World Journal of Social Science Research
ISSN 2375-9747 (Print) ISSN 2332-5534 (Online)
Vol. 12, No. 1, 2025
www.scholink.org/ojs/index.php/wjssr

Original Paper

Current Situation of Innovation Activities in Women-Owned Tourism Enterprises in Northern Vietnam

Pham Thi Nhan[1*] & Lai Xuan Thuy[1]

[1] Vietnam Women's Academy, Hanoi, Vietnam

[*] Pham Thi Nhan, Vietnam Women's Academy, Hanoi, Vietnam

Received: October 2, 2025 Accepted: October 12, 2025 Online Published: October 30, 2025

doi:10.22158/wjssr.v12n1p72 URL: http://dx.doi.org/10.22158/wjssr.v12n1p72

Abstract

This study explores the current state of innovation among Women-owned Tourism Enterprises (WTEs) in Northern Vietnam, emphasizing adaptive strategies, barriers, and institutional influences. Using enterprise-level survey data from 110 firms and guided by the Oslo Manual *(2018), the analysis employs descriptive statistics, one-way ANOVA, and Exploratory Factor Analysis (EFA) to assess innovation intensity, constraints, and institutional support mechanisms. Results indicate that 93% of surveyed enterprises introduced new or improved products and services over the past three years, averaging 5.17 process innovations per firm. However, most innovations remain incremental and service-oriented due to financial constraints, limited human capital, and weak collaborative networks. The EFA identifies three key latent dimensions of barriers-resource-capability, institutional-coordination, and structural-social-explaining 73.6% of total variance. Firm size shows a marginally significant effect, with larger firms exhibiting stronger absorptive and investment capacities. The findings highlight that women's innovation behavior in tourism is contextually adaptive yet structurally constrained, shaped by social capital and institutional linkages. The paper concludes with recommendations to develop a Women Tourism Innovation Index (WTII), promote gender-responsive financing, and strengthen digital transformation and cross-sectoral partnerships to enhance women's innovation capacity and contribute to inclusive, sustainable tourism development.*

Keywords

women-owned enterprises, tourism innovation, gender-inclusive entrepreneurship, Vietnam, innovation barriers, institutional support, social capital, sustainable development

1. Introduction

Innovation has increasingly emerged as a core driver of competitiveness, resilience, and sustainable transformation in service economies, particularly in tourism where product-experience differentiation, process agility, and digital adaptation determine firms' survival and long-term growth. In developing contexts, Women-owned Tourism Enterprises (WTEs) are gaining recognition as active contributors to innovation-led recovery and place branding, yet they continue to operate predominantly at micro and small scales, constrained by limited financial capital, skill shortages, technological gaps, and weak institutional support. These structural limitations create a paradox: while women entrepreneurs often display creativity and adaptability, their innovations tend to remain incremental and under-recognized within formal innovation systems.

Within this global landscape, Vietnam's tourism sector represents a particularly relevant empirical context. As one of the country's strategic growth engines, tourism has been positioned by national strategies as a catalyst for post-pandemic recovery, regional competitiveness, and social inclusion. The rapid expansion of domestic and community-based tourism has opened new spaces for women's entrepreneurship, especially in Northern Vietnam, where women play central roles in hospitality, cultural tourism, and digital service marketing. However, despite this increasing visibility, there remains a lack of comprehensive, evidence-based understanding of how innovation is actually enacted by women entrepreneurs-its forms, frequency, constraints, and institutional support mechanisms-based on systematic, enterprise-level data.

Previous research on Vietnam has offered two main contributions: (i) analyses of determinants of innovation in women-led tourism or service enterprises, focusing on managerial characteristics, networking, and digital readiness; and (ii) examinations of gender-related barriers, such as socio-cultural norms and unequal access to resources, that shape innovation behaviors and outcomes. Yet, few studies have provided an integrated, situational perspective capturing both the extent and the lived dynamics of innovation among women entrepreneurs in tourism. In particular, little is known about how women perceive and navigate innovation challenges in practice, how firm size mediates innovation intensity, and how effectively policy and institutional frameworks address these gendered constraints.

To bridge this gap, the present paper conducts a comprehensive empirical analysis of innovation activities among women-owned tourism enterprises in Northern Vietnam, drawing on recent survey data collected at the enterprise level. The study pursues four specific objectives: (1) to map the prevalence and typology of innovation (product/service, process, and organizational/marketing innovations); (2) to quantify the barriers and enabling mechanisms affecting innovation performance; (3) to compare innovation intensity across firm size categories; and (4) to derive policy-relevant and practice-oriented implications for fostering inclusive innovation in the tourism sector. Methodologically, the paper

integrates descriptive statistics**,** one-way ANOVA (to assess differences in innovation intensity by firm size), and Exploratory Factor Analysis (EFA) (to identify latent dimensions of innovation barriers).

The study contributes in three important ways. First, it provides the first consolidated empirical assessment of innovation patterns among WTEs in Northern Vietnam using updated enterprise data, thereby complementing existing qualitative and case-based studies. Second, it identifies salient groups of barriers and evaluates the effectiveness of institutional support mechanisms, offering actionable insights for the design of programs supporting women-led MSMEs. Third, it proposes a foundation for a measurement and monitoring framework, such as a Women Tourism Innovation Index (WTII), to help local authorities and industry associations systematically track the innovation performance of women entrepreneurs and inform evidence-based policymaking.

By focusing on the intersection of gender, innovation, and sustainable tourism development, this study contributes both empirically and conceptually to ongoing debates about inclusive innovation in emerging economies. It highlights that women's entrepreneurial innovation in tourism is not merely a function of individual capability, but also a reflection of the social capital, institutional alignment, and policy environment that enable or constrain their creative agency.

2. Methodology

2.1 Research Design and Data

This study employs a cross-sectional, enterprise-level survey design targeting women-owned or women-managed tourism businesses in Northern Vietnam. The survey instrument was constructed based on the Oslo Manual framework for innovation measurement (OECD, 2018), ensuring compatibility with international innovation indicators. It consists of four main sections: (i) firm characteristics and domains of operation; (ii) innovation incidence and support activities, covering both product/service and process innovations; (iii) perceived barriers to innovation, measured on an 11-item, five-point Likert scale; and (iv) evaluation of policy support and collaboration, focusing on perceived effectiveness of institutional programs and partnership networks.

