

Strengthening Women's Role in the Tourism Village Economy: A MULTIPOL Analysis for Business Strategies in Penglipuran, a Model of Sustainable Tourism Village

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ABSTRACT

Women play a crucial role in the economic development of tourism villages, yet limited access to capital, skills, and institutional support continues to hinder their optimal contribution. Penglipuran Tourism Village is recognized as a model of sustainable tourism that provides space for women's participation, but strategies for their business development have not been systematically formulated. This study aims to formulate strategies for women's business development by considering actions, policies, and scenarios of individual and communal enterprises. A Multi-Criteria Decision Analysis (MCDA) approach using the MULTIPOL method was employed to evaluate the priority of actions toward policies, policies toward scenarios, as well as cross-level sensitivity. The findings reveal that at the action level, capital support, training programs, and marketing promotion are the main interventions. At the policy level, skills enhancement is more dominant in the individual scenario, while business support is more prominent in the communal scenario. Overall, three policies consistently prioritized are skills enhancement, business support, and product development. This study extends the application of MULTIPOL from environmental issues to a gender-based socio-economic context, focusing on women's empowerment in sustainable tourism villages. It also introduces an action–policy–scenario mapping that can serve as a reference for designing adaptive development strategies. The study highlights the need for adaptive strategies that integrate individual capacity building, institutional support, and product innovation according to business contexts. The results provide practical contributions for women's empowerment policies in tourism villages while broadening the application of MULTIPOL in gender-based socio-economic studies.

Keywords: Women Empowerment, Sustainable Tourism Village, Small Business Development, Multi-Criteria Decision Analysis (MCDA), MULTIPOL

INTRODUCTION

Rural tourism development should ideally not only promote economic growth but also strengthen inclusiveness, cultural preservation, and social resilience. Women hold a strategic role in this framework—not merely as labor, but also as entrepreneurs in culinary, handicraft, and culture-based service sectors. Women's involvement in tourism village enterprises has been proven to increase household income, foster economic diversification, and enhance community social capital (Scheyvens & van der Watt, 2021).

However, in Penglipuran Tourism Village, women's participation in tourism-related businesses remains limited. While they are active in village-based micro and small enterprises—such as traditional culinary production and handicrafts—they face multiple barriers. Limited access to capital, lack of entrepreneurial training, restricted marketing opportunities, and the dominance of institutional structures by male actors are the main obstacles to strengthening women's enterprises.

The gap between women's potential and the realization of their contribution implies that the benefits of tourism are not yet evenly distributed. If this condition persists, the risks of economic and social inequality will increase, and the quality of culture-based tourism is likely to decline. On the other hand, improving support for women's enterprises would generate dual benefits: enhancing household welfare and reinforcing the attractiveness of tourism that is inclusive and sustainable.

According to sustainable tourism mapping, the development of local financial institutions and entrepreneurship training has been shown to effectively empower local actors, particularly women (Pathways toward Transformation of Sustainable Rural Tourism, Central Java—MDPI, 2023). A study in Ciamis further revealed that structured community involvement in evaluating development alternatives strengthens both the legitimacy and relevance of policies (MDPI, 2023).

Based on these conditions, this study aims to formulate strategies for women's business development in Penglipuran Tourism Village using a Multi-Criteria Decision Analysis (MCDA) approach with the MULTIPOL method. This method enables the evaluation of alternative actions under various policy scenarios and identifies both robust and sensitive interventions. The findings are expected to serve as a foundation for designing local policies that are more inclusive, effective, and resilient to shifts in development orientation.

RESEARCH METHOD

This study employed an applied quantitative design using the Multi-Policy Multi-Criteria Analysis (MULTIPOL) approach to determine priority development actions under different policy scenarios. MULTIPOL was selected because it extends the function of conventional Multi-Criteria Decision Analysis (MCDA) by simultaneously analyzing multiple policy orientations, generating comparable rankings of actions, robustness profiles, and sensitivity maps (Herzberg et al., 2019; Shukla & Ono, 2024). This capability is highly relevant in the context of village development, which often involves diverse governance orientations.

