

Empowering MSMEs agility: A microfoundational perspective linking human capital and dynamic managerial capability

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ABSTRACT

Human capital, dynamic managerial capability, and organizational agility are increasingly recognized as key enablers of strategic adaptation for micro, small, and medium enterprises, particularly in volatile environments. However, the pathway through which human capital fosters organizational agility remains insufficiently examined. This study investigates the mediating role of dynamic managerial capability in the relationship between human capital and organizational agility within micro, small, and medium enterprises in Bali, Indonesia. Adopting a quantitative approach, data were collected from 131 micro, small, and medium enterprises managers using structured questionnaires, employing a proportionate random sampling technique. The relationships among constructs were analyzed using variance-based structural equation model-partial least square, including measurement and structural model evaluation. The findings indicate that while human capital strongly influences dynamic managerial capability, its direct effect on organizational agility is weak. Mediation analysis confirms that dynamic managerial capability mediates the effect of human capital on agility. These results underscore that organizational agility in micro, small, and medium enterprises is realized not merely through the presence of human capital, but through its activation via dynamic managerial capability. This research provides empirical evidence for the microfoundational role of dynamic managerial capability in translating human resources into agile organizational performance, advances strategic capability theory, and offers practical insights for capability development in emerging economies.

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1. Introduction

Human capital, dynamic managerial capability, and organizational agility are pivotal for organizational competitiveness in dynamic environments. Human capital facilitates innovation and productivity by enhancing knowledge and skills (Bousquet et al., 2023). It is positively correlated to organizational agility, making it essential for micro, small, and

medium enterprises (MSMEs) to leverage their human resources effectively (Homayoun et al., 2024). Dynamic managerial capability enables firms to adapt and reconfigure resources for strategic alignment, emphasizing the dynamic interplay between management capability and organizational performance (Rafi et al., 2022). Organizational agility, characterized by swift responsiveness and adaptability, is vital to sustaining performance amidst volatility (El-Nsour, 2021) and is often regarded as a key determinant in enhancing firm performance in turbulent markets (Walter, 2021; Rubino et al., 2024). However, challenges include measuring intangible assets such as human capital, cultivating practical managerial cognition in the face of uncertainty (Dabić et al., 2021), and institutionalizing agility in resource-constrained settings, such as MSMEs (Akkaya & Qaisar, 2021).

MSMEs face volatile markets, limited resources, and evolving customer demands, making the integration of human capital, dynamic managerial capability, and organizational agility crucial. Human capital fosters innovation and resilience, which are essential for MSMEs survival, as it enhances employees' ability to respond effectively to market challenges (Priyono et al., 2020; Audretsch & Belitski, 2021). Dynamic managerial capability equips MSMEs leaders with capability to sense and seize opportunities while reconfiguring competencies to meet market demands, thereby aligning organizational strategies with external conditions (Sharma et al., 2022; Sidabutar & Siswanto, 2024). Organizational agility enables MSMEs to react swiftly to environmental changes, sustaining competitiveness and customer value creation (Homayoun et al., 2024). In this context, these constructs are interlinked mechanisms driving MSMEs agility and performance under external pressures (Walter, 2021).

Specific challenges facing Bali's MSMEs, namely, economic volatility due to tourism dependency, uneven digital transformation adoption, and resource fragility. This underscores the urgency of integrating human capital, dynamic managerial capability, and organizational agility, as these constructs are not only theoretically interdependent but also practically vital for helping MSMEs navigate region-specific uncertainties, build adaptive capacity, and sustain agility amid ongoing structural and technological transitions in emerging economies like Bali (Adhiatma et al., 2023). Bali's MSMEs' reliance on tourism makes them particularly susceptible to economic fluctuations, reinforcing the need for agile management practices and dynamic managerial capability to adapt to unstable market conditions triggered by external shocks, such as the corona virus disaster 2019 (COVID-19) pandemic (Rahman et al., 2022). Furthermore, enhancing digital adoption through proactive strategies can bolster operational efficiency and resilience, helping overcome the fragility associated with limited resources (Brodeur et al., 2022). Therefore, a holistic approach that integrates human capital development with agile methodologies is essential to fostering sustainable growth in this unique context (Khalil & Belitski, 2020).

Despite the existing literature, empirical evidence on the mechanisms by which human capital influences organizational agility is limited, primarily through dynamic managerial capability mediation (Jingwen et al., 2025). The relationship is often examined independently, overlooking the dynamic interplay between managerial micro foundations and organizational outcomes in MSMEs (Prabhu & Srivastava, 2023). Additionally, extant studies lack a cohesive model integrating these three variables, particularly in developing economies with constrained institutional support and managerial capacity (Bousquet et al., 2023). This void underscores the need for mediation analysis that elucidates dynamic managerial capability pivotal bridging role, allowing for practical applications in MSMEs contexts (Dabić et al., 2021).