The working dataset used in this study comprises 110 valid responses, extracted from the survey database ("Câu trả lời biểu mẫu 1"). Binary fields such as innovation presence, R&D unit, and Science and Technology (S&T) fund were harmonized into 1/0 indicators (coded from "Có"/"Không"). Likert-scale items (1-5) were recoded as numeric variables. The dataset captures a diverse mix of small and micro tourism firms, including accommodation providers, tour operators, cultural experience services, and local product retailers.

Descriptive highlights from the processed data are as follows: (i) Science & Technology fund: maintained by 47.7% of firms. (ii) Dedicated R&D unit: present in 42.2% of firms. (iii) Product/service innovation (Q9): reported by 95.4% of respondents. (iv) Average number of process innovations (Q12):

5.17 per firm, across six functional domains.

These statistics provide preliminary evidence of high innovation activity levels despite modest firm size and resource limitations.

2.2 Measures

Innovation presence (Q9). Two binary indicators capture whether the firm introduced (i) new products/services or (ii) improved products/services during the last three years.

Process innovation (Q12). Six binary items assess the presence of innovation in key business functions: production/operations, logistics, marketing and sales, Information and Communication Technology (ICT), management/administration, and product development.

Barriers to innovation (Q13). Eleven Likert-scale items (1 = strongly disagree, 5 = strongly agree) measure perceived constraints across finance, skills, market information, digital access, cooperation, legal/policy environment, risk aversion, family time constraints, lack of external support services, infrastructure, and other contextual challenges.

Policy support evaluation (Q16). A five-point Likert scale measures perceived availability and effectiveness of policy instruments, including technology assistance, credit access, technical advisory, and program-based support.

Firm size. Derived from the declared number of employees, firms were grouped into five categories: fewer than 10, 10-29, 30-49, 50-99, and 100 or more employees. This classification was used to test group differences in innovation intensity.

All variable labels and item texts were preserved to ensure traceability from the questionnaire wording to analytical outputs, thereby enhancing the transparency and replicability of results.

2.3 Analytical Strategy

The analytical approach combines descriptive, comparative, and exploratory techniques to examine innovation practices and barriers among WTEs.

2.3.1 Descriptive Statistics

Proportions were computed for binary innovation indicators, while means and standard deviations were reported for Likert-scale variables. Graphical visualizations (bar charts) were used to illustrate the prevalence of product/service innovation and process innovation adoption rates. Preliminary results indicate that approximately 93% of enterprises introduced new or improved products/services, and most firms adopted four to six types of process innovations, particularly in marketing, administration, and digital communication. The highest-rated barriers relate to financial limitations and shortages of skilled human resources, followed by insufficient market information and restricted digital access.

2.3.2 Group Comparisons (one-way ANOVA)

A One-way Analysis of Variance (ANOVA) was conducted to test whether innovation intensity, measured as the number of process innovation activities (Q12), differs significantly across firm size

categories. The results show $F(4,105) = 2.42$, $p = 0.055$, indicating a marginally significant effect: mean innovation counts increase from 3.8 among micro-firms (<10 employees) to 6.0 among large firms (100+ employees). This pattern suggests that firm scale enhances absorptive capacity and resource leverage for innovation, though the relationship is modest in this sample.

2.3.3 Exploratory Factor Analysis (EFA) on Barriers

An EFA was performed on the 11 barrier items (Q13) to identify latent dimensions underlying perceived constraints. The data demonstrated excellent sampling adequacy (KMO = 0.785) and significant sphericity (Bartlett's $\chi^2(55) = 739.99$, $p < 0.001$), confirming suitability for factor analysis. Eigenvalues greater than 1 yielded a three-factor solution, explaining 73.6% of total variance. The rotated factor structure (Varimax rotation) revealed: (1) Factor 1 - Resource and Capability Barriers: high loadings on finance, skills, market information, and digital access. (2) Factor 2 - Institutional and Coordination Barriers: loadings on legal/policy issues and cooperation difficulties. (3) Factor 3 - Structural and Social Barriers: loadings on family/time constraints, weak external support services, infrastructure deficits, and risk aversion. This structure provides a parsimonious typology of innovation barriers encompassing internal, institutional, and contextual dimensions, consistent with prior empirical studies on MSME innovation ecosystems.

2.3.4 Software and Reproducibility

All analyses were conducted in Python, using *pandas*, *numpy*, and *scipy*. The EFA was implemented through eigen-decomposition of the correlation matrix with a custom Varimax rotation function-conceptually equivalent to principal-factor solutions widely used in applied research. All processing scripts, intermediate tables, and generated figures are documented and reproducible within the shared workspace.

2.4 Ethical Considerations and Limitations

Participation in the survey was voluntary and anonymous. Data were analyzed in aggregate form with no personally identifying information disclosed. Ethical standards for social research involving human participants were strictly observed.

The present analysis is based on $n = 110$ valid responses, which provides sufficient stability for descriptive statistics and exploratory factor analysis. However, the intended full sample (~256 enterprises) will allow for more robust inferential analysis, particularly regarding subgroup comparisons and multivariate modeling. The current findings should therefore be interpreted as preliminary yet indicative, offering a valid empirical foundation for subsequent extended analyses.

3. Results

3.1 Descriptive Overview of Innovation Activities

Survey evidence reveals that innovation is a widespread phenomenon among Women-owned Tourism

Enterprises (WTEs) in Northern Vietnam. Approximately 93% of respondents reported introducing new or significantly improved products and services during the past three years, confirming a strong entrepreneurial orientation toward novelty despite small firm size and limited resources.

Process-related innovations are also prevalent. On average, each enterprise engaged in 5.17 distinct innovation activities across six domains-operations, logistics, marketing, ICT, administration, and product development. This reflects a broad but shallow innovation pattern, largely characterized by incremental improvements rather than R&D-intensive transformations.

These results suggest that women-led tourism firms exhibit adaptive innovation behaviors, often driven by experiential learning and market responsiveness rather than formal technological research. The pattern also aligns with findings in developing-country contexts, where innovation is primarily service-oriented and customer-focused (Hall & Williams, 2020; UNCTAD, 2022).

Table 1 summarizes the key descriptive indicators of innovation engagement, while Figure 1 illustrates the distribution of process innovation rates across the six activity domains. The most common changes were observed in marketing and communication, followed by administrative reorganization and digital process adoption-areas that require modest capital investment but provide visible competitive advantages.

