

The intermediary role of digital on the transformation of human resource and competitive advantage in women-led enterprises

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ABSTRACT

This study explores the mediating role of digitalization in the relationship between human resource transformation and competitive advantage in women-led small and medium enterprises. The analysis utilized data from 120 women entrepreneurs across diverse sectors, with the study's methodology incorporating Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that competitive advantage and human resource transformation collectively account for 70.3% of the variance in business performance ($R^2 = 0.703$), underscoring their critical influence. However, the expected mediating effect of digitalization on BP was discovered to be non-significant ($P = 0.094$), suggesting its role might be more supportive than transformative in this context. Notwithstanding this finding, digitalization remains a pivotal catalyst for operational efficiency and innovation. This study contributes to extant scholarship by drawing upon the Resource-Based View and Dynamic Capabilities Theory, offering novel insights into the strategic importance of digital tools and human capital in women-led Small and Medium Enterprises.

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1. Introduction

In the contemporary business landscape, the role of women entrepreneurs has gained significant momentum, reflecting their growing influence in leadership positions and their contributions to economic progress. This shift signals a more significant societal trend that recognizes the substantial impact of women-led businesses on innovation and overall economic growth. Nevertheless, despite these strides, women continue to encounter significant obstacles that prevent them from realizing their full potential in the entrepreneurial sphere. Previous studies have emphasized women's hurdles, including restricted access to business networks, societal norms, and difficulties balancing work and family life demands. For example, research in Sri Lanka's tourism industry reveals that cultural constraints and mobility limitations hinder women's participation in business associations. These are vital for resource acquisition and networking (Handaragama & Kusakabe, 2021). Such challenges create barriers to business growth, as seen in various global contexts (Roy et al., 2017). Additionally, entrepreneurial success requires specific competencies, many exhibiting gender-specific nuances. Female entrepreneurs must develop a unique blend of personal, business, and interpersonal skills to navigate the entrepreneurial journey effectively (Mitchelmore & Rowley, 2013). However, the existing support systems often fail to adequately address these needs, particularly in leadership and resource management. The leadership approaches women entrepreneurs adopt, including transformational and servant leadership, are crucial in fostering positive business outcomes, especially in sectors emphasizing service (Kuppusamy et al., 2010). These leadership styles create a cohesive organizational culture that drives improved Business Performance (BP). For example, in Indonesia, research shows that effective leadership can significantly enhance the performance of women-led Micro, Small, and Medium Enterprises (MSMEs) (Made Putri Ariasih et al., 2024). However, a comprehensive understanding of how digital transformation influences the Competitive Advantage of women-led businesses remains underexplored. Digitalization involves implementing new technologies and necessitates reevaluating organizational culture and human resource strategies to foster innovation and flexibility (Nicolás-Agustín et al., 2022). Core concepts in this study include

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Entrepreneurial Orientation, human resource transformation, and Competitive Advantage. Entrepreneurial Orientation refers to a firm's strategic posture characterized by proactivity, innovation, and risk-taking, which are crucial for women entrepreneurs in enhancing BP (Anggraini et al., n.d.). Concurrently, integrating digital tools into human resource practices—commonly known as electronic Human Resource Management (e-HRM)—has improved employee engagement and enhanced organizational outcomes (Berber et al., 2018). Drawing from the Resource-Based View (RBV), unique organizational resources, such as human capital, are fundamental to sustaining a competitive edge (Ziyuan Sun & Wenjiao Wang, 2023). This study aims to investigate the mediating effect of digitalization on the relationship between Transformational Human Resources (THR), CA, and BP of women entrepreneurship. This paper is structured to explore the research topic comprehensively. Consequently, the literature review synthesizes critical findings and theoretical frameworks, highlighting research gaps. The methodology section outlines data collection and analysis methods, ensuring reliability and validity. The results section presents the empirical findings, including statistical analyses. Meanwhile, the discussion interprets these results in the context of the existing literature and suggests future research directions. The conclusion summarizes the study's vital findings, emphasizing its significance and offering practical recommendations. This structure ensures a cohesive presentation, enhancing the research's contribution to the field.