Dynamic managerial capability intermediates the effect of human capital on organizational agility by transforming individual competencies into organizational flexibility through strategic sensing, seizing, and reconfiguring (Hajiagha et al., 2024). As a higher-

order capability, dynamic managerial capability enables managers to integrate knowledge, adapt to turbulence, and reallocate resources effectively, thus operationalizing agility (Ben Ghrbeia & Alzubi, 2024). It aligns human capital potential with organizational demands, serving as a conduit through which skill-based advantages translate into actionable agility (Priyono et al., 2020). This mediating role emphasizes the importance of cultivating managerial capability that enhance both responsiveness and innovation capacity in MSMEs (Heubeck, 2024).

This study uniquely bridges the triadic relationship between human capital, dynamic managerial capability, and organizational agility in MSMEs by empirically testing the mediating role of dynamic managerial capability, an area previously underexplored (Freixanet & Renart, 2020; Clemente-Almendros et al., 2025). It aligns with the human capital theory, which underscores the strategic importance of human resources in organizational performance and capability development. It contributes to theory by integrating perspectives on resource-based and dynamic managerial capability, contextualized within the context of MSMEs operations (Chebbi et al., 2023). Moreover, it emphasizes the strategic process through which managerial competencies transform static human resources into agile organizational configurations (Alhammadi et al., 2024).

This research seeks to investigate the mediating impact of dynamic managerial capability on the association between human capital and organizational agility in MSMEs. Specifically, it investigates how dynamic managerial capability enables the translation of human capital into organizational agility by deploying strategic managerial actions that enhance responsiveness and innovation capacity. The research provides empirical evidence to support a conceptual model that elucidates the indirect pathway of influence, informing both theory and practice on strategic capability building in MSMEs.

2. Literature Review and Hypothesis Development

2.1. Literature Review

2.1.1. Ressource-Based View

This research is conceptually grounded in the resource-based view (RBV), which asserts that enduring competitive advantage stems from valuable, scarce, inimitable, and non-substitutable internal assets (Barney, 1991), and is extended through the dynamic managerial capability perspective, highlighting the reconfiguration of such resources under environmental turbulence (Tece et al., 1997). Within this integrated grand-theoretical lens, human capital constitutes a strategic resource base (Mitchell et al., 2021), dynamic managerial capability represents the micro-foundational mechanism that orchestrates and renews these resources (Heubeck & Meckl, 2022), and organizational agility reflects the manifested adaptive outcome of effective resource reconfiguration (Altintas, 2023). Accordingly, the proposed hypotheses are systematically derived by conceptualizing human capital as the input resource, dynamic managerial capability as the transformational capability, and organizational agility as the strategic performance outcome within MSMEs operating in volatile environments (Bianchi & Stoian, 2024).

2.1.2. Human Capital

Human capital refers to the aggregation of employees' skills, competencies, knowledge, and experience, which enhance productivity and innovation (Ndofirepi, 2024). This research is grounded in human capital theory, which posits that human resources are pivotal assets in organizations, driving competitive advantage and innovation. In MSMEs, human capital is a cornerstone of strategic advantage (Kusumawijaya & Astuti, 2024), enabling firms to overcome scale limitations through

entrepreneurial orientation and experiential knowledge (Timothy, 2022). However, measuring human capital real impact remains difficult due to the intangible nature of knowledge and skill assets and the variation in institutional quality across regions (Widianto et al., 2021). Furthermore, criticisms revolve around the linear assumptions in traditional models, which overlook socio-cultural and behavioral mediators in translating human capital into performance (Roth et al., 2023). MSMEs, especially, face human capital-related challenges due to limited access to talent, underinvestment in training, and high turnover, making it challenging to retain and optimize human capital for sustained growth (Pinnington et al., 2024).

2.1.3. Dynamic Managerial Capability

Dynamic managerial capability embodies the capacity of managers to build, integrate, and reconfigure organizational resources to adapt and seize market opportunities (Kryeziu et al., 2024). It is instrumental in fostering MSMEs' resilience, agility, and strategic transformation amidst turbulent environments (Heubeck & Meckl, 2022). Despite its promise, dynamic managerial capability faces challenges in empirical quantification, particularly because of its conceptual overlap with broader dynamic managerial capability and its reliance on contextual managerial cognition (Mehta & Ali, 2021). Critics argue that dynamic managerial capability is often conflated with leadership traits, failing to distinguish clearly between structural processes and individual attributes (Ben Ghrbeia & Alzubi, 2024). Moreover, MSMEs often lack institutional mechanisms and developmental infrastructure to cultivate dynamic managerial capability, relying heavily on owner-managers whose personal capacity may not scale effectively (Bianchi & Stoian, 2024).

