UNLOCKING PROBLEMS IN MICRO, SMALL, AND MEDIUM ENTERPRISES' STRATEGY AND PERFORMANCE: REGIONAL SCOPE LEARNING

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Abstract

For the past few decades, micro, small, and medium-sized enterprises (MSMEs) have made an important contribution to supporting the Indonesian economy, especially in East Kalimantan Province (Amalia et al., 2022). However, it is still found that many business growths at the MSME scale are not optimal. This paper investigates the associative relationship between human resources (HR) competency, strategic flexibility, and sustainable performance with a focus on MSME actors in two locations in East Kalimantan, i.e., Penajam North Paser Regency and East Kutai Regency. Observations were carried out on 170 business actors in the MSME context. Data collection was conducted through questionnaires and tabulated using partial least squares (PLS). The findings reveal that HR competency influences strategic flexibility, but HR competency does not influence the sustainable performance of MSMEs. Other statistical results confirm that strategic flexibility can improve sustainable performance. Another fact was also found that strategic flexibility is able to mediate the interaction between HR competency and sustainable performance. The limitations of this paper, which have implications for the future, are a reflection for MSME players to consider new alternatives in building sustainable performance. Valuable lessons from this paper lead to the development of current knowledge about more efforts beyond strategic flexibility or HR competency to encourage sustainable MSME performance in the two case studies above.

Keywords: MSMEs, Human Resources Competency, Strategic Flexibility, Sustainable Performance, Partial Least Squares

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1. INTRODUCTION

Hermanto et al. (2024) stated that micro, small, and medium-sized enterprises (MSMEs) are a business cluster that can survive in various situations, including when Indonesia experienced a monetary crisis in 1997–1998. In reality, the number of MSMEs in Indonesia continues to grow because they are able to absorb jobs and create income for the lower-middle class (Ilmi et al., 2020; Wijaya et al., 2023).

As is known, MSMEs also play a role in driving socio-economic prosperity in East Kalimantan (Rahmawati et al., 2024). In 2020, the performance of MSMEs in the East Kalimantan economy will be 5.7% (Amalia et al., 2022). Additionally, the growth of MSMEs that has not been optimal is still a classic obstacle that must be faced, such as budget limitations, product innovation, quality of human resources (HR), marketing, and many other things. To remain competitive, MSME businesses and the government must follow up with collaboration, gradual assessment, and reinvent industrial policies that can shape productivity, creativity, and continuous economic expansion (World Economic Forum, 2023).

Today, the challenge for industry is to take initiatives to maintain profits and competitive advantage, so strategic flexibility is needed to overcome uncertainty triggered by market shifts (Fu et al., 2021). A strategy that can be applied by business people is to understand market dynamics so that the business continues to run in the short and long term. Therefore, a sustainable business will provide greater value to consumers through synergistic principles with a good foundation to be able to survive longer (Rama et al., 2022). According to Zutshi et al. (2021), sustainable MSMEs tend to implement modern business patterns. Moreover, management competency is the main determinant in business continuity to maintain standards (Muñoz-Pascual et al., 2021). Talented HR can create new opportunities by exploring inventive schemes to reduce production costs, increase efficiency, and ensure service quality. Apart from that, with competent HR qualifications, it will attract investor interest (Savitri & Syahza, 2019). Investment in HR capabilities is a crucial aspect at the organizational level to improve financial and commercial risks (Zhai et al., 2018).

Sustainability is becoming a concern in MSMEs. In industry, sustainability is producing goods that have a low impact on costs and are socially safe (Irwansyah et al., 2022). The key is, to become a strong MSME, MSMEs must adopt the concept of sustainability in order to continue to exist. The essential thing that needs to be considered in the MSME business is the ability to formulate novelty and originality. Basically, Indonesian MSMEs have several managerial problems. For example, the weaknesses of MSMEs center on guidance at the corporate level, including the absence of strategic planning, effective quality systems, and the supply of highly qualified resources (Haloub et al., 2022).

Currently, East Kalimantan MSMEs are struggling with various difficulties that hamper their potential to achieve integrated prosperity. Even though the government has received attention, classic root problems are still encountered, such as capital, HR competency, financial management, and provision in carrying out business flows, resulting in entrepreneurs having difficulty operating MSMEs. Moreover, with non-formal management, there is a wider difference in status between MSMEs and companies. What stands out most is the inequality in HR management and strategy material. So far, there is still little empirical research linking the relationship between managerial HR competency, strategic flexibility, and sustainable performance in the MSME category (Gorondutse et al., 2021).

Seeing increasingly complex conditions, this study suggests solutions to help the performance of MSMEs, which are not yet comprehensive, by highlighting two mechanisms beyond past scientific discussions, including: 1) strengthening HR competency and 2) strategic flexibility. These two terms are predicted to be determinants in advancing the performance of MSMEs in East Kalimantan. By mapping the problem correctly, the output of this study can open new avenues for MSME organizations in managerial programs oriented towards improving HR competency and strategic flexibility. Also, it is a valuable lesson for further research to consider the two things above as premises for building sustainable MSMEs' performance.

