

# RESILIENT LEADERSHIP, FRUGAL INNOVATION, AND WOMEN ENTREPRENEURSHIP ON MSME PERFORMANCE THROUGH SMART BUSINESS ADAPTABILITY AS A MEDIATING VARIABLE

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## ABSTRACT

**Background:** Women-led MSMEs in Jakarta continue to face structural and operational barriers, including limited access to financing, inconsistent market demand, and intensified post-pandemic competition. These challenges are evident in sectors such as culinary and fashion, where consumer preferences shift quickly, and market saturation forces entrepreneurs to operate with tighter resources. As a result, many women-led MSMEs struggle to maintain growth, pursue innovation, and build resilience in an increasingly dynamic environment.

**Purpose:** This study aims to analyze the influence of resilient leadership, frugal innovation, and women entrepreneurship on the performance of women-led MSMEs in Jakarta. It also examines whether smart business adaptability serves as a mediating variable, strengthening the connection between these organizational and entrepreneurial capabilities and overall business performance.

**Design/methodology/approach:** A quantitative research design was employed using SEM-PLS. This analytical technique is suitable for assessing complex causal relationships and is appropriate for studies with small-to-moderate sample sizes. Data were collected from 100 women entrepreneurs operating across various MSME sectors in Jakarta.

**Findings/Results:** The results show that frugal innovation and women entrepreneurship significantly and positively affect MSME performance, demonstrating the importance of resource-efficient innovation and strong entrepreneurial capacity. However, resilient leadership does not exhibit a significant direct impact. Additionally, the mediating effect of smart business adaptability is non-significant, indicating that current adaptive practices among women-led MSMEs have not yet fully developed to convert leadership and innovation elements into stronger performance outcomes.

**Conclusion:** Enhancing MSME performance in volatile environments requires strengthening adaptive capabilities alongside promoting efficient innovation and leadership resilience.

**Originality/value (State of the art):** This study introduces an integrated framework linking resilient leadership, frugal innovation, and gender-based entrepreneurship, an approach still limited in existing MSME research, offering fresh insight into performance mechanisms among women-led businesses.

**Keywords:** resilient leadership, frugal innovation, women entrepreneurship, smart business adaptability

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## INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in promoting inclusive economic growth, employment creation, and community empowerment, especially in times of global uncertainty. In the face of rapid technological disruption, climate-related challenges, and post-pandemic recovery, MSMEs must strengthen their resilience and adaptability to remain competitive. This necessity becomes even more pronounced for women entrepreneurs, who often face multifaceted barriers such as limited access to financing, the burden of dual domestic and business responsibilities, and persistent gender bias within business ecosystems. Global evidence highlights that resilient leadership and frugal innovation are among the most effective strategies for navigating crises and resource scarcity. For instance, MSMEs in India and Kenya have creatively leveraged limited resources to produce affordable yet relevant products for local consumers (Natasha, 2025). Similarly, research in Latin America shows that women-led MSMEs practicing resilience-based leadership and eco-awareness successfully withstand economic shocks. At the same time, systematic literature reviews confirm that resilience is a decisive factor enabling women entrepreneurs in emerging markets to sustain their ventures even during crises (Acevedo-Duque et al. 2021).

In Indonesia, MSMEs contribute more than 61% to the national GDP and employ over 97% of the workforce, underscoring their central role in the economy. However, these impressive figures also highlight how deeply the economy depends on the resilience of MSMEs, particularly those that are women-led. Despite their significant contributions, women-led MSMEs remain highly vulnerable to economic fluctuations, digital disruption, and policy shifts. Their limited adaptability to technological transformation and market volatility continues to constrain innovation and leadership effectiveness (Cahayati et al. 2024). In Jakarta, the country's commercial and innovation hub, these challenges are even more pronounced. Women-led MSMEs in sectors such as culinary, fashion, and services often face stagnation driven by inadequate digital adoption, declining consumer engagement, and intensifying post-pandemic competition. Limited understanding and application of smart business adaptability, defined as rapid, data-driven responsiveness, further weakens their competitiveness.

For example, despite empowerment programs such as Jakpreneur, digital adoption remains low, with only 11.29% of mentored MSMEs utilizing QRIS payments as of late 2024 (Nurhaliza, 2024). These conditions emphasize the urgency of developing an integrated capacity model that enhances resilient leadership, frugal innovation, and women's entrepreneurial capabilities to strengthen sustainable MSME performance.

The challenges faced by MSMEs can be effectively understood through the Resource-Based View (RBV) proposed by Barney (1991), which argues that sustainable competitive advantage depends on the strategic development of valuable, rare, inimitable, and non-substitutable (VRIN) resources. Within this framework, resilient leadership can be viewed as an intangible human and psychological resource that enables firms to recover from adversity and maintain productivity (Everly Jr et al. 2020). Likewise, frugal innovation reflects a strategic capability that allows firms to optimize limited resources for maximum customer value, consistent with Frugal Innovation Theory, which emphasizes innovation under constraints and the ability to "do more with less" (Radjou et al. 2012; Bound & Thornton, 2012). Integrating these perspectives highlights how leadership resilience and resource-efficient innovation function as complementary internal capabilities that strengthen MSME competitiveness in turbulent environments.