2.1.4. Organizational Agility

Organizational agility denotes a firm's ability to sense, respond to, and adapt swiftly to environmental changes through strategic flexibility and responsiveness (Altintas, 2023). In MSMEs, organizational agility is essential for maintaining competitiveness, especially in volatile contexts, by enabling swift decision-making and innovation (Oliveira & Silva, 2022). However, achieving organizational agility in MSMEs is constrained by limited resource bases, fragmented strategic planning, and weak digital infrastructure (Cruz Maldonado et al., 2022). Organizational agility also attracts criticism for being overly idealistic, assuming equal internal alignment and readiness for change, which is rarely the case in fragmented MSMEs structures (Balasundaram & Mathew, 2024). The integration of agility across hierarchical levels remains inconsistent, and efforts to institutionalize organizational agility often falter due to resistance to change and lack of capability convergence (Issah et al., 2023).

2.2. Hypothesis Development

2.2.1. The Effect of Human Capital on Organizational Agility

Human capital encompassing skills, knowledge, and experience, is pivotal in enhancing MSMEs organizational agility by fostering adaptive capacity and innovation potential (Mitchell et al., 2021; da Rosa et al., 2023). Within RBV, human capital constitutes a valuable, rare, inimitable, non-substitutable (VRIN) knowledge stock that strengthens MSMEs capacity to build agile routines and responsiveness (Barney, 1991). By enhancing learning speed and innovation readiness, human capital supports sensing and swift adaptation that underpin agility in dynamic environments (Altintas, 2023). Thus, in RBV-dynamic capability terms, human capital becomes agile only when managers reconfigure it into adaptive routines in

the face of turbulence (Teece et al., 1997). Human capital contributes to strategic responsiveness and operational flexibility, which are essential for sustaining competitive advantage in dynamic environments (Agyapong et al., 2022). However, the direct influence of human capital on organizational agility can be constrained by contextual barriers such as low absorptive capacity, institutional voids, and underinvestment in capability development (Pu et al., 2024). Critics argue that relying solely on human capital may not guarantee agility without an aligned organizational culture or technological readiness (Durán et al., 2023). Moreover, human capital benefits may be counteracted by employee turnover, knowledge silos, and leadership inertia that hinder fast reconfiguration (Lee & Wang, 2023). Thus, while human capital is foundational for organizational agility, its efficacy depends on the broader organizational system's readiness to transform human inputs into agile action. **H₁: Human Capital Has a Positive Effect on Organizational Agility.**

2.2.2. The Effect of Human Capital on Dynamic Managerial Capability

Human capital substantially shapes the development of dynamic managerial capability by enhancing the cognitive, social, and experiential foundations of managerial action (Heubeck & Meckl, 2022). In MSMEs, human capital equips managers with the proficiency to sense and seize opportunities and reconfigure resources under uncertainty (Razmdoost et al., 2020). Nonetheless, dynamic managerial capability emergence depends on the conversion of general human capital into domain-specific capabilities through learning, reflection, and institutional support (Khan et al., 2021). Critics note that human capital alone is insufficient without behavioral competencies and strategic alignment to contextual demands (Majhi et al., 2023). Additionally, MSMEs often lack formal mechanisms to strategically harness human capital, risking underutilization and the formation of static knowledge traps (Chen et al., 2023). From RBV, human capital is the input asset, but dynamic capability logic requires orchestration to transform it into dynamic managerial capability (Barney, 1991). Therefore, while human capital serves as a precursor to dynamic managerial capability, its conversion into actionable capabilities demands deliberate orchestration and supportive organizational processes (Kusumawijaya & Astuti, 2023a). **H₂: Human Capital Has a Positive Effect on Dynamic Managerial Capability.**

2.2.3. The Effect of Dynamic Managerial Capability on Organizational Agility

Dynamic managerial capability enables organizational agility by facilitating strategic sensing, opportunity seizing, and rapid resource reconfiguration (Heubeck, 2024). In dynamic capability theory, dynamic managerial capability is the reconfiguration mechanism converting resource bundles into organizational agility when embedded in learning systems (Teece et al., 1997). Dynamic managerial capability supports organizational agility through managerial cognition that aligns strategy with volatile environmental cues, which is essential for MSMEs survival (AlShehhi et al., 2023). However, translating dynamic managerial capability into organizational agility faces several challenges, including inconsistent strategic orientation, limited absorptive capacity, and constrained managerial autonomy (Pu et al., 2024). Critics highlight the risk of overdependence on individual managers, which may inhibit the institutionalization of agility practices (Bianchi & Stoian, 2024). Furthermore, agility may be counterproductive if pursued without strategic coherence, leading to reactive rather than proactive adaptation (Kevill et al., 2021). Thus, while dynamic managerial capability is critical to organizational agility, its

efficacy depends on its embeddedness in robust systems and learning cultures. **H₃: Dynamic Managerial Capability Has a Positive Effect on Organizational Agility.**