2. Literature Review

The theoretical foundation of Business Performance in women's entrepreneurship involves various factors that influence the success of female entrepreneurs. Key elements include digital marketing, socio-cultural influences, access to finance, and Education/support systems. Moreover, studies show a positive correlation between digital marketing and business outcomes for female entrepreneurs, with practical strategies enhancing visibility and adaptability (Morales, 2023). Socio-cultural factors, such as political instability and the need for role models and Education, also impact success (Jaim, 2022; Malik et al., 2021). Access to finance remains crucial, with credit constraints significantly affecting Business Performance (KHALEQUE, 2018). Hence, empowering women through entrepreneurship drives individual and economic growth, advocating for supportive policies to foster sustainable development (Ahmad & Ali, 2023). Unique challenges and contributions shape BP's approach to entrepreneurship. Women entrepreneurs often face barriers such as limited financial access, societal expectations, and family responsibilities, which constrain their performance rather than their inherent capabilities (Malik et al., 2021). Financial inclusion is crucial, as resource access directly correlates with business success (Chozarira et al., 2023; KHALEQUE, 2018). Other than that, entrepreneurial skills and innovation are vital, with studies showing that proactive and innovative women entrepreneurs achieve better outcomes (Loan et al., 2023). Gender dynamics also play a role, highlighting the need for targeted interventions to support women-owned businesses (Sarfaraz et al., 2014; Jamali, 2009). Human Resources transformation in women entrepreneurship involves rethinking HR functions to support women entrepreneurs. Therefore, aligning Human Resources practices with organizational goals, primarily through digital transformation, fosters inclusive environments and enhances women's entrepreneurial success (Adi Yadnya et al., 2023). Transformational leadership fosters employee satisfaction and encourages women to take leadership roles (Fayed & Fathy, 2022). Digital transformation also plays a crucial role, enabling women entrepreneurs to adapt to technology-driven markets through improved talent management and operational efficiency (Hazal & Mahmut, 2022; Gadzali et al., 2023). Furthermore, recognizing and supporting women's unique skills through Education and capacity building is essential for Human Resources transformation, empowering women entrepreneurs to drive innovation (Liu & Su, 2022; Dalimunthe et al., 2023). In entrepreneurship, Competitive Advantage for women entrepreneurs stems from unique capabilities and strategies, including entrepreneurial competencies like cognitive and analytical skills, which drive innovation and BP, especially in emerging economies (Mamun et al., 2018; Zainol & Al Mamun, 2018). Psychological traits such as self-confidence and motivation also play a crucial role in fostering resilience and adaptability (Khan et al., 2021; Siddiqui & Jan, 2017). Innovation capability, particularly in developing new products or improving processes, further strengthens their competitive edge (Octavia et al., 2021; Setyaningrum & Muafi, 2022). Additionally, through networks and collaborations, strategic management and social capital enhance women-led businesses' competitive positioning and access to essential resources (Jolović, 2019; Lee, 2015). Digitalization in women entrepreneurship refers to integrating digital technologies into business processes and empowering female entrepreneurs by overcoming traditional barriers. It is a gender equalizer, enabling women to access global markets and challenge socio-cultural norms (Gaweł & Mińska-Struzik, 2023; Salamzadeh et al., 2024). Digitalization also supports the internationalization and sustainability of women-led businesses, enabling them to expand their market reach and enhance business growth (Ratten & Braga, 2024; Morales, 2023). Additionally, digital skills development is crucial for competitiveness, and digital tools foster resilience, especially during crises like the COVID-19 pandemic (Alhothali & Al-Dajani, 2022; Santos et al., 2023). Furthermore, digital identities are becoming vital, influencing entrepreneurial activities such as crowdfunding (Wang et al., 2022).

The transformation of Human Resources is a crucial driver of Business Performance, particularly in the digital age. As organizations increasingly adopt digital technologies, the Human Resources role evolves from administrative functions to that of strategic partners, aligning HR strategies with organizational goals to enhance them. Employee engagement, innovation, and performance (Hazal & Mahmut, 2022). Furthermore, studies demonstrate that effective Human Resources planning and digital Human Resources tools, such as digital recruitment and training, improve operational efficiency, reduce resistance to change, and optimize resource allocation (Song et al., 2023; Zhang & Chen, 2024). Innovative Human Resources practices foster employee commitment, contributing to business success (Tian et al., 2023).

