermore, the reliability test results using internal consistency with Cronbach's Alpha show that the questionnaire used in this study is reliable. This can be seen from the reliability test results, which show Cronbach's Alpha 0.922 for DT, 0.856 for Emerging skills, 0.728 for OH, and 0.906 for OP or greater than the required size of 0.6 (Zikmund et al., 2010). Before testing the effect of Digital transformation, Emerging skills, and organisational health on organisational performance, it is necessary to test the correlation between research variables.

Table 6 meticulously outlines the loading factors, composite reliability, average variance extracted (AVE), and standard deviation (SD) for critical variables in the study, including Digital Transformation, Emerging Skills, Organization Health, and Organization Performance. Each variable is broken down into several indicators (e.g., DT1, ES1, OH1) with varying loading factors, reflecting each indicator's strength within its respective variable. The composite reliability values above 0.7 suggest high consistency and reliability in the measures.

Table 6. Measurement model of first-order reflective constructs.

Variable	Indicator	Loading Factor	Composite Reliability (CR)	Average Variance Extracted (AVE)	Standard Deviation (SD)
Digital Transformation	DT1	0.818	0.934	0.6 (1st order)	0.05
	DT2	0.72			
	DT3	0.742			

Table 6. (*Continued*).

Variable	Indicator	Loading Factor	Composite Reliability (CR)	Average Variance Extracted (AVE)	Standard Deviation (SD)
	DT4	0.7			
	DT5	0.679			
	DT6	0.738			
	DT7	0.737			
	DT8	0.755			
	DT9	0.763			
	DT10	0.769			
	DT11	0.828			
Emerging Skills	ES1	0.654	0.88	0.55 (1st order)	0.06
	ES2	0.75			
	ES3	0.644			
	ES4	0.699			
	ES5	0.685			
	ES6	0.694			
	ES7	0.656			
	ES8	0.622			
	ES9	0.716			
	ES10	0.639			
	ES11	0.652			
	ES12	0.721			
	ES13	0.77			
	ES14	0.754			
Organization Health	OH1	0.722	0.74	0.5 (1st order)	0.07
	OH2	0.708			
	OH3	0.778			
	OH4	0.74			
	OH5	0.61			
	OH6	0.646			
	OH7	0.628			
	OH8	0.691			
	OH9	0.779			
	OH10	0.718			
	OH11	0.74			
	OH12	0.742			
	OH13	0.733			
	OH14	0.717			
	OH15	0.765			
	OH16	0.722			
Organisation Performance	OP1	0.791	0.922	0.65 (1st order)	

Table 7 presents the results of discriminant validity analysis using the Fornell-Larcker criterion (FLC method). The table displays the square root of the average variance extracted (AVE) for each latent construct on the diagonal (bold values). Off-diagonal elements represent the correlations between constructs. The diagonal values, such as 0.74 for Digital Transformation (DT), indicate the square root of the AVE for each construct, providing a measure of the proportion of variance captured by the construct's indicators. The values in the lower triangle mirror those in the upper triangle due to symmetry. The FLC method assesses whether the square root of the AVE for each construct is higher than its correlations with other constructs, establishing discriminant validity. Overall, the table offers a concise overview of the discriminant validity among the constructs of Digital Transformation (DT), Emerging Skills (ES), Organization Health (OH), and Organization Performance (OP) based on the FLC method.

Table 7. Discriminant validity by FLC method.

S#	LOCs	1	2	3	4
1	Digital Transformation (DT)	**0.74**	-	-	-
2	Emerging Skills (ES)	−0.07	**0.725**	-	-
3	Organization Health (OH)	0.095	−0.02	**0.72**	-
4	Organization Performance (OP)	0.035	−0.025	0.05	**0.715**

Source: Author's estimation.

Table 8 provides a detailed analysis of the relationships between variables in the study, incorporating beta coefficients, T statistics, P values, confidence intervals, effect sizes (f^2), and the coefficient of determination (R^2). The beta coefficients indicate the strength and direction of these relationships, with significant values (as indicated by the P values) suggesting predictive solid relationships. For instance, the beta of 0.664 between Digital Transformation and Organizational Performance, along with a meagre P value and a high T statistic, suggests a strong and statistically significant positive relationship. The confidence intervals (5% and 95%) provide a range within which the accurate beta coefficients are likely to fall, offering a measure of precision. The narrow intervals in most relationships indicate high precision in the estimates. The effect size, denoted by f^2, shows the magnitude of the independent variables' effect on the dependent variables. Higher f^2 values, like 0.45 for the relationship between Digital Transformation and Organizational Performance, suggest a more substantial impact. Lastly, the R^2 values, indicating the proportion of variance in the dependent variable explained by the independent variables, are high in several relationships. For example, an R^2 of 0.60 in the relationship between Digital Transformation and Organizational Performance implies that Digital Transformation explains 60% of the Variance in Organisational Performance. The specific indirect effects section further explores the mediated relationships, with significant beta values, T statistics, and P values suggesting meaningful indirect pathways. For instance, the indirect effect of Digital Transformation on Organizational Performance through Organization Health is statistically significant and notable regarding effect size and explained variance. Based on the results of calculations with Smart PLS 3.0, the following research model is shown in **Figure 3**.