2.2.4. The Effect of Human Capital on Organizational Agility through Dynamic Managerial Capability

Dynamic managerial capability mediates the relationship between human capital and organizational agility, consistent with the foundational mediation logic (Baron & Kenny, 1986), by transforming human capital into strategic adaptive behaviors (Greven et al., 2023). Human capital provides the foundational knowledge and skill base, while dynamic managerial capability channels these into actionable configurations that drive agility (Sebuwufu & Timilsina, 2024). RBV positions human capital as the resource pool, while dynamic capability theory frames dynamic managerial capability as the microfoundational bridge turning VRIN inputs into agile outcomes (Barney, 1991; Teece et al., 1997; Heubeck & Meckl, 2022). Without dynamic managerial capability, human capital may remain latent or misaligned with environmental demands, especially in MSMEs with limited strategic foresight (Durán et al., 2023). Critics argue that the mediating role of dynamic managerial capability may dilute human capital direct impact and complicate causal inference due to overlapping constructs (Ben Ghrbeia & Alzubi, 2024). Moreover, challenges arise in contexts lacking leadership development infrastructures or where managerial cognition is misaligned with strategic agility goals (Liu et al., 2021). Thus, this mediation is both enabling and conditionally dependent on firms' capacity to cultivate and sustain dynamic managerial capability as a systemic capability that bridges individual talent and organizational performance. **H₄: Dynamic Managerial Capability Mediates the Effect of Human Capital and Organizational Agility.**

2.3. Research Framework

To illustrate the relationships among the key variables, the research framework is presented visually in Figure 1. Within the research framework, the model delineates a directional mechanism in which human capital directly and indirectly drives organizational agility through dynamic managerial capability, positioning dynamic managerial capability as a mediating strategic conduit that transforms human resource endowments into adaptive organizational outcomes within MSMEs.

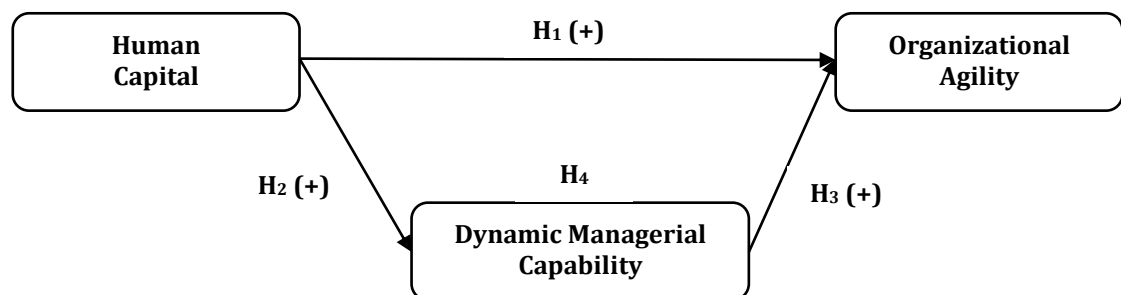


Figure 1. Research Framework

3. Research Methods

3.1. Population and Sampling Method

This study adopts a quantitative approach and is based on 36,387 MSMEs in Bali, Indonesia. The sample size was calculated using the Slovin formula, assuming a sampling error of 5%, the sample size of this research was 396. A proportionate random sampling

method was utilized to ensure representative inclusion from different MSMEs subsectors across Bali, Indonesia. Data were gathered using a structured online questionnaire via official MSMEs mailing lists, with automated follow-up reminders to increase response participation. However, only 131 responses were valid and usable due to non-response and incomplete surveys, leading to a response rate of 33.08%.

3.2. Data Collecting Method

Multiple items were employed to assess each construct, and each item was rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This study is conceptually anchored in the resource-based view and dynamic managerial capability theory to explain how human capital converts into organizational agility via dynamic managerial capability in turbulent MSMEs contexts. The cross-sectional mediation design reflects dynamic capability processes by examining how managerial actions convert resources into agile responses within current environmental constraints. Human capital was assessed using eight items adapted from earlier research by Andersén (2021). Dynamic managerial capability was measured using eight items adapted from Mostafiz et al. (2019). Organizational agility was measured using eight items adapted from Sharifi and Zhang (2001).