The research site was a cultural tourism village that combines traditional governance systems with modern economic strategies. These characteristics require an analytical approach capable of balancing economic, social, environmental, and cultural preservation goals. The location was chosen due to its complex policy dynamics and the need to prioritize interventions that are adaptive to shifts in development orientation (Zhang et al., 2024).

Primary data were collected through structured questionnaires and Focus Group Discussions (FGDs) with local stakeholders, including community leaders, representatives of women's groups, tourism entrepreneurs, and village government officials. Respondents were purposively selected based on their knowledge of and involvement in village development planning. The elicitation process followed a participatory MCDA protocol to ensure that the definition of criteria and weighting reflected multiparty perspectives (Dean, 2022; Sisto et al., 2022).

The analysis began with the identification of evaluation criteria reflecting the multidimensional objectives of village development. Alternative development actions were formulated based on stakeholder input and policy documents. Each action was assessed against each criterion using a standardized 0–20 scale, allowing for the comparison of both qualitative and quantitative indicators (Suasih et al., 2025; Etxano & Eguiluz, 2021).

MULTIPOL was then applied to calculate the aggregate score of each action under each policy scenario. Scenarios were defined by different configurations of criterion weights, representing variations in policy orientation. Aggregate scores were obtained from the weighted average of action values across all criteria, normalized by the sum of weights (Maziotis & Senante, 2025).

The results of the MULTIPOL analysis include a ranked list of actions for each scenario, a sensitivity classification map showing the stability of rankings against weight changes, and robustness profiles identifying actions consistently ranked highly. These findings distinguish no-regrets actions—those worth implementing across policy conditions—from actions sensitive to specific policy priorities (Prieto-Jiménez et al., 2024; di Santo et al., 2025).

This approach, which integrates stakeholder participation and multi-scenario analysis, is designed to enhance transparency, accountability, and social legitimacy in setting development priorities and can be adapted to similar contexts in other regions.

The variables in the MULTIPOL analysis consist of criteria, scenarios, policies, and actions (Table 1).

Table 1. Identification of Criteria, Actions, Policies, and Scenarios

No	Criteria	Label	Weight
1	Income improvement	<i>income</i>	5
2	Competitive enhancement	<i>competitive</i>	4
3	Market share expansion	<i>marketshar</i>	5
4	Increase in women's group activities	<i>womangroup</i>	6
5	Environmental management	<i>organizad</i>	5
No	Action	Label	
1	Capital support	<i>capital</i>	
2	Equipment support	<i>equipment</i>	
3	Training programs	<i>training</i>	
4	Marketing promotion	<i>promotions</i>	
5	Licensing support	<i>licensing</i>	
6	Product development coaching	<i>coaching</i>	
7	<i>Pararem</i> (customary law) related to the environment	<i>pararem</i>	
No	Policy	Label	Weight
1	Business support	<i>business</i>	80
2	Skill enhancement programs	<i>skills</i>	85
3	Marketing programs	<i>market</i>	80
4	Product development programs	<i>product</i>	75
5	Environmental management programs	<i>environment</i>	85
No	Scenario	Label	Weight
1	Individual enterprises	<i>individu</i>	6
2	Communal enterprises	<i>communal</i>	6

Source: author's work (2025)

RESULTS AND DISCUSSION

Results of MULTIPOL Analysis

The MULTIPOL analysis was conducted using two policy scenarios that reflect different governance orientations in Penglipuran Village. The first scenario, individual enterprise orientation, places greater weight on income improvement, competitiveness enhancement, and market share expansion. The second scenario, communal enterprise orientation, emphasizes women's group empowerment and environmental management. These weighting differences enable the model to test how shifts in policy priorities influence the ranking of development actions.

The ranking results of development actions under each policy are presented in Table 2, while the ranking of policies under each scenario is presented in Table 3.