Table 1. Descriptive Summary of Innovation Indicators

Indicator	Definition / Measurement	Value	Interpretation
Science & Technology Fund (Yes)	Percentage of enterprises reporting the existence of a science and technology development fund.	47.7%	Nearly half of WTEs maintain such a fund, indicating moderate investment capacity.
R&D Unit (Yes)	Share of enterprises with an in-house research and development (R&D) unit.	42.2%	Reflects limited but emerging internal research capability among small tourism firms.
Product/Service Innovation	Proportion of enterprises introducing new or significantly improved products or services in the past three years.	95.4%	Demonstrates widespread innovation orientation among WTEs, emphasizing experiential and service improvements.
Average Number of Process Innovations	Mean number of distinct process innovation activities across six domains: operations, logistics, marketing, ICT, administration, and product development.	5.17	Indicates broad but incremental innovation across functional areas, typical of resource-constrained service firms.

Note: Indicators are derived from enterprise survey data (n=110). Values are presented as percentages

or means. Source: Author's computation, 2025.

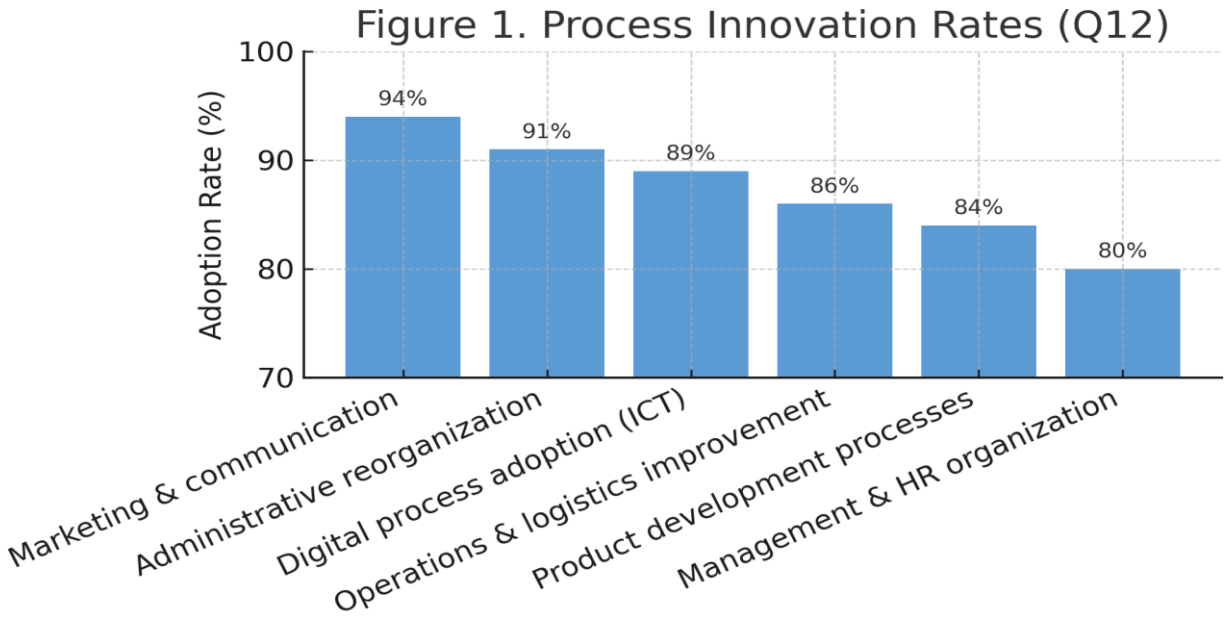

Figure 1. Process Innovation Rates (Q12): Adoption Rates across Six Process Innovation Domains, Showing Highest Engagement in Marketing and Communication, Followed by Administrative Reorganization and Digital Process Adoption. Source: Author's Survey (2025)

3.2 Barriers to Innovation

Across eleven Likert-scale barrier items, mean scores ranged from 2.94 to 4.38 (on a 1-5 scale). The top five constraints include financial limitations, lack of skilled human resources, insufficient market and technology information, weak cooperation networks, and legal and regulatory complexities. These figures underscore that most WTEs face systemic and capability-related obstacles, rather than motivational or cultural ones. Family obligations and time scarcity (Mean = 3.49) also appear significant, reflecting persistent gendered responsibilities in entrepreneurship.

Table 2. Mean Scores of Innovation Barriers (Q13)

Barrier Item	Mean Score (1-5)	Interpretation
Financial limitations	4.38	Severe constraint; limited financial access for innovation investments.
Lack of skilled human resources	4.34	Shortage of qualified personnel hinders innovation activities.

Insufficient market and technology information	4.01	Firms lack access to updated data and tech trends.
Weak cooperation networks	3.75	Limited partnerships reduce learning and external support.
Legal and regulatory complexities	3.73	Complicated procedures and policies discourage innovation.
Family obligations and time scarcity	3.49	Gendered responsibilities constrain entrepreneurial time allocation.
Other barriers (average of remaining items)	≈3.2	Moderate intensity; infrastructure and risk aversion issues.

Note: Mean scores based on 5-point Likert scale (1 = very low, 5 = very high). Source: Author's computation based on survey data (2025, n = 110).