3.3. Data Analysis Method

Data analysis was conducted using partial least square-structural equation model (PLS-SEM), including measurement and structural model evaluation with 5.000-sample bootstrapping in WarpPLS 7.0 (Hair et al., 2017; Kock, 2020). A variance-based PLS-SEM approach was selected for its robustness in modeling intricate mediation with limited samples and nonnormal data. The variables were assessed using items developed and used in earlier studies to ensure the study's validity and reliability. The data analysis followed a rigorous and sequential PLS-SEM procedure using WarpPLS 7.0. First, the measurement model was appraised by examining indicator reliability (outer loadings > 0.7), internal consistency reliability (Cronbach's alpha and composite reliability > 0.7), and convergent validity (Average Variance Extracted/AVE > 0.5). Mediation effects were assessed via bootstrapping with 5.000 resamples to derive indirect effects and bias-corrected confidence intervals. Statistical significance was established based on p-values (< 0.05) and the exclusion of the confidence interval from zero, ensuring robust hypothesis testing and comprehensive model validation.

4. Results and Discussion

4.1. Characteristics of Respondent

Table 1 show the respondent profile reveals a gender imbalance, with 76.3% male respondents, reflecting a gendered managerial landscape in MSMEs that can influence organizational agility through differentiated cognitive and leadership styles. The age distribution shows 43.5% of respondents are above 41 years, indicating a mature managerial workforce potentially endowed with experiential knowledge critical to the development of dynamic managerial capability. The high proportion of undergraduate respondents (82.4%) suggests a foundational but constrained intellectual capital base, which impacts the firm's absorptive capacity and its readiness for organizational agility. Furthermore, 61.1% of respondents report 1–5 years of work experience, suggesting a predominance of early-stage managerial experience, which may limit the depth of strategic cognition required for effective capability reconfiguration. Collectively, these descriptive statistics underscore the urgency of integrating strategic human capital development and targeted managerial training to enhance dynamic

managerial capability and organizational agility, particularly in the resource-constrained, demographically skewed MSMEs context.

Table 1. Characteristics of Respondent

Characteristics	Indicator	Frequency	Percent
Gender	Female	31	23.7
	Male	100	76.3
Age	20 - 30 years	35	26.7
	31 - 40 years	39	29.8
	41 and above	57	43.5
Education	Undergraduate	108	82.4
	Postgraduate	23	17.6
Work Experience	1 - 5 years	80	61.1
	5 and above	51	38.9

4.2. Validity Test

The validity test results are presented in Table 2. All factor loadings exceed the recommended cutoff of 0.6 (Hair et al., 2017). These results substantiate the measurement robustness of human capital (HC), dynamic managerial capability (DMC), and organizational agility (OA) constructs within the structure-based model.

Table 2. Validity Test Result

Item Indicator	Human Capital	Dynamic Managerial Capability	Organizational Agility
HC1	0.780		
HC2	0.740		
HC3	0.736		
HC4	0.778		
HC5	0.721		
HC6	0.760		
HC7	0.790		
HC8	0.742		
DMC1		0.783	
DMC2		0.746	
DMC3		0.601	
DMC4		0.764	
DMC5		0.730	
DMC6		0.817	
DMC7		0.764	
DMC8		0.765	
OA1			0.734
OA2			0.778
OA3			0.812
OA4			0.753
OA5			0.745
OA6			0.729
OA7			0.801
OA8			0.801

4.3. Reliability Test

Reliability tests are presented in Table 3. All constructs show AVE values above 0.5, composite reliability greater than 0.7, and Cronbach's alpha exceeding 0.7, fulfilling recommended thresholds (Hair et al., 2017). These consistently high indices confirm

strong internal consistency and construct reliability, reinforcing the measurement precision of human capital, dynamic managerial capability, and organizational agility within the proposed mediation framework.

Table 3. Reliability Test

Variables	AVE	Composite Reliability	Cronbach's Alpha
Human Capital	0.701	0.889	0.857
Dynamic Managerial Capability	0.747	0.863	0.816
Organizational Agility	0.791	0.883	0.848

4.4. Hypothesis Test

The path coefficient (Figure 2 and Table 4) from human capital to dynamic managerial capability is robust at 0.896 ($p < 0.001$), providing strong support for a significant and robust causal relationship. This supports theoretical assertions that the cognitive, experiential, and social dimensions embedded in human capital directly enhance managerial capability necessary for strategic action in volatile contexts. The significant coefficient indicates that, in MSMEs with limited institutional scaffolding, human capital remains a primary antecedent in cultivating dynamic managerial capability.

The path from dynamic managerial capability to organizational agility registers at 0.785 ($p < 0.001$), indicating a decisive mediating role through which managerial competencies translate internal resources into agile behaviors. This result validates the theoretical framework positioning dynamic managerial capability as the critical operational mechanism that enables firms to sense, seize, and reconfigure in response to environmental dynamics. The magnitude of this coefficient suggests that agility is substantially contingent upon the presence and effectiveness of dynamic managerial capabilities, especially within the entrepreneurial architecture of MSMEs.