Table 2. Evaluation of Actions toward Policies

Label of Action	Label of Policy					Mean	St.dev	Rank
	<i>business</i>	<i>skills</i>	<i>market</i>	<i>product</i>	<i>environment</i>			
<i>capital</i>	14.1	14	14.3	14.7	11.6	13.7	1.1	1
<i>equipment</i>	7.8	7.7	7.7	7.8	6.3	7.4	0.6	6
<i>training</i>	12.9	12.9	12.4	12.9	10.3	12.2	1	2
<i>promotions</i>	10.8	10.6	12.5	12.6	8.8	11	1.4	3
<i>licensing</i>	8.1	7.7	8.1	7.9	7.3	7.8	0.3	5
<i>coaching</i>	11.1	11.6	11.1	11.6	9.3	10.9	0.9	4
<i>pararem</i>	5.5	5.1	4.3	3.8	7.2	5.2	1.2	7

Source: author's work (2025)

The results of the village development action evaluation using the MULTIPOL approach indicate that capital support, training programs, and marketing promotion occupy the top ranks in policy priorities. The high position of capital support highlights that access to financial assistance is the primary need for local entrepreneurs to expand production capacity and diversify their businesses. Training programs rank next, reflecting the importance of

enhancing both technical and managerial skills to improve product quality and strengthen competitiveness. Meanwhile, marketing promotion ranks third, underscoring that effective communication and promotion strategies are considered crucial to broaden market reach and increase the visibility of the tourism destination as well as local products. Collectively, these three actions illustrate a development trajectory that emphasizes strengthening community economic capacity and enhancing the competitiveness of community-based tourism.

Table 3. Evaluation of Policies toward Scenarios

Label of policy	Label of scenario		Mean	St.dev	Rank
	<i>individu</i>	<i>communal</i>			
<i>business</i>	22.2	20.5	21.4	0.9	2
<i>skills</i>	23	20.4	21.7	1.3	1
<i>market</i>	20	20	20	0	4
<i>product</i>	21.5	20.2	20.9	0.6	3
<i>environment</i>	16.5	18.9	17.7	1.2	5

Source: author's work (2025)

In the individual enterprise scenario, the most prioritized policy is skills enhancement, which underscores the importance of strengthening human resource capacity through mastery of technical, managerial, and entrepreneurial skills to support community business independence. Meanwhile, in the communal enterprise scenario, the more emphasized policy is business support, reflecting the priority of reinforcing collective business assistance and joint facilitation to sustain a community-based economy. Viewed more broadly across the overall analysis, the three most prominent policies are skills enhancement, business support, and product development. This finding indicates that village development strategies should not only focus on improving individual competencies but also require institutional business support and innovation in local product development. The combination of these three policies can complement one another in strengthening the competitiveness of the tourism village economy while ensuring social and environmental sustainability.

A clearer mapping of each action to policy and each policy to scenario is presented in Figure 1 and Figure 2.