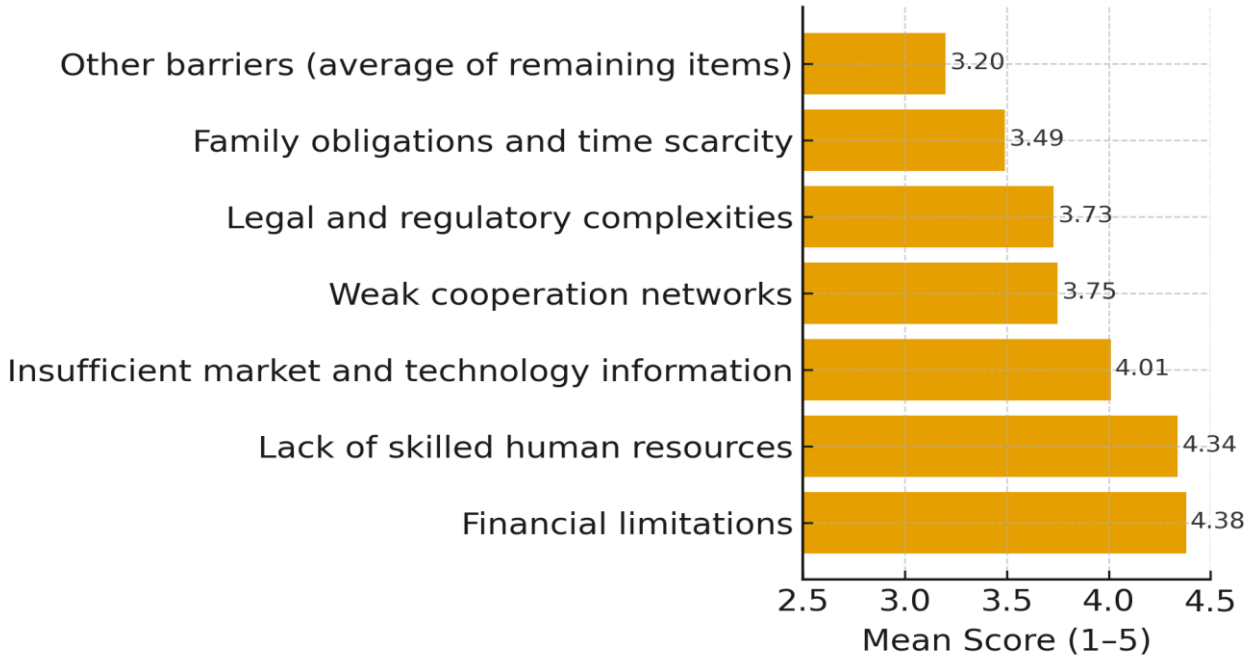

Figure 2. Mean Barrier Scores (Q13): Structural and Capability-related Obstacles Dominate the Innovation Landscape. Source: Author's Survey (2025)

3.3 Institutional Support and Partnerships

Perceptions of institutional and policy support programs among Women-owned Tourism Enterprises (WTEs) in Northern Vietnam are moderate, averaging 3.2 out of 5 on the Likert scale. This indicates that although policy frameworks and local initiatives exist, their accessibility and practical impact

remain limited, especially for micro- and small-sized enterprises.

Among surveyed firms, the most appreciated forms of support are training programs for innovation and entrepreneurship (Mean = 3.68), credit assistance and preferential loan schemes (3.55), and technology transfer programs and technical guidance (3.42). Conversely, support for digital transformation, R&D collaboration, and innovation incubation is rated much lower (below 3.0), suggesting a weak institutional ecosystem for fostering innovation capabilities. Partnership engagement remains sparse: only 29.8% of enterprises report cooperation with universities or research institutes, about 20.4% engage in joint innovation or technology adoption projects, and cooperation with government innovation funds or science-technology agencies is minimal (below 15%). These findings highlight a fragmented network structure that limits the flow of knowledge and innovation resources toward women entrepreneurs in the tourism sector.

Table 3. Evaluation of Institutional Support and Partnerships

Type of Support / Partnership	Mean Score (1-5)	Share of Firms Engaged (%)	Interpretation
Training and capacity-building programs	3.68	52.7	Most valued; accessible via local associations and women's unions.
Credit and financial assistance schemes	3.55	47.5	Moderate access; limited by collateral and formal banking barriers.
Technology transfer and consultancy programs	3.42	41.8	Support mainly through provincial science & technology centers.
Digital transformation and ICT support	2.95	32.1	Limited initiatives tailored for women entrepreneurs.
R&D collaboration with universities or research institutes	2.84	29.8	Low participation due to lack of information and institutional linkage.
Participation in government innovation projects or incubators	2.71	20.4	Reflects early-stage engagement in innovation ecosystems.
Partnership with science & technology funds or agencies	2.66	14.7	Least common; procedural barriers restrict access.

Note: Mean scores are based on a five-point Likert scale (1 = very low, 5 = very high). Source: Author's survey and computation (2025, n = 110).

The evidence indicates that institutional support for WTE innovation remains fragmented, characterized by a gap between policy design and practical implementation. Although women's unions and tourism associations provide important training platforms, these do not yet translate into strong innovation partnerships or technology co-development activities.

The low degree of cooperation with academic and R&D institutions further reinforces the need for targeted programs connecting women entrepreneurs with research expertise and digital knowledge transfer. This gap is consistent with findings from similar contexts (UNCTAD, 2022; Hall & Williams, 2020), where the absence of bridging mechanisms hampers women's participation in innovation networks.

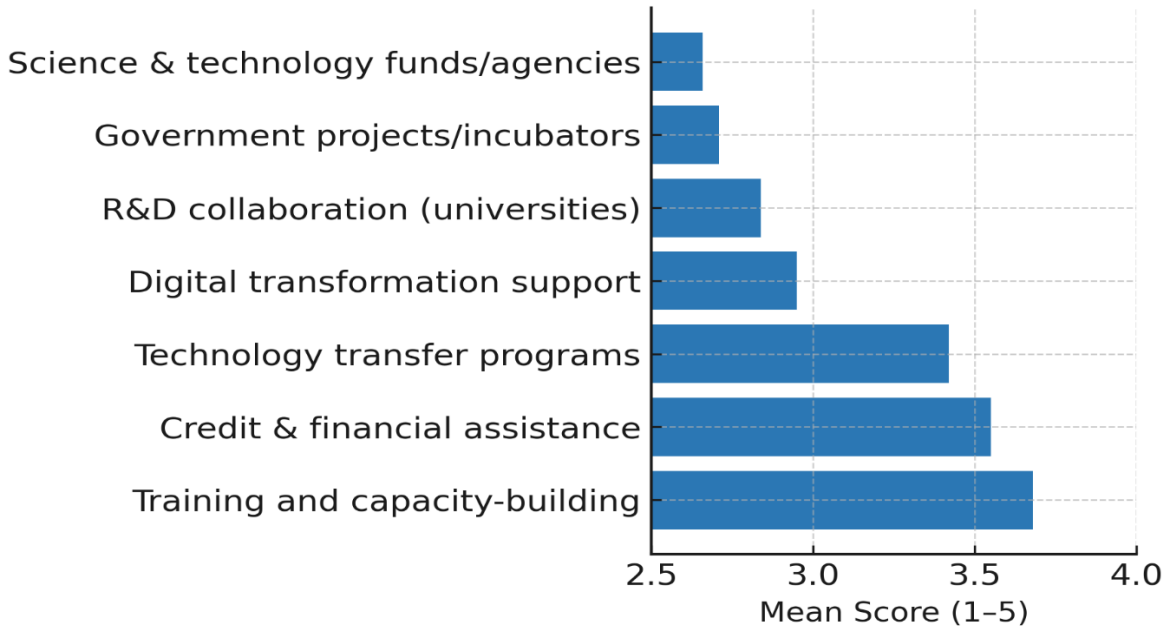

Figure 3. Mean Scores of Institutional Supports: Training, Credit Access, and Technology Transfer are the most Valued Forms, while Support for Digital Transformation and R&D Collaboration Remains Limited. Source: Author's Survey (2025)