Conversely, the direct effect of human capital on organizational agility is relatively modest ($\beta = 0.157, p = 0.033$), supporting the hypothesis that human capital's effect on agility is indirect and mediated mainly by dynamic managerial capability. This empirical pattern underscores the urgency of redirecting MSMEs capability development strategies from mere skill acquisition toward cultivating dynamic managerial capability as a mediating lever. These findings significantly advance theory by delineating the transformative path from static resource potential to adaptive organizational behavior, and by addressing gaps in empirical validation and in strategic capability theory.

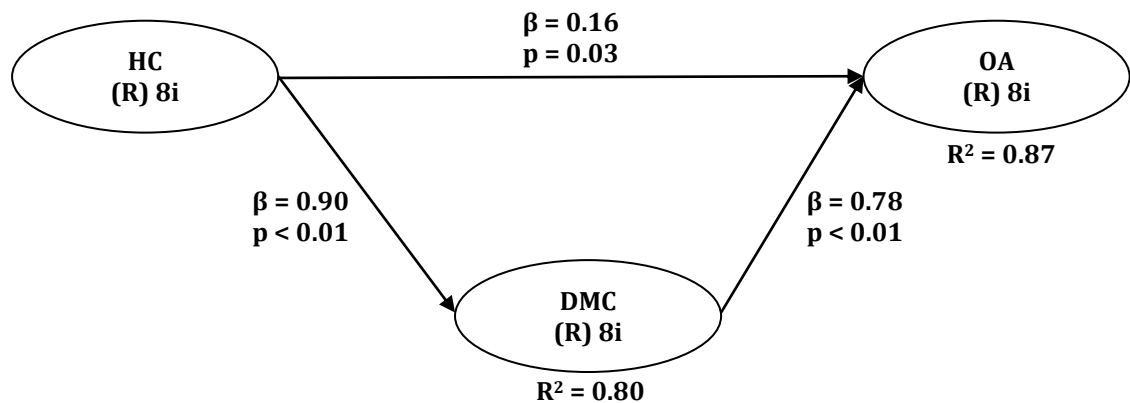


Figure 2. Research Model Test Result

Table 4. Path Coefficient

Variables	Human Capital	Dynamic Managerial Capability
Dynamic Managerial Capability	0.896*	
Organizational Agility	0.157 (p=0.033)	0.785*

The mediation analysis (Hair et al., 2017) indicates that dynamic managerial capability mediates the relationship between human capital and organizational agility (Table 5), as evidenced by a variance accounted for (VAF) value of 0.818 and the reduction of the direct effect from 0.157 (p = 0.033) to 0.703 when dynamic managerial capability is included. This confirms that, while human capital exerts a weak influence on organizational agility independently, its effect becomes substantial only when dynamic managerial capability is activated, underscoring the strategic role of managerial capabilities in actualizing agility. The significant paths from human capital to dynamic managerial capability ($\beta = 0.896$, $p < 0.001$) and from dynamic managerial capability to organizational agility ($\beta = 0.785$, $p < 0.001$) underscore dynamic managerial capability's pivotal role as a conduit that transforms individual competencies into collective organizational responsiveness. This strongly supports the hypothesis that dynamic managerial capability operationalizes the strategic translation of skill-based resources into adaptive capabilities, particularly crucial in MSMEs lacking formal institutional mechanisms.

The mediation result validates the conceptual necessity of dynamic managerial capability as an intermediary that aligns human resource potential with environmental adaptability, thereby addressing longstanding theoretical gaps in the micro foundation-agility linkage. Empirical confirmation of complete mediation shows that, in MSMEs, agility cannot be derived from human capital alone but must be facilitated by dynamic managerial processes that sense, seize, and reconfigure resources. This finding is urgent for advancing strategic capability theory and for guiding MSMEs policy and practice toward prioritizing leadership development, reflective learning, and capability integration as mechanisms to harness human capital effectively. As such, the mediation analysis significantly contributes to the empirical elaboration of dynamic managerial capability theory in the MSMEs context.