Specifically, the dedication of this paper is to examine the impact of HR competency and strategic flexibility on the sustainable performance of MSMEs. The output of the paper can provide ideas for the sustainability of MSMEs. Apart from that, the results of the paper are a new preference for future studies and the government's commitment to reviving the MSME industry.

The remainder of this paper is organized into the following sections. Section 2, the literature review, explains the theoretical basis, relevance of variable relationships, and conceptual framework. Section 3, the methodology, displays the systematics of data collection, variable characteristics, and working models. Section 4, the results, outlines the findings and justification. Section 5, the discussion, analyses the research findings. Section 6, the conclusion, summarizes the main results, conveys suggestions, and evaluates limitations to stimulate managerial insights and fill research gaps.

2. LITERATURE REVIEW

2.1. Basic theory

The theoretical review provides perspective support that can form the foundation of the model (Hidayati et al., 2021). The theoretical basis behind science, especially in the discipline of entrepreneurial management. The theoretical construction that forms the literature landscape emphasizes HR competency and strategic flexibility for sustainable performance in MSME businesses. The growth and efficiency of MSMEs are vital because they have been proven to be able to support economic growth in all countries, which are seen as an essential sector. MSMEs have a spillover effect on job creation (Zutshi et al., 2021). Moreover, the majority of governments in emerging markets rely more on the performance of MSMEs to generate opportunities compared to governments in developed countries, which are relatively dominated by large companies (Ebrahim et al., 2023). The economic strength of a country can worsen if MSMEs are not designed with adequate strategic plans, for example, fiscal resources, raw materials, and energy. Ideally, the government and other supporting layers should provide as much help as possible to MSMEs, including environmental treatment and initiatives that are beneficial to business.

MSMEs need to apply the idea of sustainability in operating their business because they are faced with difficulties in integrating economic, social, and environmental sustainability. To spur resource

productivity, energy efficiency, and manufacturing processes, MSMEs must first be able to anticipate limited supplies of raw materials (Yin & Chang, 2022). At the same time, manufacturers are considering compliance with environmental laws and greater cultural pressures in response to the environment (Kumar et al., 2022; Stabler et al., 2024). To face the threat of a volatile environment, corporate organizations are urged to prepare different manufacturing approaches that measure HR competency and strategic flexibility, thereby enabling long-term sustainability.

In general, MSMEs in emerging markets encounter managerial challenges that can hinder progress. MSMEs' performance that is indicated to be below expectations can endanger business continuity (Dwikat et al., 2022). Khoury et al. (2021) illustrated the general weaknesses experienced by MSMEs, including: 1) inclusive strategic planning, 2) competitive HR, 3) skilled leadership, 4) capital capacity, and 5) management controls such as strategic flexibility according to environmental shifts. In particular, one of the disadvantages of MSMEs in developing markets is triggered by the most senior individuals who occupy executive positions in MSMEs with poor industrial and managerial skills, resulting in suboptimal organizational functioning (Abdulrab et al., 2021; AlQershi, 2021).

Gautam and Gautam (2022) explained that scholars and professionals around the world have recommended further observations. Investment in human capital to ensure better competency through a strategic planning structure that can be integrated into business management. To achieve sustainable MSMEs' performance, transformative diversification must be connected to tangible and intangible managerial pillars. The reciprocity between HR competency and strategic flexibility allows small and large-scale companies to follow economic, environmental, and social trends. However, only a few cases have investigated the impact of these strategic factors on the performance of manufacturing companies, especially MSMEs in emerging markets. Thus, this paper estimates the impact of HR competency on the strategic flexibility and sustainable performance of MSMEs.

2.2. Relationships between variables

In practice, monitoring performance metrics such as company financial indicators has proven inadequate in the face of dynamic competition, lack of competent HR, and increasing environmental restrictions (Dwikat et al., 2023; Rodrigues Antunes et al., 2022). Apart from calculating productivity and financial profits, companies are increasingly taking into account sustainable performance metrics to check performance, including stakeholder satisfaction (Pérez Estébanez & Sevillano Martín, 2025).

Sustainability has developed into a multidisciplinary viewpoint that can be interpreted in various ways depending on the topic and theme. Implicitly, sustainability is a holistic term that represents the performance of an organization from an economic, environmental, and social perspective (Rahman et al., 2022). Similarly, Purnamawati et al. (2022) explained that the prospect of business companies is to increase the best results by maximizing profits at all levels simultaneously. Universally, sustainable development is receiving more attention, where the business world needs to compile strategies carefully (Minutiello et al., 2024). In the short and long term, business performance is a signal indicating the company's superiority in meeting financial targets. This refers to company tactics that are responsive to market needs, behavior, and transitions by distributing services and goods without delay in an economical way to meet customers' quality of life. Then, social sustainability also began to change the competitive system, encouraging companies to reevaluate previous strategies to find new products, technologies, techniques, and modern business models. After all, its main goal centers on social responsibility through maintaining community coherence. Social performance cannot be separated from business plans that affect the interests of company shareholders, employees, operational areas, and the surrounding community.