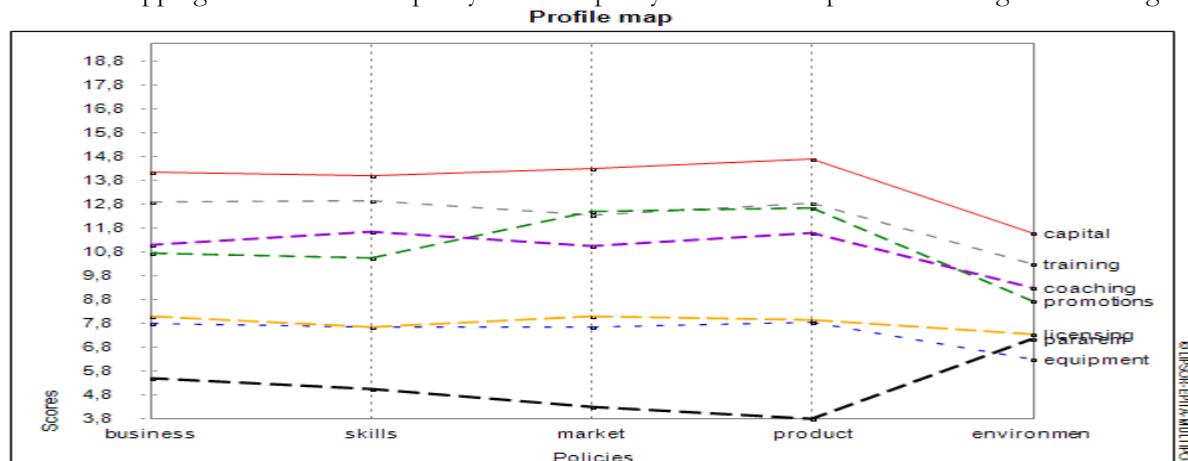


Figure 1. Profile map actions to policy

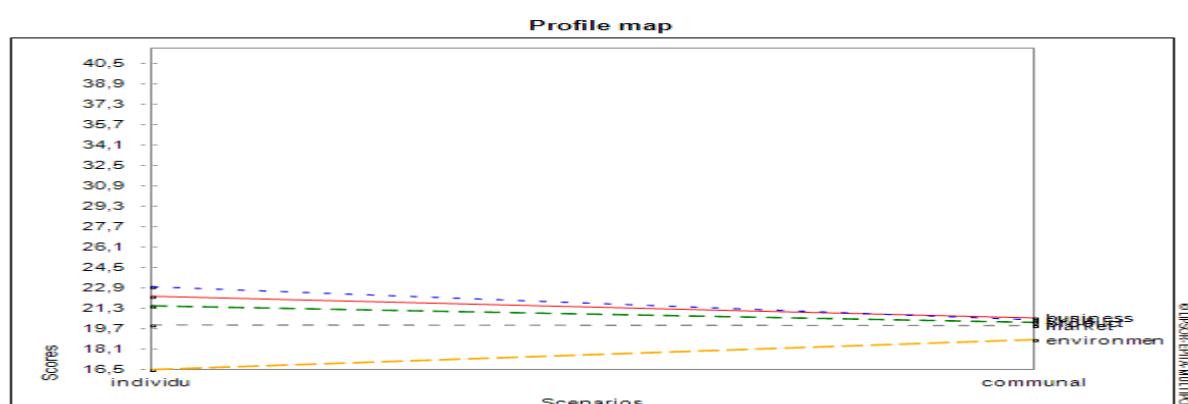


Figure 2. Profile map policy to scenario

Furthermore, based on Figure 1 and Figure 2, a comprehensive potential policy pathway for women's businesses in supporting Penglipuran Tourism Village can be formulated.