However, a significant gap remains in the literature. Studies such as Zhang et al. (2024) confirm the positive influence of resilient leadership on organizational recovery and motivation but fail to examine its transformation into dynamic business adaptability within MSMEs. Similarly, Achmad & Wiratmadja (2024) found that frugal innovation enhances operational efficiency by maximizing resource utilization, yet they overlook how leadership behaviors and women's entrepreneurial characteristics enable this innovation. Setyaningrum et al. (2023) found that women entrepreneurs in Indonesian MSMEs demonstrate high levels of resilience, multitasking, and risk-taking. However, their findings remain descriptive and disconnected from innovation or adaptive strategy models. Furthermore, Rupeika-Apoga et al. (2022) proposed the concept of smart business adaptability to explain MSME transformation under digital disruption, but the model lacks integration with leadership and gendered entrepreneurship perspectives. Garrido-Moreno et al. (2024) also emphasized innovation-

leadership synergy as a key driver of organizational responsiveness. However, their research focuses on large firms and thus overlooks the unique contextual constraints faced by MSMEs.

This study's novelty lies in integrating Resilient Leadership Theory, Frugal Innovation Theory, and Resource-Based View into a single conceptual framework that examines how resilient leadership, frugal innovation, and women entrepreneurship interact through smart business adaptability to enhance MSME performance. This integration addresses the theoretical gap by linking behavioral resilience, resource-based creativity, and adaptive business capability into a unified model relevant to women-led MSMEs operating in resource-constrained environments such as Jakarta.

The study employs a conceptual and empirical approach grounded in the Resource-Based View (RBV) as the overarching theoretical lens, supported by Resilient Leadership and Frugal Innovation theories. Within this approach, resilient leadership is positioned as a critical human capital resource that drives confidence, adaptability, and crisis management. Frugal innovation serves as a strategic capability, enabling MSMEs to reconfigure limited resources to achieve efficiency and affordability. At the same time, women entrepreneurship serves as a contextual catalyst, reinforcing emotional intelligence, empathy, and multitasking skills. The mediating construct, smart business adaptability, represents a dynamic capability that translates leadership resilience and resource-efficient innovation into tangible organizational outcomes such as operational agility, digital responsiveness, and financial growth. Methodologically, this research integrates theoretical model development with empirical analysis using structural equation modeling to validate direct and indirect effects between variables. By focusing on Jakarta's women-led MSMEs, this study contributes both contextually and theoretically to understanding how micro-level leadership and innovation behaviors foster macro-level adaptability and business sustainability.

Therefore, the purpose of this study is to analyze the influence of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance through the mediating role of smart business adaptability, within the theoretical framework of the Resource-Based View (RBV), Resilient Leadership Theory, and Frugal Innovation Theory. This research

aims to make theoretical contributions by deepening the understanding of how intangible resources, such as leadership resilience and frugal creativity, can be systematically integrated to build adaptive and competitive MSME models led by women entrepreneurs. Practically, the study seeks to guide policymakers, incubator institutions, and business associations in formulating strategic empowerment programs that enhance digital adaptability, innovation efficiency, and resilience-driven competitiveness, ultimately strengthening the sustainability of MSMEs in Jakarta's dynamic business ecosystem.

## METHODS

This study employs a quantitative, explanatory, causal-comparative design to examine the direct and indirect relationships among resilient leadership, frugal innovation, women entrepreneurship, and smart business adaptability in women-led MSMEs in DKI Jakarta. The quantitative approach was chosen to enable objective and systematic testing of causal relationships derived from theoretical foundations such as the Resource-Based View (RBV) (Barney, 1991), Resilient Leadership Theory (Everly Jr et al. 2020), and Frugal Innovation Theory (Radjou et al. 2012; Bound & Thornton, 2012). These theories collectively explain how intangible internal resources such as leadership resilience, creative adaptability, and resource efficiency contribute to sustainable organizational competitiveness. The data used in this study are drawn from both primary and secondary sources. Primary data were collected directly from women entrepreneurs through structured questionnaires to capture their perceptions, behavioral patterns, and leadership experiences in managing MSMEs. Secondary data were obtained from institutional and governmental publications, including reports from the Jakarta Cooperative and SME Agency, as well as prior empirical research relevant to MSME development, digital adaptation, and women's entrepreneurship. The combination of both data types strengthens contextual depth and enhances analytical validity.

Data were collected using a structured online questionnaire developed based on established theoretical constructs and validated measurement indicators from previous studies. Before full distribution, the instrument underwent a brief pre-test with a small group of women entrepreneurs to

ensure clarity, content validity, and item reliability. The final questionnaire used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) and comprised four key variable clusters: resilient leadership (adaptability, empathy, and visionary crisis response), frugal innovation (resource optimization, affordability, and efficiency), women entrepreneurship (creativity, multitasking, and decision-making autonomy), and smart business adaptability (digital agility, data-driven responsiveness, and strategic flexibility). The online survey was distributed via Google Forms between April and June 2025 to maximize accessibility and participation among women-led MSMEs across various districts in Jakarta. Purposive sampling was applied with the following inclusion criteria: (1) operating for at least two years; (2) directly managed by a woman entrepreneur; (3) employing a minimum of three workers; and (4) using digital tools for marketing, finance, or customer interaction. A total of 100 responses were obtained, meeting the minimum sample size recommended for Partial Least Squares Structural Equation Modeling (SEM-PLS) according to Hair et al. (2011). This approach ensured adequate representation of digitally active women entrepreneurs in innovation-intensive sectors such as culinary, fashion, and handicrafts.