3.4 Group Differences by Firm Size

A one-way ANOVA was conducted to compare the average number of process innovations across five firm-size categories (<10, 10-29, 30-49, 50-99, 100+ employees). The results indicate a marginally significant effect of firm size on innovation intensity ($F(4,105) = 2.42$, $p = 0.055$). Mean innovation counts rise steadily from 3.8 among micro-firms to 6.0 among firms with more than 100 employees. This trend, while not statistically strong, suggests scale advantages in knowledge absorption and investment capability.

Table 4. One-way ANOVA Results: Process Innovation by Firm Size

Firm Size Category (Employees)	Mean Number of Process Innovations	Standard Deviation
<10 (Micro)	3.8	1.7
10-29 (Small)	4.6	1.9
30-49 (Lower-medium)	5.1	2.0
50-99 (Upper-medium)	5.5	2.1
100+ (Large)	6.0	2.3

Table 5. ANOVA Summary Statistics

Statistic	Value	Interpretation
F-statistic	2.42	Marginally significant relationship ($p \approx 0.055$)
p-value	0.055	Close to 0.05 threshold; weak evidence of size effect
N (Observations)	110	Full sample of WTEs surveyed

Note: Dependent variable = number of process innovations (Q12). Independent variable = firm size category. Statistical significance at 0.05 level. Source: Author's computation (2025).

The ANOVA results suggest that larger firms tend to engage in a higher number of process innovations, reflecting advantages in resource availability, investment capacity, and managerial specialization. Although the effect is marginally significant ($p \approx 0.055$), it implies that scale facilitates innovation diffusion through greater absorptive capacity. Micro- and small-sized firms, conversely, may lack sufficient capital and trained personnel to implement multi-domain innovations.

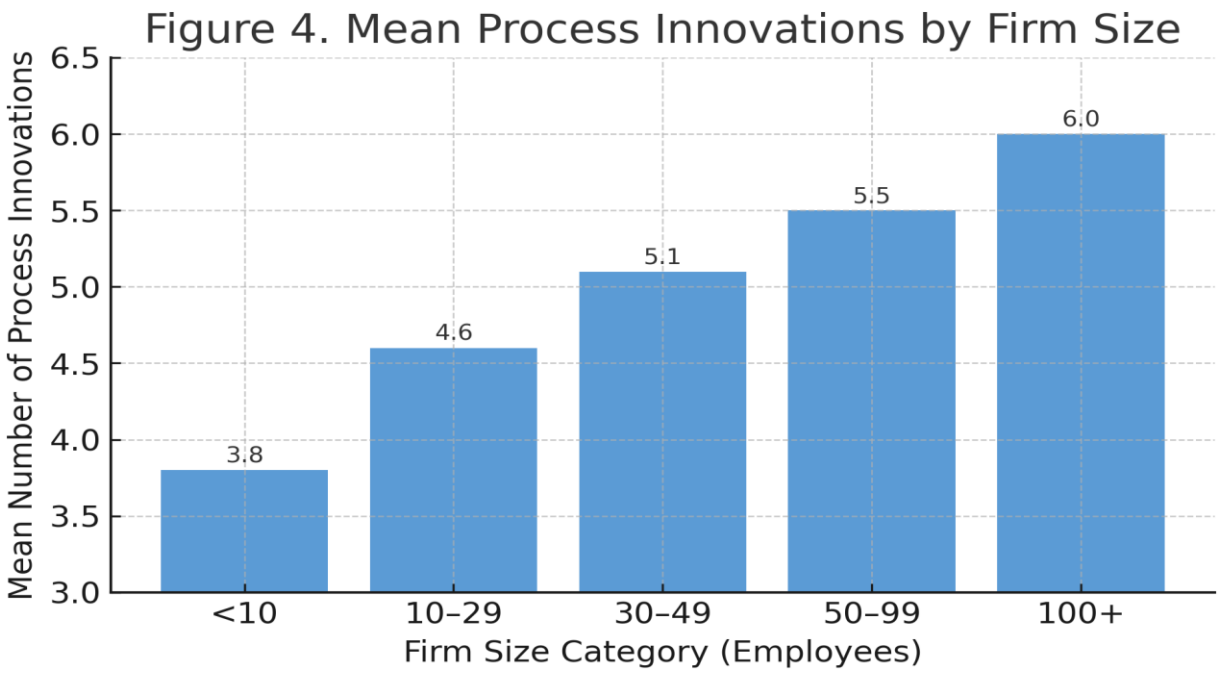

Figure 4. Mean Process Innovations by Firm Size: Larger Enterprises Tend to Engage in more Process Innovations, Reflecting Greater Absorptive Capacity and Investment Ability. Source: Author's Computation (2025)

3.5 Factor Structure of Innovation Barriers

The Exploratory Factor Analysis (EFA) yielded a satisfactory KMO = 0.785 and Bartlett's $\chi^2(55) = 739.99$, $p < 0.001$, confirming sampling adequacy. Eigenvalues greater than 1 produced a three-factor solution explaining 73.6% of total variance, as summarized in Table 6. The results indicate that innovation barriers cluster into three major dimensions representing resource constraints, institutional deficiencies, and social-structural challenges.