H₁: *Transformation of human resources affects business performance.*

Competitive Advantage significantly influences Business Performance by enabling firms to deliver superior customer value and maintain cost efficiency (Strandskov, 2006). Research emphasizes the importance of aligning business strategies with the market. EET demands to sustain Competitive Advantage and drive performance (Talaja et al., 2017). Dynamic capabilities, such as entrepreneurial marketing and innovation, further bolster Competitive advantage, allowing firms to adapt to evolving markets (Mandasari et al., 2023). Competitive Advantage also mediates corporate strategy and Business Performance, reinforcing the importance of strategic management practices in achieving superior outcomes (Samad, 2018).

H₂: *Competitive advantage affects business performance.*

Digitalization is pivotal in enhancing Business Performance by improving operational efficiency, fostering innovation, and enabling competitive advantage. Empirical evidence highlights that digital capabilities, such as supply chain integration and digital leadership, drive Business Performance by promoting operational efficiency and innovation (Han, 2023; Costa Melo et al., 2023). Moreover, digitalization strengthens customer experiences and enhances profitability, particularly in sectors like retail, where digital transformation directly impacts financial performance (XING & WU, 2023; Umar et al., 2023).

H₃: *Digitalization affects business performance.*

Digitalization mediates the relationship between Human Resources transformation and Business Performance by enhancing human resources' ability to drive organizational change. Thus, integrating digital technologies into Human Resource practices streamlines processes, increases employee engagement, and fosters a digital culture that aligns with organizational goals (Kasbuntoro, 2022; Sugiarto, 2023). Digital Human Resource tools, such as Artificial Intelligence and Machine Learning, further enhance productivity, innovation, and strategic Human Resource planning, improving Business Performance (Vedernikov et al., 2022).

H₄: *The transformation of human resources affects business performance, with digitalization serving as a mediator.*

Digitalization also mediates the relationship between Competitive Advantage and Business Performance by enhancing firms' ability to innovate and sustain their competitive edge. Digital transformation facilitates the development of new business models and improves operational capabilities, which is crucial for maintaining a Competitive Advantage in dynamic markets. (Broto Legowo & Sorongan, 2022). Additionally, research shows that digital capabilities enhance business resilience, making firms more adaptable to market changes and better positioned to achieve superior performance (Chandra & Ikasari, 2024).

H₅: *Competitive advantage affects business performance with digitalization as a mediator.*

H₆–H₁₀: *Competitive Advantage and Its Dimensions*

The Resource-Based View (RBV) emphasizes that organizations gain sustainable competitive advantage when they own resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Competitive advantage enables firms to deliver superior value through differentiation, pricing, and quality improvement (Strandskov, 2006; Talaja et al., 2017). Empirical studies indicate that competitive advantage influences multiple aspects, including pricing, product uniqueness, quality, and flexibility (Mandasari et al., 2023; Octavia et al., 2021). In women-led SMEs, strategic competencies such as competitive pricing and product differentiation are especially critical (Zainol & Al Mamun, 2018).

H₆: *Competitive Advantage positively affects Competitive Price.*

H₇: *Competitive Advantage positively affects Digitalization.*

H₈: *Competitive Advantage positively affects Flexibility.*

H₉: *Competitive Advantage positively affects Product Uniqueness.*

H₁₀: *Competitive Advantage positively affects the Quality of the Product.*

H₁₁: *Digitalization and Business Performance*

Digitalization serves as a key driver of operational efficiency and innovation. Research shows that digital adoption enhances firm performance by improving supply chain integration and customer satisfaction (Costa Melo et al., 2023; Han, 2023). Digital technologies significantly improve profitability and growth in the SME context, particularly in retail and service industries (XING & WU, 2023; Umar et al., 2023). For women entrepreneurs, digitalization acts as a gender equalizer, enabling broader market access and overcoming socio-cultural barriers (Gawel, 2024; Ratten & Ratten, 2011).