Data analysis was performed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) in SmartPLS. SEM-PLS was selected because it accommodates complex models with multiple latent variables and is well-suited for data that are non-normally distributed or derived from minor to moderate sample sizes. Before conducting the primary analysis, data screening was performed to assess missing values, normality, and outliers, ensuring data quality. The analytical process began with descriptive statistical analysis to provide an overview of respondents' profiles and variable tendencies. Subsequently, the outer model was evaluated to test indicator reliability and convergent validity through outer loadings, composite reliability, and Average Variance Extracted (AVE). Discriminant validity was examined using the Fornell-Larcker criterion to confirm that each construct measured distinct theoretical concepts. The inner model was then analyzed to evaluate structural relationships among variables by assessing path coefficients, t-statistics (threshold > 1.96), and p-values (< 0.05) for hypothesis testing. Furthermore, the mediating role of smart business adaptability was tested using the bootstrapping method, which enables

robust estimation of indirect effects. The model's explanatory and predictive capabilities were assessed using  $R^2$  and  $Q^2$ . This analytical approach allows for a comprehensive evaluation of how resilient leadership and frugal innovation—as resource-based strategic capabilities—enhance smart business adaptability and overall performance of women-led MSMEs in DKI Jakarta, thereby reinforcing theoretical linkages between leadership behavior, innovation efficiency, and adaptive business sustainability.

This research is grounded in the core theory of the RBV developed by Barney (1991), which posits that an organization's competitive advantage does not rely solely on external market conditions but primarily on its internal capabilities to manage and develop valuable, rare, inimitable, and non-substitutable resources. In the context of MSMEs, resources such as resilient leadership, frugal innovation approaches, and the unique characteristics of women's entrepreneurship represent intangible assets that, if adaptively managed through intelligent business capabilities, can drive sustainable competitive advantage. RBV provides the primary foundation for explaining how the combination of these elements contributes to MSME performance through strategic internal utilization.

First, the Resilient Leadership theory explains a leader's ability to maintain emotional and operational stability under pressure, challenges, and uncertainty (Everly Jr et al. 2020). This theory emphasizes that resilient leaders are not only able to endure difficulties but also to steer their teams toward recovery and growth after a crisis. In MSME contexts, where business owners often act as sole leaders, their resilience in making strategic decisions, maintaining team morale, and constructively managing uncertainty becomes a critical determinant of business continuity and growth. Second, Frugal Innovation theory provides the basis for understanding how high-value yet straightforward innovations can emerge from limited resources (Bound & Thornton, 2012). This theory highlights entrepreneurs' ability, particularly in developing countries, to create cost-efficient business solutions that remain highly relevant to market needs. In the realm of MSMEs, frugal innovation involves leveraging local materials, creatively adapting technologies, and optimizing production processes to deliver functional, affordable, and impactful products or services. This theory offers a crucial perspective that resource constraints are not a barrier to innovation but rather a trigger for efficiency and creativity.

The theory of Resilient Leadership highlights a leader's ability to adapt, endure, and guide effectively under pressure, which is crucial for maintaining business stability and enhancing productivity in MSMEs (Ledesma, 2014). From the RBV perspective, resilient leadership is an internal capability that is difficult to imitate and can serve as a competitive advantage. Evidence from MSMEs shows that leaders with high resilience improve operational efficiency, motivate teams, and support business continuity, while fostering innovation and customer loyalty in volatile markets (Koporcic et al. 2025). Frugal Innovation complements this by enabling MSMEs to develop resource-efficient solutions, thereby improving cost efficiency, market adaptation, and competitiveness through the creative use of inexpensive yet high-quality materials (Farooq, 2017). This approach has been efficient for food, textile, and craft-based MSMEs, where locally relevant, simple products gain consumer acceptance and support profit growth. Women Entrepreneurship emphasizes the role of women as central actors in MSME development, leveraging multitasking, customer empathy, and relationship management as strategic resources (Arista & Fitriyah, 2024). Women-led MSMEs demonstrate enhanced operational efficiency, rapid innovation, and adaptive capacity to social and economic pressures, contributing to business stability and effective distribution networks (Hendrayati et al. 2025). Meanwhile, Smart Business Adaptability, defined as the ability to respond quickly and data-driven to market dynamics, is increasingly essential in complex business ecosystems (Indriastuti & Kartika, 2022). MSMEs that adopt adaptive strategies improve decision-making, operational flexibility, innovation, and risk management, supporting sustainable performance (Octasyilva et al. 2022).

Hypothesis 1: Resilient leadership has a significant effect on MSME performance.

Hypothesis 2: Frugal innovation has a significant effect on MSME performance.

Hypothesis 3: Women entrepreneurship has a significant effect on MSME performance.

Hypothesis 4: Smart business adaptability has a significant effect on MSME performance.