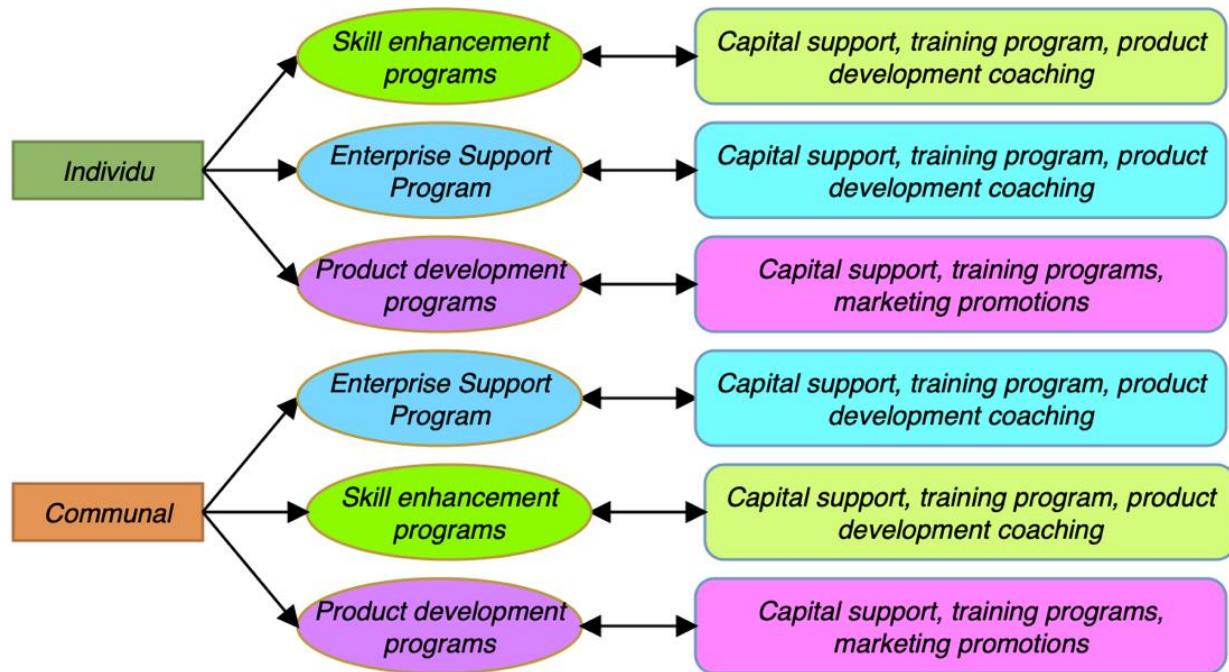


Figure 3. Potential path policy

Sensitivity of Actions and Policies in Women's Business Development

The results of the first sensitivity analysis demonstrate how development actions respond to changes in policy weights.

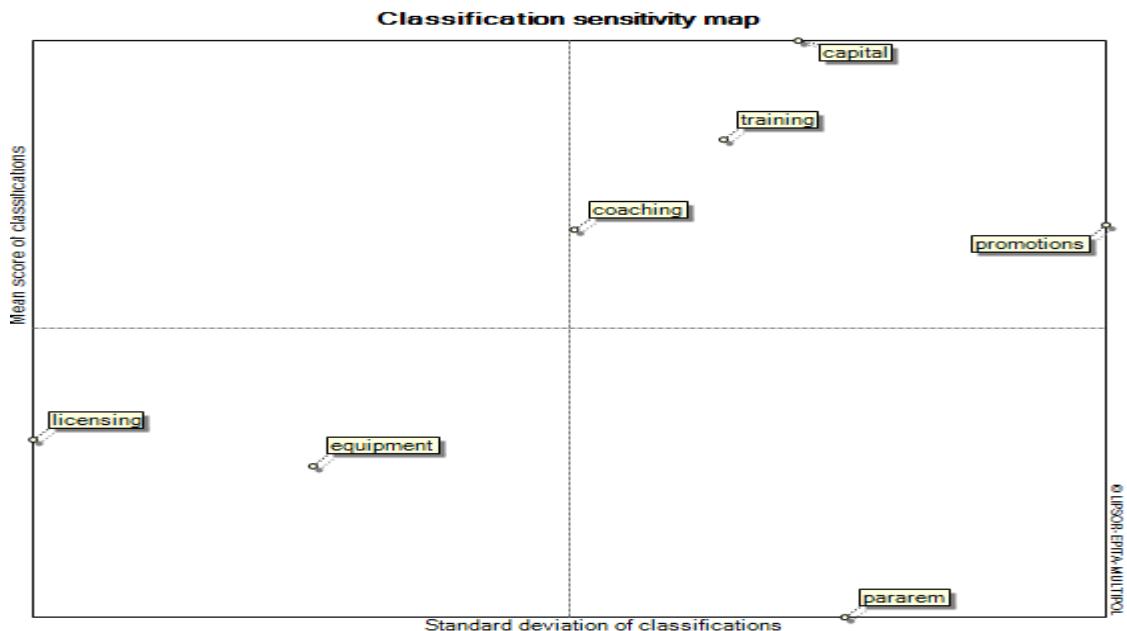


Figure 4. Sensitivity Map of the Evaluation Results of Actions Related to Policies

From Figure 4, it can be observed that several actions remain relatively stable despite shifts in policy weights. For instance, capital support consistently maintains a high ranking, indicating a low level of sensitivity to changes in policy orientation. In contrast, actions such as marketing promotion show considerable variation in ranking depending on which policy is prioritized. This suggests that promotion is sensitive and will yield maximum benefits only if supported by policies oriented toward product and market development. Meanwhile, training programs occupy a middle position, generally stable yet still showing minor variations when policy weights change. These findings highlight a mix of actions that can be considered stable and others that are adaptive, responding to policy shifts.