H₁₁: *Digitalization has a positive impact on Business Performance.*

H₁₂–H₁₆: *Human Resource Transformation and Organizational Outcomes*

Human resource transformation (HRT) is no longer limited to administrative functions but focuses on strategic development that enhances innovation and digitalization (Hazal & Mahmut, 2022). Electronic HRM practices strengthen engagement and efficiency (Berber et al., 2018), while strategic HR development fosters innovation and adaptability in women-led enterprises (Adi Yadnya et al., 2023; Liu & Su, 2022). Empowering women entrepreneurs through education and training is essential for enhancing innovation, skill development, and performance (Dalimunthe et al., 2023).

H₁₂: *Human Resource Transformation has a positive impact on Business Performance.*

H₁₃: *Human Resource Transformation has a positive impact on Digitalization.*

H₁₄: *Human Resource Transformation has a positive impact on Innovation.*

H₁₅: *Human Resource Transformation positively impacts the Quality of Human Resources.*

H₁₆: *Human Resource Transformation positively affects Self-Skills.*

3. Methodology

This study will employ a quantitative cross-sectional research design using a survey-based approach. A cross-sectional design enables data collection from a population at a single point in time, making it suitable for examining relationships between variables. Structural Equation Modeling (SEM), particularly Partial Least Squares (PLS), will analyze the relationships between the Transformation of Human Resources, digitalization, Competitive Advantage, and Business Performance, and test the mediation effect of digitalization. The choice of PLS-SEM is justified due to its robustness in handling complex relationships and its suitability for models with small to medium sample sizes and non-normal data distribution (Hair et al., 2017). This research's target population includes women entrepreneurs who manage Small and Medium-sized Enterprises (SMEs) in the fashion, culinary, and services sectors. The geographical focus will be on Medan City and Deli Serdang Regency, ensuring the representation of diverse business sectors and respondent characteristics. Consequently, a stratified random sampling technique will ensure a balanced representation of women entrepreneurs across different sectors. Based on Cohen's (1992) Recommendation for SEM sample sizes, the research will aim to collect responses from approximately 200 women entrepreneurs, which provides sufficient statistical power for hypothesis testing. The constructs in this study will be operationalized based on established scales from prior research. Each construct will be measured using Likert-scale items (1 = Strongly Disagree, 5 = Strongly Agree). We adapted our approach from Bass and Avolio (1994) and Sharma et al. (2022), focusing on leadership styles, employee training, and engagement. According to Amore and Failla (2020), we measure digital technology adoption in business processes, operations, and marketing. Drawing on the work of Barney (1991, n.d.) and Porter (1985), we examine factors such as innovation, customer satisfaction, and differentiation. We measured based on Venkatraman and Ramanujam (1986), emphasizing financial and non-financial performance indicators, such as sales growth, market share, and customer loyalty. Please note that data will be collected through a structured online and offline questionnaire. The questionnaire will be pre-tested with a small sample of women entrepreneurs to assess the reliability and validity of the measurement items. Here, feedback from the pilot test will guide any necessary revisions. The final questionnaire will be distributed through entrepreneurship networks, social media platforms, and direct outreach to Medan City and Deli Serdang Regency business associations. Consequently, snowball sampling may also enhance the sample size, particularly in hard-to-reach populations. The following steps will be carried out to analyze the data: A descriptive analysis will be conducted to understand the demographic characteristics of the respondents and the distribution of critical variables. The first stage of analysis involves evaluating the measurement model to assess the reliability and validity of the constructs. Reliability will be assessed using Cronbach's alpha and Composite Reliability (CR), with acceptable values greater than 0.70 (Hair et al., 2019). Convergent Validity will be evaluated through Average Variance Extracted (AVE), with values above 0.50 indicating sufficient convergent validity (Fornell, 1981). The structural model will be tested to examine the hypothesized relationships between the constructs. The mediating role of digitalization will be assessed by examining the direct effect of the Transformation of Human Resources on Competitive Advantage and Business Performance, and the indirect impact through digitalization. Subsequently, bootstrapping will be employed to estimate the significance of path coefficients, and a 120-resample technique will generate p-values and confidence intervals (Chin, 1998). Each hypothesis will be tested using PLS-SEM, and mediation analysis will be conducted to examine whether digitalization mediates the effect of Human Resources transformation on Business performance.