Based on the RBV and resilient leadership theory, resilient leadership enables the formation of adaptive systems within organizations, enabling leaders to initiate intelligent strategic responses to environmental pressures and ultimately enhancing business performance (Bonini et al. 2024). However, the

effectiveness of resilient leadership depends heavily on the organization's ability to adapt quickly and flexibly to changing conditions. Similarly, according to the RBV, frugal innovation can enhance performance only if it is integrated into the organization's adaptive systems. Previous studies have shown that resource-constrained innovations positively affect performance when MSMEs adjust their operational and business processes flexibly to respond to dynamic market demands and customer needs (Cuevas-Vargas et al. 2022). Moreover, unique human resources, such as women entrepreneurs, can maximize their impact on MSME performance when supported by responsive and adaptive systems. Female leaders have strong potential to develop business models and intuition-based innovations, but their effectiveness depends on the organization's ability to adjust production, distribution, and business networks rapidly (Laily et al. 2022).

Hypothesis 5: Smart business adaptability mediates the effect of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance.

In line with the above hypotheses, the research model shows that resilient leadership, frugal innovation, and women's entrepreneurship are independent variables influencing MSME performance, with smart business adaptability as a mediating variable. Resilient leadership, frugal innovation, and women entrepreneurship are expected to improve performance directly. At the same time, smart business adaptability enhances these effects by enabling rapid, flexible, and data-driven responses to market changes. The model provides a clear framework for testing the five proposed hypotheses (see Figure 1).

## RESULTS

### Respondent Characteristics

The demographic profile of 100 women-led MSME entrepreneurs in Jakarta shows that the majority are aged 31–40 years (42%), reflecting a productive age group with mature business experience (Table 1). Most respondents hold a high school education or equivalent (34%), indicating that MSME actors generally have a secondary educational background. In terms of experience, 41% have operated their businesses for 4–6 years, suggesting adequate operational knowledge to support business resilience. The majority manage

3–5 employees (55%), consistent with the structure of small-scale enterprises. The culinary sector dominates with 47%, highlighting the prominence of food and beverage ventures as a core area of women’s economic activity. Regarding digital practices, Instagram is the most widely used marketing platform (76%), showing a strong preference for visual and interactive promotion channels.

### Outer Model

The outer model evaluation assesses the validity and reliability of the constructs in the measurement model before testing the relationships among variables in the structural model. In the SEM-PLS approach, three key aspects are evaluated in the outer model: convergent validity, discriminant validity, and construct reliability.

### Convergent Validity

Convergent validity was assessed through outer loadings, Average Variance Extracted (AVE), and internal consistency of indicators within each construct. The results show that all indicators for Resilient Leadership, Frugal Innovation, Women Entrepreneurship, Smart Business Adaptability, and MSME Performance exceeded the recommended loading threshold of 0.70, indicating that each item effectively measured its intended construct. Notably, several indicators, such as decision autonomy within Women Entrepreneurship and digital use within Smart Business Adaptability, loaded particularly high, suggesting that these dimensions are firmly embedded in the practices of women-led MSMEs in Jakarta. No indicators fell close to the minimum threshold,

meaning that none required removal or revision during analysis. Furthermore, all constructs had AVEs above 0.50, indicating that more than half of the variance in each item was explained by its latent variable. This strong convergence suggests that respondents exhibited consistent patterns in leadership behavior, innovation practices, and adaptability, which may reflect the growing digital engagement and decision-making autonomy among women entrepreneurs in Jakarta’s MSME ecosystem.

### Discriminant Validity

To ensure that each construct was conceptually distinct, discriminant validity was evaluated using the Fornell–Larcker criterion (Table 3) and cross-loading analysis (Table 2). The Fornell–Larcker results show that the square root of each construct’s AVE exceeded its correlations with all other constructs, confirming adequate discriminant validity. Although some conceptual overlap could be expected, particularly among Women Entrepreneurship, Resilient Leadership, and Smart Business Adaptability due to their shared emphasis on decision-making and adaptability, the correlation values remained sufficiently below each construct’s AVE square root. Cross-loading results further strengthen this conclusion: every indicator loaded highest on its intended construct, with no items approaching problematic thresholds or loading similarly across multiple constructs. It suggests that respondents clearly differentiated between leadership behavior, entrepreneurial autonomy, and adaptive business practices, reflecting distinct patterns in how women-led MSMEs in Jakarta perceive and enact these capabilities.