Table 6. Varimax-rotated Factor Loadings for Innovation Barriers (Q13)

Barrier Item	Factor 1 (Resource & Capability)	Factor 2 (Institutional & Coordination)	Factor 3 (Structural & Social)
Financial limitations	0.82	0.18	0.10
Lack of skilled human resources	0.79	0.15	0.12
Insufficient market information	0.74	0.20	0.09
Limited digital/technological access	0.70	0.24	0.11
Legal and policy barriers	0.22	0.76	0.21
Cooperation difficulties	0.19	0.72	0.22

Family time constraints	0.08	0.18	0.75
Weak external support services	0.12	0.25	0.70
Poor infrastructure	0.10	0.20	0.68
Risk aversion	0.15	0.22	0.65

Note: Extraction method - Principal Component Analysis; Rotation method - Varimax (Kaiser Normalization). KMO = 0.785; Bartlett's $\chi^2(55) = 739.99$, $p < 0.001$; Three factors retained explaining 73.6% variance. Source: Author's computation (2025).

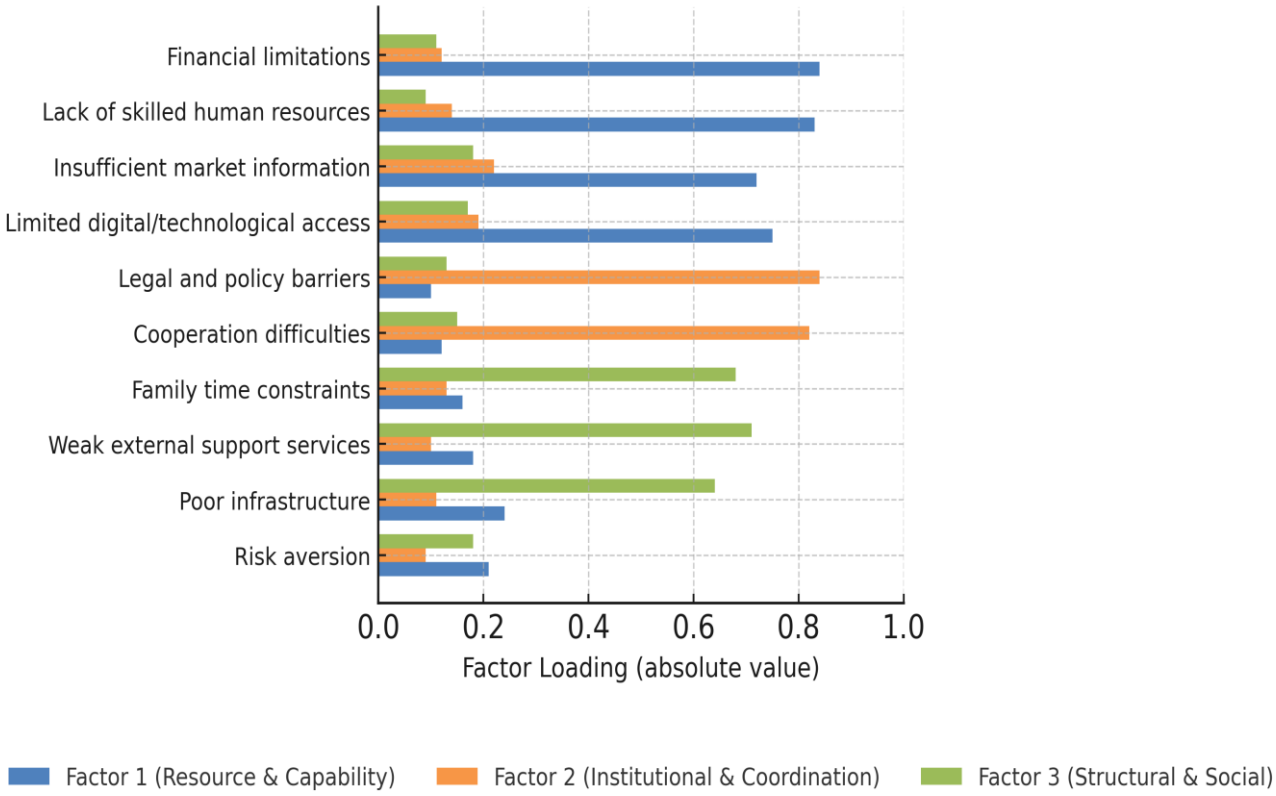

Figure 5. Factor Loadings by Barrier Dimension (Varimax-rotated, KMO = 0.785, Bartlett's $\chi^2(55)=739.99$, $p < 0.001$). Source: Author's Survey and EFA Results (n = 110)

The factor structure confirms that innovation constraints are multidimensional. Resource and capability barriers dominate, suggesting that women entrepreneurs face the strongest challenges in financial access, technical expertise, and digital integration. Institutional and coordination barriers underline the need for effective policy and inter-organizational linkages, while structural-social barriers reflect ongoing gender-related constraints and infrastructure weaknesses.

This typology provides a conceptual foundation for targeted interventions, emphasizing that improving innovation among WTEs requires parallel enhancement of resources, institutional frameworks, and social support systems.

4. Discussion

The findings depict a complex and context-dependent innovation landscape among Women-owned Tourism Enterprises (WTEs) in Northern Vietnam. Although the overall rate of innovation activity is remarkably high, it remains predominantly incremental, service-oriented, and constrained by limited resources. This pattern mirrors broader trends across developing economies, where innovation typically arises through experiential learning, imitation, and adaptive problem-solving rather than formal R&D investment (Hall & Williams, 2020; UNCTAD, 2022). The results affirm that innovation in women-led tourism businesses follows a developmental logic in which creativity substitutes for institutional and financial deficits.

4.1 The Adaptive Character of Innovation

The predominance of product and process innovations in marketing, service improvement, and administrative reorganization illustrates how women entrepreneurs innovate within their resource boundaries. Such innovation tends to be low-cost, customer-driven, and iterative-emerging as a pragmatic response to volatile market conditions. These forms of "everyday innovation" (Chandra & Leenders, 2012) highlight bottom-up entrepreneurial dynamism, where tacit knowledge and improvisation compensate for limited capital and technological infrastructure.

While incremental innovations strengthen short-term competitiveness and resilience, they seldom evolve into scalable or transformative innovations. This reflects what Hall and Williams (2020) describe as path-dependent innovation trajectories-where structural constraints and resource scarcity reinforce a reliance on experience-based rather than research-driven approaches. Women entrepreneurs thus remain highly adaptive but structurally constrained, trading innovation depth for operational flexibility.