4. Result

The following data presents the characteristics of the respondents' businesses, based on their length of entrepreneurship, the type of business they run, and the company's legal status. The data provided important insights related to business experience and the level of formality applied in these women entrepreneurs' businesses.

Table 1
Characteristics of Respondents

Characteristic		Frequency	Percentage
Long Entrepreneurial	<5 Years	62	51.6
	5-10 Years	45	40
	>10 Years	13	10.8
Type of Business	Culinary (Food and Beverages)	77	64.1
	Handcraft	6	5
	Grocery/Shop	6	5
	Fashion (Clothing)	9	7.5
	Plants or Farm Animals	4	3.3
	Others (cosmetics, workshops, selling vegetables, sewing, etc.)	18	15
Legalization/Business License	Halal Certificate	30	25
	NIB/OSS/IPRT	45	37.5
	SIUP/SITU/SKU	37	30.8
	HKI	8	6.6
	None	51	42.5

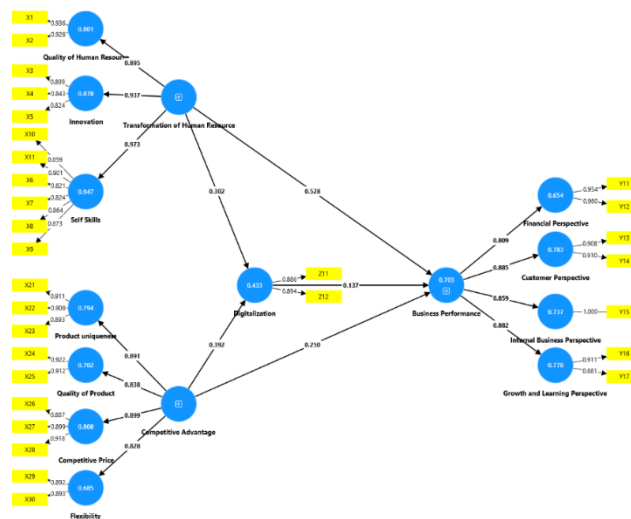


Fig. 1. Measurement model

All constructs showed convergent solid validity, with AVE values exceeding the threshold of 0.5 and Composite Reliability (CR) above 0.7. Consequently, discriminant validity was confirmed using the Fornell-Larcker criterion, where the square root of AVE for each construct was more significant than its correlations with other constructs.

Table 2
Convergent Validity and Discriminant Validity

Construct	CR	AVE	√AVE
Business Performance	0.925	0.639	0.799
Competitive Advantage	0.942	0.618	0.786
Human Resource Transformation	0.959	0.681	0.825
Digitalization	0.884	0.792	0.890

The structural model shows that the explained variance in the dependent variables is quite substantial. Competitive Advantage and human resource transformation explain 70.3% of business performance variation ($R^2 = 0.703$). Other dependent variables, such as competitive price and customer perspective, are well described by their predictors.

Table 3
Structural Model and R² Values

Dependent Variable	R ²	Explanation
Business Performance	0.703	Competitive Advantage and Human Resource Transformation explain 70.3% of the variance in Business Performance.
Customer Perspective	0.783	Business Performance explains 78.3% of the variance in Customer Perspective.
Financial Perspective	0.654	Business Performance explains 65.4% of the variance in Financial Perspective.
Growth and Learning Perspective	0.740	Business Performance explains 74.0% of the Growth and Learning Perspective variance.
Internal Business Perspective	0.718	Business Performance explains 71.8% of the variance in the Internal Business Perspective.
Competitive Price	0.808	Competitive Advantage explains 80.8% of the variance in Competitive Price
Flexibility	0.685	Competitive Advantage explains 68.5% of the variance in Flexibility.
Digitalization	0.433	Competitive Advantage and Human Resource Transformation explain 43.3% of the variance in Digitalization.