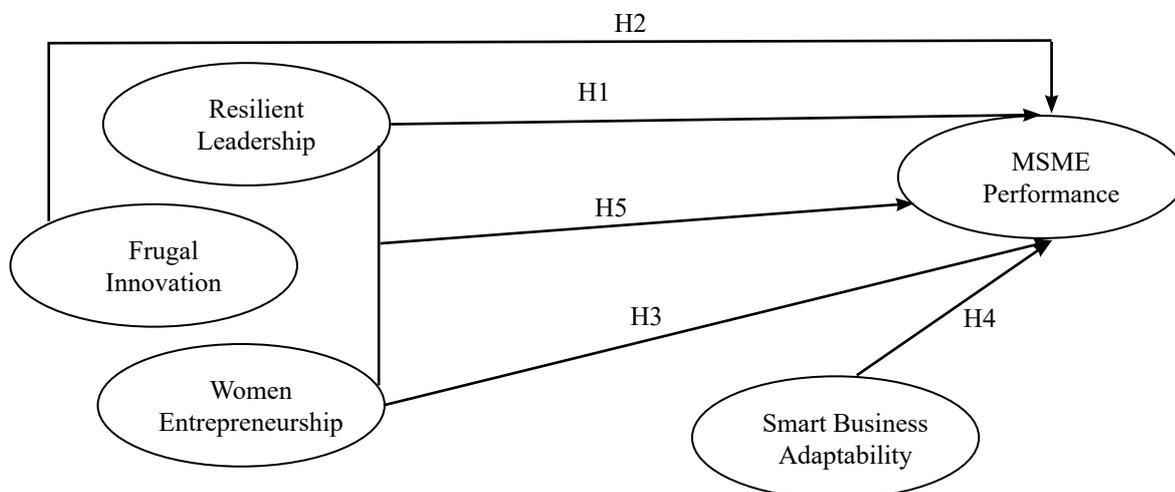


Figure 1. Framework of thought of the relationships among resilient leadership, frugal innovation, women entrepreneurship, and smart business adaptability

Table 1. Respondents' demographic of constructs: resilient leadership, frugal innovation, women entrepreneurship, smart business adaptability, and MSME

Category	Sub-Category	Frequency (n = 100)	Percentage (%)
Age	21–30 years	25	25%
	31–40 years	42	42%
	41–50 years	23	23%
	> 50 years	10	10%
Last Education Level	Senior High School or Equivalent	34	34%
	Diploma	27	27%
	Bachelor's Degree (S1)	33	33%
	Master's Degree (S2)	6	6%
Business Experience	2–3 years	36	36%
	4–6 years	41	41%
	> 6 years	23	23%
Number of Employees	3–5 persons	55	55%
	6–10 persons	29	29%
	> 10 persons	16	16%
Business Sector	Culinary	47	47%
	Fashion	31	31%
	Handicraft	22	22%
Digital Marketing Platforms Used	Instagram	76	76%
	WhatsApp Business	63	63%
	TikTok	41	41%
	Facebook	33	33%
	Marketplace (Shopee/Tokopedia, etc.)	52	52%

### Reliability Test

Construct reliability was assessed using Composite Reliability (CR) and Cronbach's Alpha (Table 2). All constructs demonstrated CR values above 0.70 and Alpha values exceeding 0.60, indicating strong internal consistency. While these values confirm that the indicators reliably measure their respective constructs, the relatively high CR and Alpha scores for certain variables, particularly Women Entrepreneurship and Smart Business Adaptability, also suggest perceptual overlap among indicators. This pattern is not unexpected in the context of small women-led MSMEs, where respondents may view elements such as decision autonomy, time management, and adaptability as intertwined aspects of daily business practice rather than as distinct subdimensions. Nonetheless, the reliability values remained within acceptable limits and did not indicate problematic redundancy, supporting the conclusion that the measurement items were coherent without being excessively repetitive. Overall, the constructs demonstrate sufficient reliability for subsequent structural analysis.

### Inner Model

The structural model evaluation assessed the predictive strength and causal relationships among latent constructs. This assessment involved analyzing  $R^2$  and  $Q^2$  and testing the significance of the path coefficients using a bootstrapping procedure. In this study, the main dependent variable is MSME Performance, which is directly influenced by Resilient Leadership, Frugal Innovation, and Women Entrepreneurship, and indirectly influenced through the mediating variable Smart Business Adaptability.

### R-Square and Q<sup>2</sup> Predictive Relevance

The model shows that Frugal Innovation and Women Entrepreneurship have a direct positive effect on MSME performance, whereas Resilient Leadership does not exhibit a significant direct influence. Smart Business Adaptability also fails to mediate any of the independent variables significantly. The  $R^2$  value for Smart Business Adaptability is 0.487, indicating that Resilient Leadership, Frugal Innovation, and Women Entrepreneurship collectively explain 48.7% of its

variance. Meanwhile, the  $R^2$  for MSME Performance is 0.534, suggesting that the combined predictors account for 53.4% of its variance. In the context of behavioral and capability-based MSME research,  $R^2$  values between 0.40 and 0.60 are generally considered moderate and typical, as MSME performance is often shaped by diverse structural, market, and environmental factors beyond internal capabilities. Prior studies on SME innovation and leadership models, such as Adomako et al. (2022) and Cuevas-Vargas et al. (2022), report similar explanatory power, with  $R^2$  values commonly ranging from 0.45 to 0.58. Thus, the  $R^2$

of 0.53 in this study aligns with the broader literature and can be considered reasonably strong for models involving human behavior, resource constraints, and dynamic decision-making in small enterprises. However, the non-significant mediating effect of Smart Business Adaptability suggests that adaptability alone is insufficient to translate leadership, innovation, or entrepreneurial traits into stronger performance outcomes among women-led MSMEs in Jakarta. It reinforces the need for more direct managerial or capability-building interventions to bridge the gap between potential and performance (see Table 4).