The business world must place special emphasis on the capabilities of HR, which will be responsible for managing and following strategies to achieve the mission. For this reason, the capability and flexibility of HR involved in the MSME business strive to exceed the desired targets (Alexandro, 2025). Siregar et al. (2025) explained that in order for MSMEs to grow, MSME managers must be more flexible in combining human capital and spiritual capital continuously. Muñoz-Pascual et al. (2021) dissected the resilience of MSMEs as influenced by core skills originating from interaction, knowledge, and motivation of HR in creating creativity. Resilient MSMEs are also more careful in determining and allocating HR investments, including: 1) formal and informal education, 2) job training, 3) health and safety service systems, 4) retaining highly qualified employees, and 5) maintaining employee commitment. In the accumulation process, employee satisfaction becomes an integral part of strategic engagement (Aziez, 2022). Company personnel are classified as the main intangible assets responsible for generating value, maintaining quality, and maintaining sustainability.

Substantially, most studies state that HR competency can improve the performance of industrial companies. Li et al. (2022) explained the positive causality between empowering competent HR and the performance of MSMEs in China. Talking about sustainable competitive advantage, Anatan and Nur (2023) suggested that Indonesian MSMEs can adapt with accurate strategies that lead to intellectual capital as a bridge to overcome rapid market fluctuations. On the other hand, Wash (2023) confirmed a negative relationship between obtaining competitive benefits and HR competency in the company. In the MSMEs business space, there is insufficient evidence from other manuscripts that reveals the link between HR competency and performance in a comprehensive manner (Mas'ud & Tenriyola, 2023). Although the success of a company organization is reflected by competent HR, in the MSME ecosystem, the relationship between the two is still uncertain and requires further analysis. There is a striking inconsistency in the analogy that connects the linearity between HR competency to strategic flexibility and sustainable MSMEs' performance. On the basis of existing postulates, the following two hypotheses are proposed:

H1: Human resources competency is positively related to strategic flexibility.

H2: Human resources competency is positively related to sustainable performance.

Zutshi et al. (2021) stated that a company's resilience can be tested by market transitions, regulations, technological advances, digitalization, and other disruptions such as the COVID-19 pandemic that are difficult to predict (such as the COVID-19 pandemic). To save the company's sustainability, strategic flexibility can be relied on to assist decision makers in realizing sustainable performance (Mezher & El-Khalil, 2021). Although there is no consensus on the scientific articulation of strategic flexibility, different definitions in the literature have invited debate. In short, strategic flexibility can be broadly defined as the technique and efficient handling of urgent changes. Strategic flexibility is a company's awareness of being alert and proactive in quickly adapting to environmental dynamics, contributing to various advances, and maintaining a competitive advantage (Awais et al., 2023). In other words, strategic flexibility is an urgent administrative matter to bring about better change, especially in terms of managing a dynamic environment (Muneeb et al., 2023). Strategic flexibility allows decision makers to sustain higher performance through the availability of options to handle change. Through the best strategic flexibility, companies can adapt to certain emergencies. On the one hand, errors in implementing strategic flexibility actually hinder sustainability.

Other authentic evidence verifies that strategic flexibility consistently affects company performance (Awais et al., 2023; Kafetzopoulos et al., 2023). It does not necessarily mean that studies that link the two relationships can accommodate similar research, because there are limited objects, and this can affect further analysis. Then, studies at that time were only limited to testing strategic flexibility and performance based on company structure and size (Hensellek et al., 2023). The effect of strategic flexibility on company performance requires an in-depth description. By recognizing the impact of HR competency on strategic flexibility and business performance, it makes it easier for MSMEs to think about and make improvements. This also

provides rational guidance for companies to be able to modify policies according to environmental characteristics.

Ironically, in the decision-making process, the majority of MSMEs use relatively old styles, where improvisational decisions rarely occur. One path in decision-making is to navigate strategic flexibility. Like organizations such as companies, MSMEs need to elaborate strategies as a reaction to changes in the business environment (Dewi et al., 2023). Before being implemented by all levels of management, flexibility in strategy must start from the involvement of industry experts in the MSMEs sector with the task of collecting data, finding problems, evaluating, and designing mechanisms. Furthermore, MSMEs executives introduced the mechanism as part of a plan oriented towards production efficiency. Through the assumptions above, hypotheses three and four are formulated as follows:

H3: Strategic flexibility is positively related to sustainable performance.

H4: Human resources competency mediated by strategic flexibility is positively related to sustainable performance.

2.3. Conceptual framework

Referring to the theoretical lens and relevance of the relationships contained in previous publications, a conceptual framework was created, as shown in Figure 1. According to the approach used, e.g., partial least squares (PLS), the variables are grouped into three entities: 1) independent variables, 2) dependent variables, and 3) mediator variable. Besides analyzing direct effects, the PLS approach also functions to identify indirect impacts played by mediator variables (Hair et al., 2014). Here, the independent variable is played by HR competency, while strategic flexibility functions as a moderator variable, and the dependent variable is sustainable performance.