The hypothesis testing results confirm the significance of relationships between the key constructs. Most proposed hypotheses are supported, with P-values below 0.05, indicating statistically significant relationships. A detailed summary of the hypothesis testing results is provided below:

Table 4
Hypothesis Testing

Hypothesis	Path Coefficient (O)	T-Statistic	P-value	Result
H ₁ : Business Performance positively affects Customer Perspective.	0.885	37.624	0.000	Supported
H ₂ : Business Performance positively affects Financial Perspective.	0.809	18.291	0.000	Supported
H ₃ : Business Performance positively affects Growth and Learning Perspective.	0.882	36.485	0.000	Supported
H ₄ : Business Performance Positively Affects Internal Business Perspective.	0.859	30.101	0.000	Supported
H ₅ : Competitive Advantage Positively Affects Business Performance.	0.250	2.423	0.015	Supported
H ₆ : Competitive Advantage positively affects Competitive Price.	0.899	32.530	0.000	Supported
H ₇ : Competitive Advantage positively affects Digitalization.	0.392	3.114	0.002	Supported
H ₈ : Competitive Advantage positively affects Flexibility.	0.828	15.011	0.000	Supported
H ₉ : Competitive Advantage positively affects Product Uniqueness.	0.891	30.088	0.000	Supported
H ₁₀ : Competitive Advantage positively affects the Quality of the Product.	0.838	20.294	0.000	Supported
H ₁₁ : Digitalization has a positive impact on business performance.	0.137	1.607	0.094	Not Supported
H ₁₂ : Human Resource Transformation has a positive impact on Business Performance.	0.528	4.856	0.000	Supported
H ₁₃ : Human Resource Transformation has a positive impact on digitalization.	0.302	2.250	0.025	Supported
H ₁₄ : Human Resource Transformation has a positive impact on Innovation.	0.937	56.860	0.000	Supported
H ₁₅ : Human Resource Transformation positively impacts the Quality of Human Resources.	0.895	29.552	0.000	Supported
H ₁₆ : Human Resource Transformation Positively Affects Self-Skills.	0.973	102.068	0.000	Supported

The results uphold most of the proposed hypotheses, confirming significant relationships among key constructs, including the Influence of Competitive Advantage and human resource transformation on Business Performance. The second-order constructs, such as Business Performance, Competitive Advantage, and Human Resource Transformation, are clearly explained by their respective first-order constructs. The relationships between the first-order and second-order constructs are statistically significant, as outlined below:

Table 5
Hypothesis Testing Second Order

Second-Order Construct	First-Order Constructs	Path Coefficient (O)	T-Statistic	P-Value
Business Performance	Customer Perspective	0.885	37.624	0.000
	Financial Perspective	0.809	18.291	0.000
	Growth and Learning Perspective	0.882	36.485	0.000
	Internal Business Perspective	0.859	30.101	0.000
Competitive Advantage	Competitive Price	0.899	32.530	0.000
	Flexibility	0.828	15.011	0.000
Human Resource Transformation	Digitalization	0.302	2.250	0.025
	Innovation	0.937	56.860	0.000

These findings suggest that their corresponding first-order dimensions effectively represent the second-order constructs.

The indirect effects analysis examined the mediating role of digitalization in the relationship between human resource transformation and Business Performance. The results show that digitalization does not significantly mediate this relationship:

Table 6
Specific Indirect Effects

Indirect Path	Path Coefficient (O)	T-Statistic	P-Value
Human Resource Transformation → Digitalization → Business Performance	0.041	1.359	0.174

The lack of a significant mediating effect suggests that digitalization does not mediate between human resource transformation and Business Performance.

5. Discussion

The findings of this study align with the Resource-Based View (RBV) (*Barney1991*, n.d.) and the Dynamic Capabilities Theory (Teece, 2007), both of which emphasize the strategic role of organizational resources and capabilities in achieving sustainable performance.

First, the results confirm that Competitive Advantage (CA) is a key determinant of Business Performance (BP). Firms that strategically manage resources such as competitive pricing, flexibility, product uniqueness, and product quality achieve superior outcomes. This finding reinforces the RBV perspective, which posits that organizations with valuable, rare,

inimitable, and non-substitutable resources are better positioned to sustain long-term competitiveness. Consistent with prior research (Mandasari et al., 2023; Zainol & Al Mamun, 2018). The ability of women-led SMEs to leverage differentiation and pricing strategies plays a crucial role in maintaining market relevance.