Table 5. Mediation Analysis

Variable relationship	HC → OA without DMC	HC → DMC	DMC → OA	HC → OA with DMC	VAF Value
Human Capital → Dynamic Managerial Capability → Organizational Agility	0.157 (p=0.033)	0.896*	0.785*	0.703*	0.818

The effect size analysis (Hair et al., 2017) in Table 6 confirms that human capital exerts a powerful influence on dynamic managerial capability, with a value of 0.803, indicating a substantial effect and supporting the assertion that human capital is foundational to the development of managerial cognition and adaptability. This reinforces the view that cognitive and experiential aspects of human resources are essential for fostering dynamic managerial processes in MSMEs. The impact of dynamic managerial capability on organizational agility is also significant, with an effect size of 0.729, further validating it as the principal strategic enabler that channels internal competencies into agile organizational responses. This strong effect size supports the theoretical proposition that agility in MSMEs is heavily reliant on leaders' strategic

capability to sense, seize, and reconfigure in the face of environmental volatility. In contrast, the effect size of human capital on organizational agility is moderate at 0.187, suggesting a weaker direct effect and highlighting the need for dynamic managerial capability as a mediating variable. These results justify the urgency of investing in managerial capability development to leverage the full potential of human capital and generate sustained agility in MSMEs. The research, therefore, contributes significantly to advancing strategic resource theory by quantifying the indirect value-creation mechanisms of human capital through dynamic managerial capability.

Table 6. Effect Size

Variables	Human Capital	Dynamic Managerial Capability
Dynamic Managerial Capability	0.803	
Organizational Agility	0.187	0.729

4.5. Discussion

4.5.1. The Effect of Human Capital on Organizational Agility

The results indicate that the direct impact of human capital on organizational agility among MSMEs in Bali, Indonesia is positive yet modest, highlighting the limited standalone contribution of human capital to agility. Additionally, local cultural factors, such as hierarchical structures and collective decision-making, influence how human capital is activated, potentially affecting digital distractions and productivity in these contexts. This finding aligns with prior literature suggesting that although human capital equips firms with knowledge (Kusumawijaya & Astuti, 2023b) and skills (Khan et al., 2021), its transformative effect is contingent on additional mechanisms that activate capabilities (Mehta & Ali, 2021).

In volatile MSMEs environments such as Bali, where agility is critical for competitive survival, static knowledge assets without strategic enactment are insufficient to generate responsiveness (Rupeika-Apoga et al., 2022). The contribution of this research lies in demonstrating that while human capital is a prerequisite, it must be operationalized through intermediary constructs to yield organizational agility outcomes (Ghavampour et al., 2025). This calls for a strategic shift in MSMEs capability development from acquisition-focused to activation-focused models that integrate human capital into dynamic routines (William et al., 2024). The research provides empirical justification for more comprehensive frameworks linking resource potential with organizational adaptability in emerging economies (Chebbi et al., 2023). This outcome reinforces RBV's premise (Barney, 1991) that resource possession alone is insufficient without dynamic reconfiguration mechanisms (Teece et al., 1997).

4.5.2. The Effect of Human Capital on Dynamic Managerial Capability

The path coefficient between human capital and dynamic managerial capability is significant, indicating a substantial direct effect of human capital on dynamic managerial capability development in Bali's MSMEs sector. This supports the theoretical grounding that cognitive, experiential, and relational dimensions of human capital are foundational to managerial adaptation and strategic decision-making (Timothy, 2022). This finding confirms the dynamic managerial capability theory by Teece et al. (1997), which holds that managerial orchestration transforms strategic resources into adaptive advantage (Barney, 1991). In the MSMEs context of Bali, where formal strategy systems are often lacking, these findings emphasize the criticality of nurturing managerial competencies through targeted human capital investment (Bianchi & Stoian, 2024). This highlights the urgency of repositioning human capital not as an end but as a base from which dynamic

managerial routines emerge (Xie et al., 2022). Therefore, this study significantly contributes by operationalizing how human capital enables strategic sensing, seizing, and reconfiguration, which are essential to organizational survival in emerging contexts (Soomro & Soomro, 2024).

4.5.3. The Effect of Dynamic Managerial Capability on Organizational Agility

The empirical evidence indicates that dynamic managerial capability has a substantial effect on organizational agility, underscoring its role as a principal enabler of agile adaptation among MSMEs in Bali. This validates theoretical propositions that agility is not solely rooted in resource availability but in the dynamic managerial capacity to reconfigure and align these resources to strategic goals (Mataveli et al., 2024). This evidence substantiates that agility emerges from managerial reconfiguration capacity rather than mere resource endowment (Barney, 1991; Teece et al., 1997). Given the strategic turbulence and resource limitations in the Balinese MSMEs environment, the practical implications are significant: Firms must cultivate dynamic managerial capability as a core leadership trait to enhance agility (Aghasi et al., 2022). This finding underscores the operational necessity of equipping MSMEs not only with resources but also with adaptive leadership to translate capabilities into agile performance (William et al., 2024). As such, this study advances the strategic capabilities literature by empirically grounding dynamic managerial capability as a linchpin between static human capital and dynamic organizational responsiveness (Bianchi & Stoian, 2024).