Figure 1. Proposed model and hypotheses
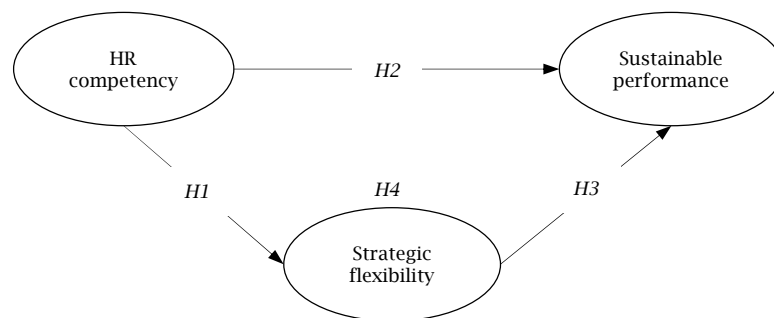
3. RESEARCH METHODOLOGY

In this paper, the approach uses an associative study that aims to investigate the causality between *HR competency*, *Strategic flexibility*, and *Sustainable performance* by focusing on MSMEs. The composition of the variables and indicators is summarized in Table 1. Although not explicitly mentioned

within the scope of MSMEs, several previous studies have served as pilot investigations. The papers by Alfawaire and Atan (2021), Battour et al. (2021), Dwikat et al. (2023), Megdad and Çaglar (2024), and Mirčetić et al. (2022) act as precursors to this study by exploring the relationship between *HR competency*, *Strategic flexibility*, and *Sustainable performance*.

Table 1. List of variables and indicators

Variables	Indicators/Statements	Adopted from
HR competency	*HRC1.* Skills: The MSMEs I manage have skilled employees.	Sewang (2024)
	HRC2. Dedication: Currently, employees are able to provide the best for MSMEs.	
	HRC3. Creativity: MSMEs employees are able to increase their creativity endlessly.	
	HRC4. Expertise: MSMEs are operated by employees with various required expertise.	
	HRC5. Idea: Employees are involved in building MSMEs.	
Strategic flexibility	*SF1.* Adaptive: Trying to encourage change by following consumer tastes.	Brozović et al. (2025), Purnama (2024)
	SF2. Responsive: Carry out product differentiation if competitors launch new products.	
	SF3. Intelligence: Accuracy in making business decisions.	
	SF4. Evaluation: The evaluation process is determined by the productivity of the business.	
Sustainable performance	*SP1.* Efficiency: MSMEs are able to increase efficiency.	Malesios et al. (2021), Mengistu and Panizzolo (2023)
	SP2. Financial: Financial stability is the key to MSMEs success.	
	SP3. Satisfaction: Customer satisfaction is a top priority.	
	SP4. Rewards: A rewards system is implemented periodically for employees.	
	SP5. Prosperity: MSMEs care about employee prosperity.	

Source: Authors' elaboration.

To help with the analysis phase, data collection is done through offline interviews or direct surveys with respondents. The samples were 170 MSMEs' owners (N = 170) in Penajam North Paser Regency and East Kutai Regency. During the interview process, the researchers carefully considered ethical aspects by obtaining informed consent from the participants to collect data transparently. Consent was secured through mutual agreement, with assurances given to the participants regarding the responsible collection, processing, and publication of the interview data in an article. This process was further validated by the distribution of 170 questionnaires, all of which were returned intact for subsequent analysis. The sample size was determined on a snowball basis. The sample size identified was sufficiently large and appropriately selected, ensuring the representativeness of the sample from both regions. Specifically, three characteristics distinguish MSMEs from other business units. First, MSMEs have a limited business scale and capital. They typically employ fewer people and possess relatively small assets and annual turnover compared to large companies. For example, micro businesses have an annual turnover of ≤ IDR 300 million and assets of ≤ IDR 50 million. Small and medium-sized businesses are generally larger than micro businesses but remain significantly smaller than large corporations. Second, ownership and management structures are simple. MSMEs are usually owned and managed by individuals or families, with decision-making processes that are informal and centralized around the owner, lacking complex managerial hierarchies. Third, MSMEs have limited access to financing and technology. Many face challenges in obtaining formal financing sources, such as bank loans, and in adopting advanced technologies, which restrict their potential for expansion and production efficiency.

The interview tool was carried out by distributing questionnaires. In the questionnaire, there are questions with perceptions on a Likert scale. The five scales correspond to the following five rating criteria: 5 = Strongly agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly disagree. After the questionnaires are tabulated and selected, the data is then interpreted. The analysis scenario uses PLS. The three basic parameters in the PLS method include: 1) latent variables, 2) indicator variables, and 3) error in direct measurement.

Table 2. Assessment factors in partial least squares

Measurements	Output	Info
Outer model (Indicator test)	Convergent validity, average variance extracted (AVE), and composite reliability (CR)	A loading factor (λ) score of 0.5 is considered appropriate, AVE > 0.5, and CR > 0.7.
Inner model (Hypothesis test)	Q^2 for model forming variables and parameter coefficients, and t-statistics	The four criteria in Q^2 are 0–0.2 (weak effect), 0.21–0.5 (moderate effect), 0.51–0.75 (moderate effect), and > 0.75 (strong effect). The estimated results for the path relationship with the structural model must be significant according to the bootstrapping procedure.

Source: Hussain et al. (2018) and Shrestha (2021).