Second, Human Resource Transformation (HRT) demonstrated a significant impact on BP, confirming the relevance of the Dynamic Capabilities Theory. The results show that innovation, HR quality, and self-skills—key dimensions of HRT—contribute directly to firm performance. By building adaptive and innovative human capital, SMEs can reconfigure their competencies in response to dynamic market conditions. This aligns with prior findings highlighting the importance of transformational HR practices, digital HRM, and leadership in enhancing organizational outcomes (Berber et al., 2018) (Hazal & Mahmut, 2022). For women-led SMEs, strategic HR development is vital in overcoming gendered constraints and fostering long-term growth.

Third, contrary to expectations, digitalization did not significantly affect BP (H11). This suggests that while digital tools are important, they function more as supportive enablers than direct performance drivers. The result is consistent with (Gawel, 2024), who argue that digitalization helps overcome structural barriers. However, its performance impact depends on integration with broader strategic and human resource initiatives. In women-led SMEs, digitalization may influence intermediate outcomes—such as operational efficiency, customer experience, or innovation—rather than directly boosting financial or non-financial performance (Costa Melo et al., 2023; Umar et al., 2023).

Finally, the mediating role of digitalization between HRT and BP was not supported. This divergence from studies such as Vedernikov et al. (2022) and Broto Legowo and Sorongan (2022). This may reflect the relatively early stage of digital adoption in the sampled SMEs. Many enterprises surveyed operate in traditional sectors (e.g., culinary and handicrafts), where digital tools are often used for administrative and marketing support rather than as core strategic drivers. Thus, while digitalization enhances efficiency, it does not yet mediate the transformation of HR into measurable performance gains. This study extends RBV and Dynamic Capabilities Theory by showing that CA and HRT remain the strongest predictors of BP, while digitalization plays a complementary rather than central role. The results suggest that digital tools must be embedded in broader organizational strategies and HR practices to produce sustainable performance outcomes. The findings highlight the need to prioritize HR transformation (skill development, innovation, leadership) and competitive strategies (pricing, quality, differentiation) for women entrepreneurs. Policymakers and SME support institutions should design capacity-building programs that integrate digital skills with HR development, ensuring that digitalization enhances—not replaces—the fundamental drivers of business performance.

6. Conclusion

This study underscores the pivotal roles of Competitive Advantage (CA) and Human Resource Transformation (HRT) in enhancing the Business Performance (BP) of women-led SMEs. Firms that adopt competitive strategies—centered on pricing efficiency, operational flexibility, product innovation, and quality enhancement—are more likely to achieve sustainable growth and long-term success. At the same time, investment in human capital through innovation, digital skills development, and continuous self-improvement directly strengthens organizational performance, confirming the centrality of HRT in dynamic market contexts. The finding that digitalization did not significantly mediate the relationship between HRT and BP suggests that while digital tools and processes remain critical for modern business operations, their direct influence on performance is less pronounced. Instead, digitalization appears to be a supportive enabler, whose effects may depend on complementary capabilities and organizational maturity. This highlights the importance of embedding digitalization within broader strategic and HR frameworks rather than treating it as an isolated performance driver. From a theoretical perspective, the results reinforce the Resource-Based View (RBV) and Dynamic Capabilities Theory, demonstrating that strategic resources and adaptive capabilities remain decisive factors for SMEs in achieving superior outcomes. From a managerial standpoint, the study suggests that women entrepreneurs should prioritize innovation and workforce skill development while leveraging competitive pricing and product differentiation to sustain competitiveness. Future research should explore alternative mediators—such as innovation capability, customer orientation, or social capital—to better capture the mechanisms linking HRT to BP. Moreover, examining these dynamics in digitally mature organizations or across different industries and regions would provide a richer understanding of the contextual factors shaping SME performance. Ultimately, women-led SMEs can strengthen their adaptability and resilience in an evolving business environment by aligning their strategies with RBV principles and Dynamic Capabilities Theory, thereby ensuring survival and long-term competitive advantage.

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