Table 2. Validity and reliability summary of constructs: resilient leadership, frugal innovation, women entrepreneurship, smart business adaptability, and MSME

Constructs	Indicators	Outer Loading	AVE	CR	Cronbach's Alpha
Resilient Leadership (RL)	Stress Management	0.801	0.654	0.879	0.812
	Solution Focus	0.842			
	Decision Resolve	0.834			
Frugal Innovation (FI)	Cost Efficiency	0.787	0.623	0.864	0.795
	Market Innovation	0.828			
	Functional Simplicity	0.803			
Women Entrepreneurship (WE)	Decision Autonomy	0.814	0.668	0.886	0.828
	Time Management	0.859			
	Social Resilience	0.822			
Smart Business Adaptability (SBA)	Strategic Agility	0.825	0.642	0.872	0.803
	Digital Use	0.839			
	Market Response	0.801			
MSME Performance (MP)	Revenue Growth	0.862	0.695	0.892	0.836
	Customer Growth	0.874			
	Product Innovation	0.812			

Table 3. Fornell–Larcker criterion of constructs: resilient leadership, frugal innovation, women entrepreneurship, smart business adaptability, and MSME

Constructs	RL	FI	WE	SBA	MP
Resilient Leadership (RL)	0.809				
Frugal Innovation (FI)	0.604	0.789			
Women Entrepreneurship (WE)	0.571	0.625	0.817		
Smart Business Adaptability (SBA)	0.636	0.592	0.651	0.801	
MSME Performance (MP)	0.599	0.615	0.633	0.684	0.834

Table 4.  $R^2$  Values of endogenous constructs: smart business adaptability and MSME

Endogenous Construct	$R^2$	$Q^2$	Interpretation
Smart Business Adaptability	0.487	0.759	Moderate
MSME Performance	0.534	0.759	Moderate

## Hypothesis Testing

To validate the hypothesized relationships between variables, hypothesis testing is conducted by examining the statistical significance of the path coefficients. A p-value below 0.05 is typically used to determine significance, suggesting a meaningful relationship between the constructs involved (Hair et al. 2011). Based on Table 5, the hypothesis tests confirm the robustness and validity of the proposed relationships, providing strong empirical support for the theoretical framework applied in this research.

### The influence of resilient leadership on MSME performance

The study finds that resilient leadership measured by stress management, solution focus, and decision resolve does not significantly influence MSME performance in Jakarta. This result is consistent with the statistical output, which shows that the path coefficient from Resilient Leadership to MSME Performance is relatively small ( $\beta = 0.112$ ), and the explained variance for performance ( $R^2 = 0.534$ ) indicates that leadership contributes minimally compared to other predictors. Although the indicators of resilient leadership demonstrated strong loadings in the measurement model, their weak structural effects suggest that these traits have low predictive power for explaining variations in performance outcomes such as revenue growth, customer acquisition, and product innovation.

This finding deviates from expectations based on Resilient Leadership Theory (Everly Jr et al. 2020), which posits that resilience is central to performance under pressure. However, the data patterns in this study imply that resilient behaviors are not translating into measurable performance gains, likely because Jakarta's women-led MSMEs operate with limited capital, small teams (mostly 3–5 employees), and modest educational backgrounds, which restrict the leverage of leadership capabilities. From the Resource-Based View (Barney, 1991), resilient leadership alone is insufficient to create competitive advantage unless accompanied by complementary resources, such as technology, financial capacity, and market access. Moreover, the relatively stronger effects of Frugal Innovation and Women Entrepreneurship indicate that MSME performance in this context is more influenced by practical resource optimization and everyday decision autonomy than by abstract leadership traits (Bound & Thornton, 2012). The model also shows moderate variance in Smart Business Adaptability ( $R^2 = 0.487$ ), demonstrating that leadership does not strongly shape adaptive behaviors either. Even with widespread use of digital tools, limited strategic capability reduces leaders' ability to turn resilience into operational impact. Overall, the data suggest that while resilient leadership remains a foundational psychological resource, it does not, on its own, drive performance among women-led MSMEs in Jakarta without broader ecosystem support and stronger organizational capabilities.

Table 5. Summary of hypothesis testing and path significance among resilient leadership, frugal innovation, women entrepreneurship, smart business adaptability, and MSME

Hypothesis	Relationship Between Variables	Path Coefficient	p-value	Significance
H1	Resilient Leadership (RL) → MSME Performance (MP)	0.112	0.086	Not significant
H2	Frugal Innovation (FI) → MSME Performance (MP)	0.231	0.009	significant
H3	Women Entrepreneurship (WE) → MSME Performance (MP)	0.194	0.015	Significant
H4	Smart Business Adaptability (SBA) → MSME Performance (MP)	0.426	0.000	Significant
H5	Resilient Leadership (RL), Frugal Innovation (FI), Women Entrepreneurship (WE) → Smart Business Adaptability (SBA) → MSME Performance (MP) (mediation)	0.174	0.117	Not Significant

### **The influence of frugal innovation on MSME performance**

The study finds that frugal innovation captured through cost efficiency, market innovation, and functional simplicity has a positive and significant effect on the performance of women-led MSMEs in Jakarta. This result aligns with Frugal Innovation Theory, which emphasizes generating high customer value from minimal resources (Bound & Thornton, 2012). Among the indicators, market innovation shows the strongest loading (0.828), suggesting that the ability to introduce straightforward, market-relevant product adjustments is the primary driver of frugal innovation's impact on performance. Cost efficiency and functional simplicity also load strongly but slightly lower, indicating that while efficient resource use is important, it is the market-oriented creativity that most directly enhances revenue, customer growth, and product innovation. These data patterns are consistent with the demographic characteristics of the sample: 47% operate in the culinary sector and 55% manage micro-sized teams (3–5 employees), where incremental product tweaks and cost-conscious decisions are more feasible than large-scale innovation. Frugal practices are further supported by widespread reliance on low-cost digital platforms such as Instagram (76%) and online marketplaces (52%), which enable direct-to-consumer sales with minimal marketing expenditure. From the RBV perspective (Barney, 1991), this reflects the strategic use of limited internal resources to build competitiveness without advanced technology or substantial financial investment. The respondent profile dominated by entrepreneurs aged 31–40 (42%) with 4–6 years of experience (41%) also reinforces the finding that practical, experience-driven market adjustment is a natural fit for these businesses. Compared with resilient leadership, which shows a weak structural effect in the model, frugal innovation emerges as a stronger predictor of MSME performance, underscoring that creative efficiency and market responsiveness are central to business success in Jakarta's resource-constrained yet dynamic MSME environment.