The assumptions in the PLS assessment are divided into two, i.e., the outer model and the inner model (Sarstedt et al., 2016). These two outputs are used to interpret the PLS technique (see Table 2). After that, the effect size (Q^2) was calculated to identify the strength of the model simultaneously. Table 3 is the operationalization of the effect size.

Table 3. Effect size (Q^2)

Score	Notation
0.02	Small effect
0.15	Medium effect
0.35	Large effect

Source: Suhan et al. (2018).

The study on *HR competency* and its relationship to *Strategic flexibility* and *Sustainable performance*, focusing on MSMEs, will be conducted using the PLS method. This choice is justified for several reasons. First, the relationships among the variables under investigation are complex. PLS is well-suited for testing models with multiple latent constructs and indicators, as well as for assessing mediating relationships, which are central to this study. Second, the characteristics of MSMEs' data must be considered. MSMEs typically have a limited number of respondents, especially in field surveys. Moreover, the data often deviates from a normal distribution due to the heterogeneity of

business scales and varying levels of respondent understanding. In this scope, PLS does not require the assumption of multivariate normality, making it an appropriate method for analyzing non-ideal data such as that from MSMEs. Then, PLS is suitable for both predictive and exploratory modeling. This study aims to examine the impact of *HR competency* on *Strategic flexibility* and *Sustainable performance*, while also predicting the contribution of these variables to *Sustainable performance*. PLS is highly effective for predictive and exploratory purposes, in contrast to covariance-based structural equation modeling (CB-SEM), which primarily focuses on theory validation. Fourth, the measurement of latent constructs is critical. Variables such as *HR competency* (including soft skills, knowledge, and technical abilities), *Strategic flexibility* (encompassing structure, process, and adaptation), and *Sustainable performance* (covering economic, social, and environmental dimensions) are typically measured using reflective or formative indicators. PLS supports both reflective and formative measurements, which can sometimes pose challenges for CB-SEM. Fifth, PLS offers considerable model flexibility, facilitating the construction of theoretical models that are not yet fully established, making it particularly suitable for the scope of SMEs in developing countries and regions, where theoretical frameworks may be underdeveloped or context-specific. In other words, PLS can accommodate model complexity and mediating variables, tolerate small and non-normal datasets, support situational predictive pathways aligned with MSMEs' characteristics, and adapt effectively to both reflective and formative latent variables (Guenther et al., 2023).

4. RESEARCH RESULTS

4.1. Demographic characteristics

Overall, Table 4 shows that the majority of MSMEs are managed by women (67.1%). Meanwhile, 32.9% of MSMEs' owners are male. The average age of MSMEs' managers is in all age groups: 20–30 years old (22.9%), 31–40 years old (36.5%), 41–50 years old (28.2%), and more than 50 years old (12.4%). The educational background among MSMEs' owners is quite varied, with high school graduates (21.8%), diploma (11.2%), bachelor's degree (60.6%), and master's degree (6.5%). In terms of business experience, 47.1% of respondents claimed that they had operated MSMEs for the last 4–6 years, while 30.6% had 1–3 years of experience, 14.7% of respondents with experience above 7 years, and 7.6% respondents had under 1 year. Based on interviews with 170 MSMEs' owners, field data shows that 45.9% are small businesses, 28.8% are medium-scale, and 25.3% are micro businesses. According to the study location, survey data collection was divided into two, i.e., Penajam North Paser Regency (45.3%) and East Kutai Regency (54.7%).

Table 4. Respondent identity

Profile	Item	Frequency (N)	Percentage (%)
Gender	Male	56	32.9
	Female	114	67.1
Age	20–30 years old	39	22.9
	31–40 years old	62	36.5
	41–50 years old	48	28.2
	> 50 years old	21	12.4
Educational background	Senior High School	37	21.8
	Diploma	19	11.2
	Bachelor	103	60.6
	Masters	11	6.5
Business experience	< 1 year	13	7.6
	1–3 years	52	30.6
	4–6 years	80	47.1
	> 7 years	25	14.7
MSMEs scale	Micro	43	25.3
	Small	78	45.9
	Medium	49	28.8
Business area	Penajam North Paser Regency	77	45.3
	East Kutai Regency	93	54.7

Source: Authors' elaboration.

4.2. Model evaluation: Outer and inner

The three variable models analyzed are *HR competency, Strategic flexibility*, and *Sustainable performance*. The total number of indicators is fourteen. Both *HR competency* and *Sustainable performance* are formed by five indicators, while *Strategic flexibility* consists of four indicators. In assessing the feasibility of the outer model, convergent validity, AVE, and CR are used (see Table 5). Intuitively, the loading scores in Phase I represent the variable structure based on the initial indicators, while the loading scores in Phase II reflect the revised variable indicators.