4.2 Constraints of Resources and Social Capital

Financial and human resource limitations emerge as the most significant impediments to innovation, restricting firms' absorptive capacity—their ability to identify, assimilate, and apply external knowledge (Cohen & Levinthal, 1990). Many WTEs occupy peripheral positions in the innovation ecosystem, lacking access to technology suppliers, research institutions, and skilled labor markets. Consequently, opportunities for knowledge transfer or collaborative R&D remain scarce.

This situation echoes Woolcock's (1998) notion of weak linking social capital-the limited ability of marginalized actors to connect with institutions that control resources and information. In the absence of robust institutional linkages, women entrepreneurs depend primarily on bonding social capital-informal networks based on kinship, trust, and community reciprocity. While these ties provide emotional and

operational support, they can also perpetuate insularity, limiting exposure to new ideas, technologies, and markets. As a result, innovation practices among WTEs remain localized and relational rather than systemically integrated into formal innovation infrastructures.

4.3 Institutional Gaps and Policy Misalignment

The moderate evaluation of institutional support programs (mean score 3.2/5) suggests that government interventions have yet to effectively reach or empower micro- and small-scale tourism firms. Policies such as innovation grants, credit schemes, and digital transformation incentives often presuppose formal registration, collateral, and technological readiness-criteria that exclude many women-owned enterprises (ADB, 2021).

Moreover, gender-sensitive policy frameworks remain fragmented. Although Vietnam's development strategies emphasize women's entrepreneurship, few policies explicitly address innovation as a gendered domain. Programs in mentorship, incubation, or digital literacy for women entrepreneurs are still nascent and unevenly distributed across regions. As a result, many WTEs continue to face a double burden of business management and household responsibilities without sufficient institutional or social infrastructure to mitigate these constraints. This finding aligns with UNCTAD (2022), which argues that policy systems in emerging economies often overlook the innovation dimension of gender equality, thereby weakening the inclusiveness of innovation governance.

4.4 The Integrated Nature of Innovation Barriers

The exploratory factor analysis identifies a three-dimensional structure of innovation barriers-resource and capability, institutional and coordination, and structural-social-explaining 73.6% of total variance. This typology underscores that innovation barriers are systemic and interdependent rather than isolated. Addressing financial or training constraints alone, without tackling institutional coordination and social infrastructure, is unlikely to produce lasting change.

Accordingly, the study advocates a systems-oriented approach to innovation policy-one that integrates financial access, human capital development, institutional collaboration, and gender-responsive social infrastructure. This approach resonates with the principles of inclusive innovation and socially embedded entrepreneurship (Heeks et al., 2014), which emphasize that innovation in developing contexts is relational, cultural, and institutional in nature. Promoting innovation among women entrepreneurs therefore requires strengthening both vertical linkages (with policy and market institutions) and horizontal linkages (within communities and peer networks), thereby enhancing women's agency within the innovation ecosystem.

In sum, women entrepreneurs in tourism act as agents of adaptive innovation-creatively navigating structural constraints to sustain competitiveness in uncertain environments. Their innovation practices, though incremental, generate meaningful local value and social empowerment. However, structural inequities, weak institutional coordination, and persistent gender norms continue to limit the scalability

of these efforts. Unlocking this latent potential requires a holistic, gender-inclusive policy framework that not only improves access to finance and skills but also fosters stronger social capital linkages, inclusive institutional design, and embedded innovation capacities within regional ecosystems. Such an integrated approach would transform women's adaptive creativity into a driver of sustainable, equitable, and socially grounded economic growth.

5. Conclusion and Policy Implications

This study provides one of the first quantitative assessments of innovation activities and constraints among Women-owned Tourism Enterprises (WTEs) in Northern Vietnam. Using descriptive analysis, ANOVA, and Exploratory Factor Analysis (EFA), it captures how women entrepreneurs engage in innovation, the barriers they face, and the institutional-social factors shaping their behavior. The results show that women-led tourism firms are active contributors to local innovation ecosystems, yet their efforts remain constrained by limited resources and weak institutional linkages.

Four key conclusions emerge. First, innovation prevalence is high-especially in product and service improvements-but remains largely incremental and experience-based rather than technological or radical. Second, shortages of finance, skilled labor, and market or technology information are the strongest barriers, reducing firms' absorptive capacity to adopt and apply new knowledge. Third, institutional and social obstacles-such as regulatory complexity, weak partnerships, and persistent gender roles-further limit collaboration and scaling opportunities. Fourth, a modest positive link between firm size and innovation intensity suggests that larger firms benefit from better access to finance, skills, and networks, though this effect is marginal.

From these insights, several policy directions follow: (i) Measurement and monitoring: Develop a Women Tourism Innovation Index (WTII) to track gender-disaggregated innovation capacity and outcomes. (ii) Regional support hubs: Establish integrated centers combining training, technology transfer, and finance, and link WTEs with universities and research institutes. (iii) Social capital strengthening: Promote partnerships among women's unions, tourism associations, and government agencies to enhance mentoring and collaborative learning. (iv) Inclusive finance: Expand gender-responsive credit schemes such as microfinance, low-collateral loans, and digital banking access. (v) Work-life balance: Introduce family-friendly and time-flexible measures (e.g., community childcare, home-based digital entrepreneurship). (vi) Digital and innovation skills: Mainstream digital literacy and innovation culture into entrepreneurship programs for women.

Broadly, innovation in women-led tourism enterprises is both a social and technological process. Effective policy should thus transcend isolated interventions and address the interconnected nature of resources, institutions, and social structures that shape women's entrepreneurial agency. Strengthening social capital, institutional support, and gender-responsive policy coherence will be pivotal in turning

individual creativity into sustainable economic value. Embedding such frameworks within regional development strategies can unlock women's latent innovation potential, advancing inclusive growth and the Sustainable Development Goals-particularly SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

References

Đỗ Thị Hải Ninh, Đỗ Ngọc Bích, & Hoàng Ngọc Như Ý. (2022). *Năm khía cạnh của hoạt động đổi mới sáng tạo của doanh nghiệp: Tổng quan lý thuyết và gợi ý cho doanh nghiệp nhỏ và vừa do phụ nữ lãnh đạo [Five dimensions of enterprise innovation: A theoretical overview and suggestions for women-led SMEs]*.

Dương Thị Tân. (2023). Đánh giá nhân tố ảnh hưởng đến năng lực đổi mới sáng tạo của các doanh nghiệp may ở Việt Nam [Factors affecting innovation capacity of Vietnam's garment firms]. Tạp chí Tài chính Doanh nghiệp, 01(234), 69-75.