### **The influence of women entrepreneurship on MSME performance**

The study's third hypothesis confirms that women's entrepreneurship, as measured by decision autonomy, time management, and social resilience, positively and significantly influences MSME performance in Jakarta.

Among these indicators, time management shows the strongest loading (0.859), suggesting that women entrepreneurs' ability to allocate time efficiently across production, sales, family responsibilities, and digital marketing is the primary driver of improved revenue growth, customer acquisition, and product innovation. Decision autonomy (0.814) and social resilience (0.822) also contribute meaningfully, though their effects are slightly weaker than those of time management. This finding reinforces insights from Resilient Leadership Theory, which emphasizes women entrepreneurs' adaptive capacity in balancing dual roles while sustaining resilience during crisis periods (Everly Jr et al. 2020). The demographic characteristics of respondents, predominantly aged 31–40 (42%) and with diverse educational backgrounds, suggest a mature level of emotional stability and managerial capability that supports these entrepreneurial behaviors. Their concentration in micro-scale culinary businesses (47% of the sample; 55% employing 3–5 workers) further underscores the strong link between personal involvement and efficient daily management and performance gains. From the Resource-Based View (Barney, 1991), these findings highlight that decision autonomy, effective time management, and social resilience represent valuable internal resource components of intellectual and social capital that underpin sustainable competitive advantage. The relevance of women's entrepreneurship is further supported by research showing women's strengths in navigating dynamic environments and generating accessible, market-relevant innovations (Setyaningrum et al. 2023; Adjou et al. 2012). The high adoption of low-cost digital platforms such as Instagram (76%) and online marketplaces (52%) also reflects their strategic agility in leveraging affordable marketing tools. Overall, women entrepreneurship significantly enhances MSME performance in Jakarta, with time management emerging as the most influential component, supported by decision autonomy and social resilience as complementary drivers of sustainable growth and innovation.

### **The influence of smart business adaptability on MSME performance**

The study's fourth hypothesis confirms that Smart Business Adaptability, measured by strategic agility, digital use, and market response, has a positive and significant effect on MSME performance in Jakarta, particularly on revenue growth, customer expansion,

and product innovation. It emphasizes the importance of adaptive capabilities in navigating volatile market conditions, especially amid rapid digital transformation and post-pandemic economic recovery. According to the Resource-Based View Theory (Barney, 1991), MSMEs' ability to quickly respond to market shifts, effectively utilize digital tools, and adjust strategies flexibly reflects dynamic capabilities that strengthen competitive advantage despite constraints on capital, infrastructure, and labor. The demographic profile shows that most MSMEs are culinary-focused (47%) micro-businesses with 3–5 employees (55%), yet they demonstrate strong digital engagement through platforms such as Instagram (76%), WhatsApp Business (63%), and online marketplaces (52%). This digital adaptability enhances market reach and facilitates real-time feedback for product innovation. Strategic agility, such as rapidly modifying menus, pricing, or distribution methods, enables MSMEs to stay aligned with changing consumer preferences, supporting prior findings that highlight its critical role in maintaining competitiveness (Adomako et al. 2022). The Frugal Innovation Theory also supports these findings, showing that simple, cost-effective digital tools empower MSMEs to innovate affordably within resource-limited settings (Radjou et al. 2012).

Meanwhile, Resilient Leadership Theory contextualizes smart adaptability as a form of resilience, manifested in leaders' swift and strategic crisis responses (Everly Jr et al. 2020). Altogether, Smart Business Adaptability emerges as a core driver of MSME performance in Jakarta, with digital use showing the strongest loading (0.839) among the three drivers. It indicates that businesses that leverage digital tools most effectively, particularly for marketing, customer interaction, and operational coordination, are better positioned to achieve sustainable success in Indonesia's increasingly dynamic business landscape.

### **Smart business adaptability mediates the effect of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance**

The study examined the mediating role of smart business adaptability on the effects of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance in Jakarta. The results indicate that smart business adaptability does not significantly mediate the relationship between resilient leadership and MSME performance.

Although resilient leadership characterized by stress management, solution orientation, and decisive action has been theorized to enhance business performance through adaptive systems (Barney, 1991), in the Jakarta context, leaders' traits alone were insufficient to translate into measurable outcomes without well-developed adaptive mechanisms. Demographically, respondents were mainly aged 31–40 years (42%) with 4–6 years of business experience (41%), operating micro-enterprises with 3–5 employees (55%) and utilizing digital platforms such as Instagram (76%), WhatsApp Business (63%), and online marketplaces (52%). Despite this experience and digital engagement, the capacity to leverage smart adaptability strategically remained limited, preventing resilient leadership from producing a significant performance impact.