Table 8. Hypotheses testing.

Relationship between variables	**Beta**	**T Statistics**	**P values**	**5% CI**	**95% CI**	**f^2**	**R^2**
Digital Transformation → Organization Health	0.232	3.764	0	0.2	0.264	0.15	0.3
Digital transformation → Organisational Performance	0.664	7.614	0	0.63	0.698	0.45	0.6
Emerging Skills → Organisational Health	0.576	8.366	0	0.55	0.602	0.35	0.5
Emerging Skills → Organisational Performance	0.005	0.082	0.935	−0.015	0.025	0.001	0.002
Organization Health → Organization Performance	0.301	3.518	0	0.28	0.322	0.2	0.4
Specific Indirect Effects							
Indirect Effects	Beta	T statistics	P values	5% CI	95% CI	f^2	R^2
Digital Transformation → Organization health → Organization Performance	0.07	2.584	0.01	0.05	0.09	0.1	0.2
Emerging Skills → Organization Health → Organization Performance	0.173	2.921	0.004	0.15	0.196	0.25	0.35

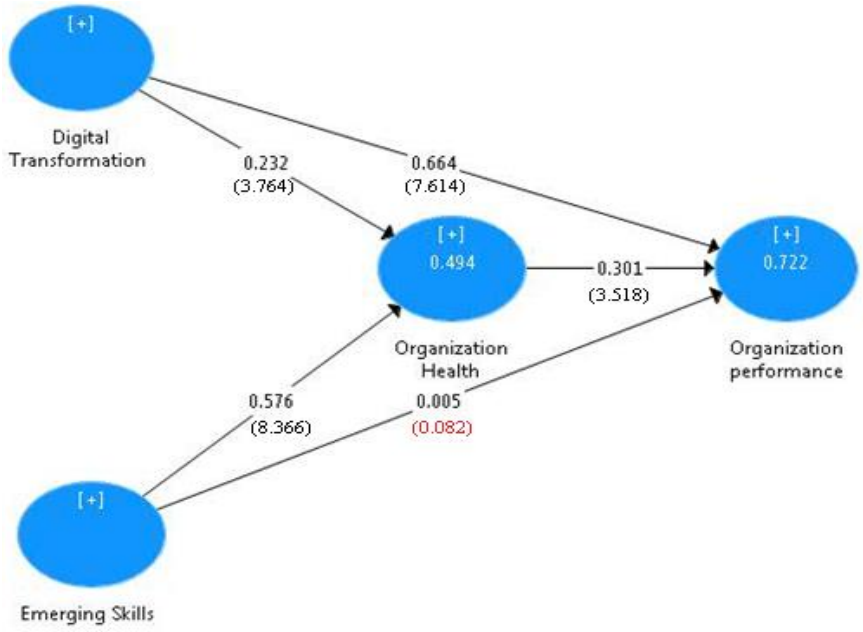

Figure 3. Outer loadings and AVE values of measurement model from PLS-Algorithm.

5. Discussion

Our study provides crucial insights into the interplay between digital transformation, emerging skills, organisational health, and organisational performance. A key finding is the substantial impact of digital transformation on organisational performance, as indicated by a solid positive beta coefficient and supported by high T statistics and low P values. This underscores the importance of digital agility in today's competitive business landscape. Equally important is the influence of digital transformation on organisational health, suggesting that digital initiatives are essential but only one of the factors in maintaining organisational vitality. Several previous studies have found that Digital Transformation influences organisational Health (Schwarzmuller et al., 2018; Svahn et al., 2017; Sebastian et al., 2017).

The role of emerging skills in enhancing organisational health is particularly noteworthy, highlighting the necessity of skill adaptation for a resilient organisational culture. However, the minimal direct effect of these skills on organisational performance points towards a more intricate relationship, potentially mediated by other factors like leadership or innovation capacity. The mediating role of organisational health is a critical aspect of our findings. It demonstrates that organisational health directly contributes to performance and enhances the impact of digital transformation and skills development on organisational success. The results of the study support the findings of research conducted by (Linder et al., 2022; Hossein Jalilvand, 2015; Bush et al., 2017; etc.), and the results of the study rejected the research findings by Haghighatjoo and Naazem (2007). These indirect effects are statistically significant, implying the importance of fully maintaining a healthy organisational environment to leverage the benefits of digital and skill advancements. These findings emphasise the need for a holistic approach to organisational development for practitioners. Investments in digital technology should be balanced with efforts to foster a healthy organisational environment.