4.5.4. The Mediation of Dynamic Managerial Capability on the Effect of Human Capital on Organizational Agility

The mediation analysis confirms that dynamic managerial capability mediates the relationship between human capital and organizational agility, illustrating that the strategic transformation of human capital into agile responses requires the intervention of dynamic managerial mechanisms. The study also highlights that while human capital serves as a foundational resource, its effectiveness in driving agility depends on dynamic managerial mechanisms that facilitate its operationalization, particularly in volatile MSMEs environments. This affirms theoretical views that human capital alone does not suffice for agility unless activated by managerial cognition, experience, and relational acumen (Timothy, 2022). This complete mediation strengthens the argument that dynamic managerial capability serves as a critical path enabler, effectively operationalizing static knowledge assets into responsive strategic behaviors (Hoang, 2022). For MSMEs in Bali, this implies that strategic agility cannot be attained through human resource investments alone but requires intentional managerial capability development that translates resource potential into actionable agility (Motwani & Katatria, 2024). Hence, this finding makes a timely contribution by providing empirical grounding for theoretical frameworks that advocate the microfoundational mediation of strategic capabilities in dynamic environments (Walter, 2021). The mediation mechanism empirically validates RBV–dynamic managerial capability integration (Barney, 1991; Teece et al., 1997), where resources generate agility only through managerial reconfiguration.

5. Conclusion

This study empirically validates the hypothesis that dynamic managerial capability mediates the impact of human capital on organizational agility within MSMEs. The statistical findings demonstrate a robust positive path from human capital to dynamic managerial capability and from dynamic managerial capability to organizational agility, while the direct

effect of human capital on organizational agility remains marginal. The mediation analysis confirms complete mediation, indicating that the transformation of human capital into organizational agility requires the intermediary role of dynamic managerial capability. Consequently, the hypothesis is substantiated: Human capital alone does not directly generate agility in MSMEs but becomes effective through the strategic mechanisms encapsulated by dynamic managerial capability. These include the capacities to sense environmental shifts, seize emergent opportunities, and reconfigure organizational assets in response to volatility. This conclusion is pivotal for advancing strategic resource theory by illustrating how intangible assets gain operational value when aligned with dynamic leadership processes.

Theoretically, this study extends the dynamic managerial capability framework by elucidating the microfoundational role of managerial agency in converting human capital into adaptive organizational outcomes. It empirically reinforces the premise that agility is not merely an output of resource possession but a function of how resources are enacted through dynamic leadership. This contribution addresses a critical theoretical gap in MSMEs studies, particularly within emerging markets where institutional infrastructure is underdeveloped. Practically, the findings urge MSMEs in emerging economies to shift from skill accumulation toward dynamic capability-based agility strategies through experiential learning, cognitive training, and policy-aligned institutional support. MSMEs should prioritize cultivating dynamic managerial capability through experiential learning, cognitive agility training, and social network expansion to unlock the full potential of their human capital. Policy-makers and development agencies must reorient capacity-building initiatives to embed leadership agility at the core of MSMEs support mechanisms. This alignment will enable MSMEs to remain resilient and responsive in highly volatile environments like Bali.

This research is limited by its regional scope, focusing solely on MSMEs within the Balinese context, thereby limiting the generalizability of its findings to other cultural and economic environments. Additionally, the study uses a cross-sectional design, capturing managerial perceptions and organizational attributes at a single point in time. This temporal limitation restricts causal inference, particularly regarding how dynamic managerial capability capabilities develop and influence organizational agility under evolving competitive or institutional conditions. Another limitation is reliance on self-reported measures, which may introduce biases such as social desirability or respondent subjectivity. Furthermore, while the model demonstrates strong fit and validity, it does not account for external environmental variables (e.g., market turbulence, digital infrastructure) that may moderate or interact with the core constructs. These constraints underscore the need for careful interpretation and contextual application of the findings.

Future research should pursue cross-regional and cross-sectoral comparisons, longitudinal tracking, environmental moderation tests, qualitative explorations, and institutional ecosystem analyses to deepen theoretical and empirical robustness. Longitudinal designs could be employed to trace the developmental trajectory of dynamic managerial capability and its impact on agility over time, thereby unpacking the dynamic interplay between strategic cognition and organizational responsiveness. Subsequent studies could also integrate environmental moderators, such as industry turbulence or technological change, to explore their influence on the strength and direction of the mediation. Moreover, qualitative approaches such as case studies or narrative analyses could deepen understanding of the internal processes by which MSMEs cultivate and deploy dynamic managerial capability in practice. Finally, future research may explore the role of institutional support systems, such as incubators, training centers, or government policies, in scaffolding the development of dynamic managerial capability. This would provide a more

comprehensive framework for linking individual, organizational, and ecosystem-level factors to foster agile, resilient MSMEs in emerging economies.

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