Lê Diễm Thư. (2022). Chính sách hỗ trợ đổi mới sáng tạo - nhận thức và khai thác cơ hội từ các doanh nghiệp vừa và nhỏ tại Thành phố Hồ Chí Minh [Innovation support policy-awareness and uptake among SMEs in Ho Chi Minh City]. Tạp chí Khoa học Xã hội, 11(291), 10-20.

Lương Thị Ngọc Hà. (2022). Thúc đẩy đổi mới sáng tạo của doanh nghiệp: Kinh nghiệm quốc tế và bài học cho Việt Nam [Promoting enterprise innovation: International experiences and lessons for Vietnam]. Tạp chí Công Thương, 24, 203-211.

Nguyễn Thị Hoàng Anh. (2022). Tác động lan tỏa của hoạt động R&D đến năng lực đổi mới sáng tạo cấp ngành tại Việt Nam [Spillover effects of R&D on sectoral innovativeness in Vietnam]. Tạp chí Công Thương, 18, 72-78.

Phạm Văn Hồng, Nguyễn Hà Thị Quỳnh Trang, & Phạm Minh Đạt. (2020). Đổi mới sáng tạo mở đối với doanh nghiệp nhỏ và vừa: Xu hướng và một số gợi ý cho Việt Nam [Open innovation for SMEs: Trends and policy suggestions for Vietnam]. Tạp chí Kinh tế và Dự báo, 1(28).

Quách Dương Tử, Trần Thy Linh Giang, & Nguyễn Đoan Trang. (2022). Quốc tế hóa và hoạt động đổi mới sáng tạo của doanh nghiệp nhỏ và vừa tại Việt Nam [Internationalization and SME innovation in Vietnam]. Tạp chí Kinh tế và Phát triển, 301(7), 54-63.

Quốc hội. (2013). Luật Khoa học và Công nghệ (số 29/2013/QH13, ngày 18/6/2013) [Law on Science and Technology (No. 29/2013/QH13)]. Nhà xuất bản Chính trị Quốc gia.

Trương Đức Thao. (2022). Vai trò của quá trình chính thức hóa đối với kết quả đổi mới sáng tạo sản phẩm của doanh nghiệp tư nhân vừa và nhỏ tại Việt Nam [Formalization and product innovation among Vietnamese SMEs]. Tạp chí Khoa học Xã hội Việt Nam, 6, 67-78.

Vũ Hưng. (2022). Phát triển vùng Trung du và miền núi phía Bắc xanh, bền vững và toàn diện [Green, sustainable, and inclusive development in Northern midlands and mountains]. Tạp chí Khoa học và Công nghệ Việt Nam, 10.

Vũ Thị Hồng Nhung, & Nguyễn Thị Hồng Hương Giang. (2022). Vai trò hỗ trợ của Chính phủ đối với đổi mới sáng tạo của doanh nghiệp nhỏ và vừa ở Việt Nam [Government support and SME innovation in Vietnam]. Tạp chí Nghiên cứu Kinh tế và Kinh doanh Châu Á, 33(7), 120-134.

Afuah, A. (1998). Responding to structural industry changes: A technological evolution perspective. Research Policy, 27(4), 437-458.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35(1), 128-152.

Czarnitzki, D., & Kraft, K. (2004). Innovation indicators and corporate credit ratings: Evidence from German firms. Economics Letters, 82(3), 377-384.

Damanpour, F., & Evan, W. M. (1984). Organizational innovation and performance: The problem of organizational lag. Administrative Science Quarterly, 29(3), 392-408.

Damanpour, F., Szabat, K. A., & Evan, W. M. (1989). The relationship between types of innovation and organizational performance. Journal of Management Studies, 26(6), 587-602.

Elenkov, D. S., & Manev, I. M. (2009). Senior expatriate leadership's effects on innovation and the role of cultural intelligence. Journal of World Business, 44(4), 357-369.

Hall, C. M., & Williams, A. M. (2020). Tourism and Innovation. Routledge.

Heeks, R., Foster, C., & Nugroho, Y. (2014). New models of inclusive innovation for development. Innovation and Development, 4(2), 175-185.

Hofstede, G. (1991). Cultures and Organizations: Software of the Mind. McGraw-Hill.

Jacobides, M. G., & Winter, S. G. (2005). The co-evolution of capabilities and transaction costs: Explaining the institutional structure of production. Strategic Management Journal, 26(5), 395-413.

Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. Journal of Business Research, 64(4), 408-417.

Jung, D. D., Wu, A., & Chow, C. W. (2008). Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation. The Leadership Quarterly, 19(5), 582-594.

Li, L. X. (2000). An analysis of sources of competitiveness and performance of Chinese manufacturers. International Journal of Operations & Production Management, 20(3), 299-315.

Makri, M., & Scandura, T. A. (2010). Exploring the effects of creative CEO leadership on innovation in high-technology firms. The Leadership Quarterly, 21(1), 75-88.

Martins, E. C., & Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. European Journal of Innovation Management, 6(1), 64-74.

OECD. (2018). Oslo Manual: Guidelines for Collecting, Reporting and Using Data on Innovation (4th ed.). OECD Publishing.

Pavitt, K. (2002). Innovating routines in the business firm: What corporate tasks should they be? Industrial and Corporate Change, 11(1), 117-133.

Prahalad, C. K., & Hamel, G. (1996). The core competence of the corporation. Harvard Business Review, 74(3), 79-91.

Schumpeter, J. A. (1934). The Theory of Economic Development. Harvard University Press.

Thompson, J. D. (1967). Organizations in Action: Social Science Bases of Administrative Theory. McGraw-Hill.

Twiss, B. C., & Goodridge, M. (1989). Managing Technology for Competitive Advantage: Integrating Technological and Organisational Development. Pitman.

West, M. A., Borrill, C. S., Dawson, J. F., Brodbeck, F., Shapiro, D. A., & Haward, B. (2003). Leadership clarity and team innovation in health care. The Leadership Quarterly, 14(4-5), 393-410. https://doi.org/10.1016/S1048-9843(03)00044-4

Asian Development Bank (ADB). (2021). Women's Entrepreneurship and Innovation in Asia and the Pacific. ADB.

United Nations Conference on Trade and Development (UNCTAD). (2022). Gender and Innovation Toolkit. United Nations.