Similarly, smart business adaptability did not significantly mediate the effects of frugal innovation and women entrepreneurship on MSME performance. While Frugal Innovation Theory and Gender and Entrepreneurship Theory suggest that simple innovations and women-led initiatives should improve outcomes (Radjou et al. 2012), the study found that Jakarta MSMEs lacked sufficient operational and strategic integration to realize these benefits. Limited educational attainment (34% high school graduates), small organizational size, and sectoral constraints, particularly in the culinary sector (47%), hindered the translation of innovation and female entrepreneurship into performance gains. Although digital tools were widely used, their application remained largely operational rather than strategic. These findings indicate that, in this context, smart business adaptability alone was insufficient to significantly mediate the effects of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance, highlighting the need for targeted interventions such as adaptive capability training, strategic digital skill development, and supportive networks for women entrepreneurs.

### **Managerial Implication**

The study's findings indicate that smart business adaptability does not significantly mediate the effects of resilient leadership, frugal innovation, and women entrepreneurship on MSME performance in Jakarta. It suggests that the potential benefits of leadership resilience, resource-efficient innovation, and entrepreneurial capability are not automatically realized through current adaptive practices. As a result,

more direct and targeted managerial interventions are needed. One practical step is implementing targeted digital literacy training, such as short modules on data-driven customer targeting or product innovation sprints, to help entrepreneurs translate ideas into rapid, low-cost prototypes. To ensure these interventions are effective, local government programs such as Jakpreneur should lead in providing structured digital training and infrastructure support. At the same time, incubators and business associations can focus on applied mentorship, coaching, and hands-on innovation workshops. These actors are best positioned to bridge practical capability gaps by providing continuous guidance and access to resources. Theoretically, based on the RBV, resilient leadership, frugal innovation, and women's entrepreneurship require deliberate operationalization to influence performance; they cannot rely solely on adaptability mechanisms. It reinforces that Resilient Leadership Theory and Frugal Innovation Theory must be supported through action-oriented policies and capacity-building programs that directly connect leadership, innovation behavior, and women's entrepreneurial strengths to measurable performance outcomes.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusion

This study concludes that the performance of women-led MSMEs in Jakarta is significantly influenced by frugal innovation and women entrepreneurship, while resilient leadership shows no direct effect, and smart business adaptability does not significantly mediate the relationships among the examined variables. Although resilient leadership, resource-efficient innovation, and women's entrepreneurial capacities hold theoretical potential, these strengths are not automatically amplified through the current adaptive mechanisms available within MSMEs. From a theoretical perspective, the findings partially align with the RBV: frugal innovation and women entrepreneurship function as valuable internal resources that directly enhance performance. However, the non-significant mediation effect suggests a gap between resource possession and resource deployment, indicating that RBV's assumptions about capability transformation are not fully realized in this context. It also signals that resilience-based and frugal innovation theories require more explicit operationalization rather than relying

solely on adaptability. A key capability gap emerging from the findings is the limited strategic adaptation capacity, especially in data-driven decision-making and digital operational integration. This constraint prevents leadership strengths, innovation potential, and entrepreneurial autonomy from translating into stronger performance outcomes. The adaptive capacity of women-led MSMEs in Jakarta remains underdeveloped, limiting the extent to which leadership, innovation, and entrepreneurial competencies can be translated into measurable business growth.

### Recommendation

Given these results, capacity-building efforts for women-led MSMEs should directly address the low adaptive capacity that prevented the mediation effect of smart business adaptability from remaining weak. Therefore, local government, particularly the Jakarta Cooperative and MSME Agency, should take the lead, as it has the mandate, infrastructure, and reach to coordinate systematic interventions. Programs like Jakpreneur should incorporate practical modules focused on leadership implementation, frugal innovation execution, and women entrepreneurship skills, with a stronger emphasis on operationalizing innovation rather than expecting adaptability to emerge organically. To close the capability gap, training must include competencies in digital strategy development, market engagement techniques, customer analytics, and process optimization that enable entrepreneurs to convert leadership and innovation capabilities into immediate performance improvements. Business support agencies, universities, and digital platforms can act as complementary partners by providing mentorship, access to resources, and applied learning environments. However, the primary driver of these initiatives should remain the local government to ensure coherence, scalability, and effective follow-through.

This study has several limitations. First, its focus on women-led MSMEs in Jakarta, an urban region with advanced digital infrastructure and strong institutional support, may introduce an urban bias, particularly given the high levels of digital platform usage observed in the results. MSMEs in non-urban areas with lower digital access may exhibit different behavioral or innovation patterns. Second, the quantitative design does not capture important contextual factors that shape entrepreneurial behavior, such as informal decision-making practices, household-related constraints, or

internal organizational norms that influence how leadership or innovation is implemented. Third, the study examines only smart business adaptability as a mediating variable. Yet, factors such as digital literacy, business networking strength, and policy accessibility are likely to exert more substantial mediating effects and may substantially alter the observed relationships. Future research is encouraged to incorporate qualitative or mixed-method approaches to explore these contextual nuances, include additional mediators such as digital literacy or network capability, and expand the regional scope beyond Jakarta to provide a more comprehensive understanding of the drivers of MSME performance.

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