Table 5. Outer model results (Part 1)

Variables and indicators	Loading (Phase I)	Loading (Phase II)	CR	AVE
HR competency	-	-	0.771	0.413
HRC1	0.834	0.828	-	-
HRC2	0.838	0.839	-	-
HRC3	0.893	0.894	-	-
HRC4	0.678	0.684	-	-
HRC5	0.766	0.767	-	-

Table 5. Outer model results (Part 2)

| Variables and indicators	Loading (Phase I)	Loading (Phase II)	CR	AVE
Strategic flexibility	-	-	0.902	0.649
SF1	0.807	0.836	-	-
SF2	0.719	0.717	-	-
SF3	-0.363	-	-	-
SF4	-0.148	-	-	-
Sustainable performance	-	-	0.754	0.606
SP1	0.734	0.737	-	-
SP2	0.575	0.588	-	-
SP3	0.525	0.504	-	-
SP4	0.522	0.495	-	-
SP5	0.820	0.823	-	-

Source: Authors' elaboration using SmartPLS software.

First, convergent validity is measured by the loading score. With a standard of 0.5, there are two indicators on the same variable (in this case, *Strategic flexibility*) whose loading scores are below the criteria. The two indicators are intelligence and evaluation, where the loading scores are -0.363 and -0.148. Both *HR competency* and *Sustainable performance* are supported by appropriate model indicators. If analyzed statistically, the highest indicator of *HR competency* is creativity (0.893), but the lowest is expertise (0.678). In the *Strategic flexibility* variable, the indicator with the largest loading score is adaptive (0.807). Meanwhile, for *Sustainable performance*, the highest loading score is prosperity (0.820), and the smallest is rewards (0.522). Second, the same as factor loading, the criteria for AVE are above 50% (AVE > 0.5). Of the three existing variables, *HR competency* has an AVE score of 0.413, and other variables, such as *Strategic flexibility* and *Sustainable performance*, show that both are valid. *HR competency* is categorized as an invalid variable in this study model. Third, with a minimum standard of 70% (CR > 0.7), it is known that *HR competency* (0.771), *Strategic flexibility* (0.902), and *Sustainable performance* (0.754). Because they have a CR score above the provisions, the three variables are concluded to be reliable. Interestingly, the AVE value for *HR competency* falls below the specified threshold, which has important implications for construct validity and warrants further discussion. The low AVE is not attributable to the credibility of the respondents or enumerators; rather, it indicates that the indicators within this variable do not adequately explain the variance of the latent construct. Briefly, this may result from the inclusion of too many invalid or irrelevant indicators in the field. Another possibility is that the variable contains noise or inconsistent measurements. As a result, a greater proportion of the variance arises from error rather than from the construct, causing the AVE to be low. This indicates that the variable's convergent validity is weak.

With a contradictory model, further simulation is needed by eliminating two indicators, i.e., intelligence and evaluation of *Strategic flexibility*, which have factor loadings below the standard (< 0.5), as illustrated in Figure 2. After that, further analysis is needed to eliminate indicators on the *Strategic flexibility* construct, which is converted into Figure 3. In the second model, the factor loading score for each indicator meets the requirements to reach above 0.5. But the CR score was also greater than 0.7, so the statistical assumptions were met. According to Hair et al. (2014), if the outer loading score is > 0.70, then it is recommended. However, if the loading factor is 0.5 ($\lambda = 0.5$), it can still be tolerated using a t-statistic > 1.96 or a degree of probability < 0.05.

**Figure 2.** Structural relationships between variables
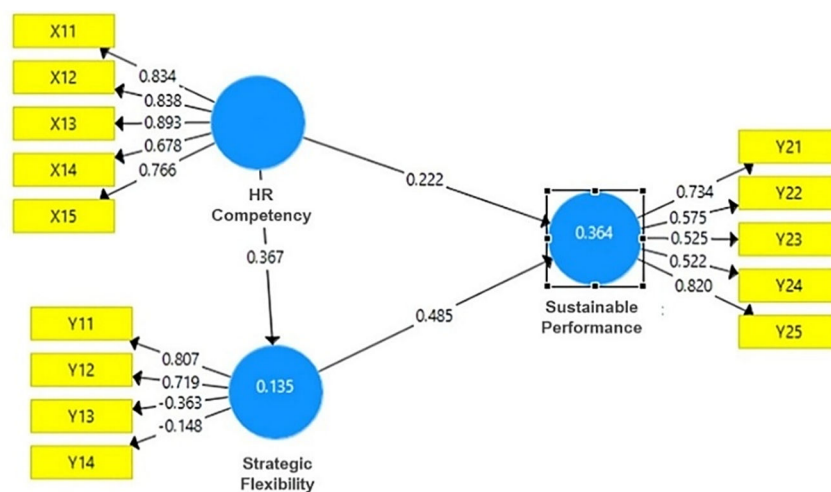
Source: Authors' elaboration using SmartPLS software.

Both Figures 2 and 3 illustrate that the codes or labels for each variable correspond to their respective indicators. As is commonly understood, *X1* represents the independent variable, *Y1* is the mediator variable, and *Y2* denotes the dependent variable. Specifically, the two indicators of the *Strategic flexibility* variable — intelligence and evaluation — exhibit low and negative loading factors and should typically be eliminated, as they are considered problematic or invalid and require improvement. Sallis et al. (2021)

and Subhaktiyasa (2024) explain that loading factors indicate the correlation between indicators and latent constructs. A negative loading factor suggests that the indicator is inversely related to the construct it is intended to represent, thereby compromising construct validity (meaning the indicator does not accurately reflect the construct), reducing the model's reliability and consistency, and causing confusion in interpretation because the direction of the relationship contradicts theoretical expectations.