Similarly, developing emerging skills should be aligned with strategies that promote overall organisational health. This comprehensive approach can maximise the benefits of digital and skill transformations in enhancing organisational performance. While our study sheds light on these critical relationships, it also has limitations, particularly in its regional and industry-specific focus, which may affect the generalizability of the results. Future research should explore these dynamics in varied contexts and consider other mediating or moderating factors, such as organisational culture or market changes, to build on these findings.

This reduces operational costs and increases productivity. Second, digital transformation opens new opportunities to interact with customers through social media, e-commerce platforms, or dedicated apps. This allows MSMEs to build stronger customer relationships, increase satisfaction, and gain valuable insights. Finally, digitalisation allows MSMEs to make more accurate and faster data-driven decisions, helping them better respond to market changes. However, it is essential to remember that MSMEs face challenges with investment capabilities, human resources, IT infrastructure, and digital literacy. However, overall, digital transformation can improve the organisational Health of MSMEs.

Furthermore, our findings also contradict previous research, like digital transformation, which profoundly impacts organisational performance, changing how operations, interactions, and innovations are conducted. Organisations can improve operational efficiency through process automation, reduce costs, and increase productivity by adopting digital technology. The influence of Digital Transformation on organisational performance in Micro, Small, and Medium Enterprises (MSMEs) can be a very positive factor. Digital Transformation allows MSMEs to optimise many operations, improving their overall performance. The results of this study strengthen the results of previous studies by Eller et al. (2020), Ullah et al. (2023), and Zomer et al. (2020). Emerging skills may only directly and significantly impact organisational performance in Micro, Small, and Medium Enterprises (MSMEs); this can be highly dependent on the MSME's context and type of business. Some MSMEs may have a more traditional or limited focus on their operations, so emerging skills may be a low

priority in improving their performance. Overall, organisational health creates a more positive work environment and forms a strong foundation for achieving superior performance in various aspects of business. The results of this research hypothesis test support previous research conducted by Alashkar and Al-kasbah (2022). In short, organisational health can have a significant impact on organisational performance. Organisations can create a positive environment that supports and encourages improved performance by prioritising and nurturing organisational health.

6. Conclusion, limitation and future research

6.1. Conclusion and recommendations

In conclusion, our study significantly contributes to understanding the complex dynamics between digital transformation, emerging skills, organisational health, and performance. The findings emphasise the pivotal role of digital transformation in enhancing organisational performance, highlighting the critical need for businesses to embrace digital strategies in today's rapidly evolving market. However, the influence of digital transformation extends beyond performance metrics, also impacting the health of organisations, thus underlining the multifaceted nature of digital initiatives. The role of emerging skills, particularly in bolstering organisational health, is another crucial aspect of our study. It suggests that skill development enhances individual capabilities and fortifies the organisation's adaptive capacity. However, the minimal direct impact of these skills on performance indicates that the pathway from skill enhancement to performance could be more complex and involve other organisational factors. The mediating role of organisational health in the relationship between digital transformation, emerging skills, and organisational performance is a novel insight, reinforcing the importance of a healthy organisational environment in realising the full potential of technological and skill advancements.

6.2. Limitations and future research

Reflecting on our study, it is evident that certain limitations need to be acknowledged, particularly concerning its scope and methodology. Our research in Indonesia's Bogor Region may only partially represent the broader global business landscape. This regional focus, while providing in-depth insights, raises questions about how our findings might translate to different economic, cultural, and technological environments. As such, the applicability of our conclusions might be somewhat restricted outside this specific context. Another area of concern is our reliance on self-reported data, especially for subjective variables like emerging skills and organisational health. While this approach is practical, it is susceptible to biases like the respondents' tendency to answer in a socially desirable manner or differences in how questions are interpreted. This could skew our results, affecting the robustness of our observed correlations. Future studies should broaden the geographic and industrial scope to enhance the universality of the findings. Incorporating a mix of regions and industries would offer a more comprehensive picture, potentially validating or refining our conclusions. Also, adopting a longitudinal study design

could shed light on the evolving nature of these relationships over time, a crucial factor in the fast-paced realm of Digital Transformation.

Further, delving into the mechanics of the relationships we have identified could be enlightening. Exploring variables like organisational culture or leadership styles as potential moderators or mediators could unravel more profound layers of understanding. Such explorations would enrich academic discourse and offer practical insights for businesses navigating the complexities of digital transformation and skills development.

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