Figure 3. Post-construct elimination effects
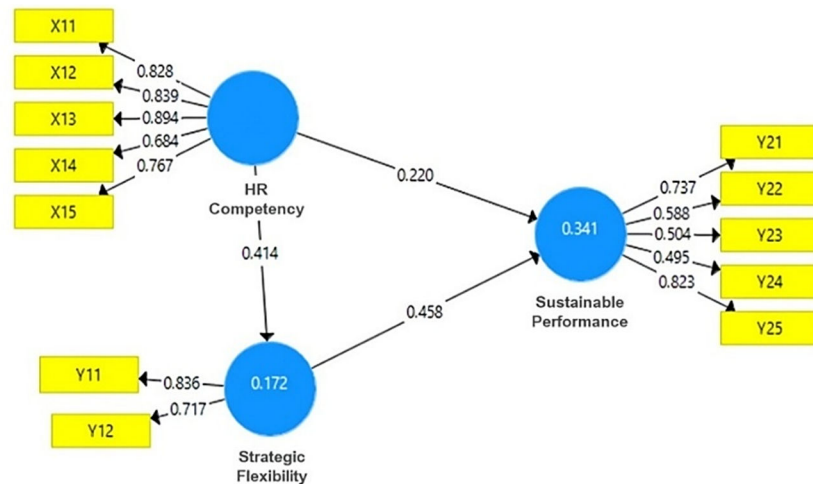
Source: Authors' elaboration using SmartPLS software.

Table 6 describes that the combination in the PLS model is concluded to have a modest effect and a weak effect. According to the instructions explained in the previous chapter, the four interpretations in Q^2 include: 0–0.2 (weak effect), 0.21–0.5 (moderate effect), 0.51–0.75 (moderate effect), and > 0.75 (strong effect). In the first model, *Strategic flexibility* formed by *HR competency* is 0.323. This means that *HR competency* influences *Strategic flexibility*, reaching 32.3% and other factors outside the first model are 67.7%. In the model, both *Sustainable performance* is shaped by *HR competency* and *Strategic flexibility*. As a result, the second model is no better than the previous model because the coefficient score obtained is 0.172, which shows a weak effect. With a residual value of 82.8%, many factors other than *HR competency* and *Strategic flexibility* predict *Sustainable performance*.

Table 7 describes the results of statistical testing through comparison of t-statistics with t-table (> 1.96) and probability scores (p < 0.05). The first finding proves that *HR competency* has a significant effect on *Strategic flexibility*. With two criteria (t-statistic = 3.927; prob. = 0.000), the hypothesis *H1* is accepted. Furthermore, in the hypothesis *H2*, contradictory results were found (t-statistic = 1.223; prob. = 0.222). The role of *HR competency* does not have a significant effect on *Sustainable performance*, so the hypothesis *H2* is rejected. Table 7 indicates that the hypothesis *H3* is accepted, because *Strategic flexibility* has a significant effect on *Sustainable performance* (t-statistic = 3.230; prob. = 0.001). Lastly, *HR competency* has a significant influence on *Sustainable performance* through *Strategic flexibility*. *Strategic flexibility* can play an impressive role in influencing the relationship between *HR competency* and *Sustainable performance*. With positive results (t-statistic = 2.494; prob. = 0.012), the hypothesis *H4* is accepted.

Table 6. Output of Q^2

Constructs	Q^2	Remarks
Strategic flexibility	0.323	Modest effect
Sustainable performance	0.172	Weak effect

Source: Authors' elaboration using SmartPLS software.

Table 7. Hypothesis test

Paths	Effect	Original sample	t-statistics	Prob. (p < 0.05)	Accepted/ Not accepted
H1: HR competency → Strategic flexibility	Partial	0.414	3.927	0.000	Accepted
H2: HR competency → Sustainable performance	Partial	0.220	1.223	0.222	Not accepted
H3: Strategic flexibility → Sustainable performance	Partial	0.458	3.230	0.001	Accepted
H4: HR competency → Strategic flexibility → Sustainable performance	Mediation	0.189	2.494	0.012	Accepted

Source: Authors' elaboration using SmartPLS software.

5. DISCUSSION

The motivation of this paper is to investigate the impact of HR competency on sustainable performance through the role of strategic flexibility. This is considered important as an effort to encourage sustainable MSMEs' performance, especially in the two regions of East Kalimantan, namely Penajam North Paser Regency and East Kutai Regency. Of the four proposed hypotheses, three were accepted, and one hypothesis was rejected. In general, the results of the analysis exceeded expectations and were in line with the literature linking the relationship between variable components.

First, the findings confirm that the better the HR competency, the more flexible the strategies can be determined. This is contained in a study conducted by Cania and Prendi (2024), where, by optimizing management capabilities (in this regard, HR competency), it is possible for MSMEs to carry out their business strategies better. Second, the analysis output indicates that when HR competency is improved, it does not have an impact on sustainable performance. All aspects are essential in building sustainable MSMEs' performance, including managing HR, which should play a crucial role. Even though the relationship is positive, the current level of HR competency is considered not yet optimal in operating MSME businesses. As stated by Harini et al. (2020) that in moving towards strong MSMEs, it is not enough for HR competency to only be equipped with creativity and innovation, but also how HR managers are able to compete to improve technology according to market competitiveness. Third, the results explain that better strategic flexibility has a significant impact on sustainable performance in the MSMEs cases studied. Inspired by studies explored by Bokhari et al. (2020) that to achieve business sustainability, MSMEs are not only based on good organizational planning, but are also able to develop measurable strategic flexibility. Fourth, it was found that strategic flexibility plays a significant role as a mediating variable in the causality between HR competency and sustainable MSMEs' performance.

Studies in the management edition conclude that physical and non-physical managerial roles can influence the level of profitability in various sectors (Abu-Serdaneh & Ghazalat, 2022; Vito et al., 2022). Yet, a small number of studies show how MSMEs in the manufacturing industry can implement flexible strategies to prevent sustainable performance problems based on managerial attributes (D'Amato et al., 2020). In this regard, quantitative studies are proposed to detect the main parameters of the sustainable performance of MSMEs, namely the company's objectives, its competitive advantages, and the environmental atmosphere (Šebestová & Sroka, 2020). There are two chronologies that can be justified from the emergence of studies that discuss the sustainable performance of MSMEs in emerging markets. First, MSMEs are considered an important component of the world's dynamic economy. Consequently, MSMEs must resolve internal obstacles and external limitations that can disrupt economic stability (Arsić et al., 2020). Second, MSMEs play a role in helping many countries to achieve sustainable development goals (Šebestová & Sroka, 2020).

Dissecting MSME's performance, which is influenced by HR competency and strategic flexibility, is a reasonable argument. By including economic and social considerations, the company's ability to encourage sustainable performance can be taken into account. Seo and Cho (2020) report that MSMEs that can maintain socio-economic ties can simultaneously help businesses be more intensive, prosperous, and survive market anomalies.

In practice, the conditions observed in MSMEs are not yet ideal. Although MSMEs in developing markets across both regions appear to have potential, hypothesis testing demonstrates that HR competency positively affects short-term sustainable performance. Nevertheless, this positive trend may not necessarily translate into long-term sustainable performance for MSMEs. In this context, the insignificant effect refers to the probability value. Practical insights also reveal that HR competency — reflected in skills, dedication, creativity, expertise, and ideas — has not yet been able to optimize the sustainable performance of MSMEs in terms of efficiency, financial, satisfaction, rewards, and prosperity.

6. CONCLUSION

Through a series of analyses, the results of the study in the MSMEs sector concluded four main points: 1) HR competency has a significant effect on strategic flexibility; 2) HR competency has an insignificant effect on sustainable performance; 3) strategic flexibility has a significant effect on sustainable performance; and 4) HR competency mediated by strategic flexibility has a significant effect on sustainable performance. The existence of MSMEs is very important in supporting economic growth and prosperity in developing markets such as Indonesia, especially in the objects investigated. Indirectly, most of the MSMEs' scale businesses in Penajam North Paser Regency and East Kutai Regency have developed optimally.

This study is useful in encouraging information enrichment for MSMEs' owners towards more comprehensive and appropriate management practices through implementing strategic flexibility, increasing HR investment, and involving all elements related to the strategy development process to gain a better understanding. Seeing the role of weak HR competency in determining the sustainable performance of MSMEs, the research contribution focuses on the need for competitive HR managers under the business environment strategy in an ever-changing market. In practice, MSMEs' managers can consider recruiting talented HR to overcome obstacles in the field.

The implications of the study also channel criticism of government policy so that it can be improved in the future. Because MSMEs have the stigma of being no better than business organizations (such as companies), the government's role in encouraging the accelerated growth of MSMEs must be carried out comprehensively. Specifically for the micro scale, attention needs to be paid to moving up to small scale and encouraging small scale to medium scale through protective regulations, low-interest loan assistance, incentives for MSMEs that excel, and programs that are beneficial for the survival of MSMEs. The outcomes

of the current study call for comprehensive improvements. In essence, policymakers should revitalize MSME development programs in both Penajam North Paser Regency and East Kutai Regency. First, enhance the HR competence of the MSME through regular training and mentoring, business incubators, vocational curricula tailored to MSME needs, and incentives for adopting digital technologies. Second, promote strategic flexibility by providing incentives for digital technology adoption, facilitating access to market information and industry trends, and encouraging business model innovation. Third, foster sustainable performance by gradually implementing sustainability standards, offering tax incentives to MSME operators, and ensuring sustainability certifications are accessible and affordable.

The paper on the relationship between HR competency, strategic flexibility, and sustainable performance is important for future studies because it provides an understanding of how internal capabilities can enhance the competitiveness and resilience of MSMEs in facing changes in the business environment. The paper also contributes to expanding the literature on adaptive strategies and the role of HR in business sustainability. However, the paper's findings have several limitations, such as a limited sample size and potential response bias from MSME practitioners. Another limitation is that the quantitative approach used does not fully capture the dynamics of the social and cultural context within small organizations.

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