Subsequently, the sensitivity analysis at the policy-to-scenario level reveals a different pattern.

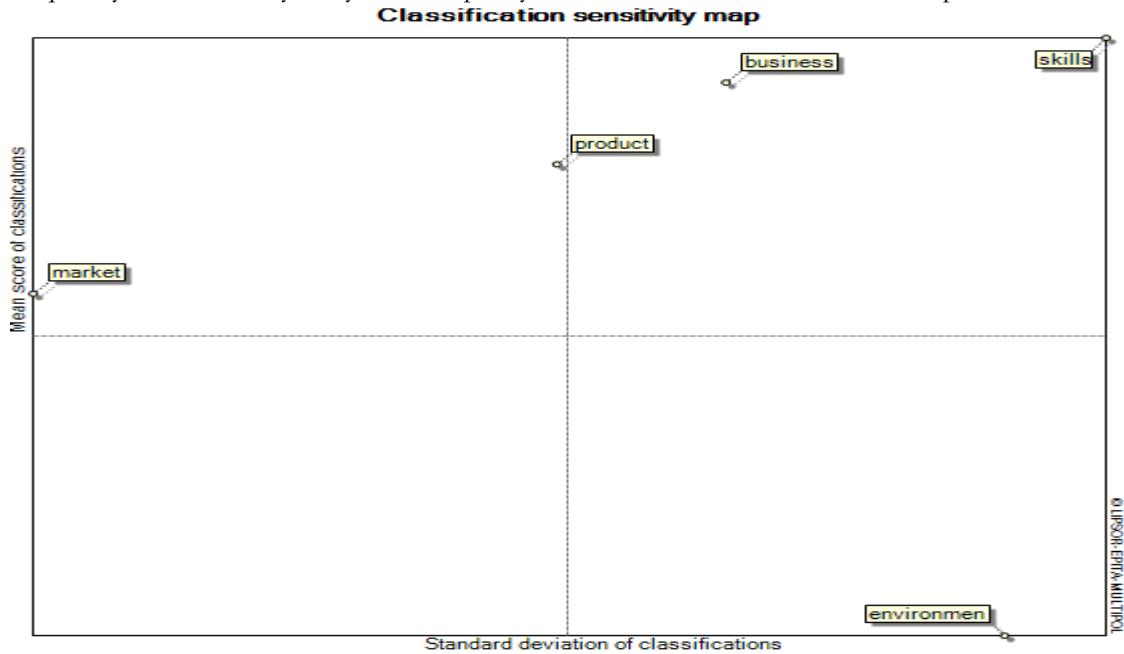


Figure 5. Sensitivity Map of the Evaluation Results of Policies Related to Scenarios

Figure 5 illustrates that in the individual enterprise scenario, the skills enhancement policy consistently occupies the top position. This emphasizes that in the context of individual enterprises, improving individual skills is the most critical factor for success. Conversely, in the communal enterprise scenario, the business support policy receives a higher ranking, highlighting the importance of institutional support and collective business facilities when a community-based economic orientation is prioritized. Overall, skills, business, and product development emerge as the three most prominent policies, although their ranking shifts depending on the scenario. Thus, the sensitivity of policies to scenarios underscores that strategies for women's business development in Penglipuran Tourism Village must be designed contextually, aligned with the individual and collective characteristics of the enterprises being developed.

DISCUSSION

The MULTIPOL analysis provides valuable insights into the priorities of actions and policies for women's business development in Penglipuran Tourism Village. The evaluation of actions against policies reveals that some interventions carry stronger support than others. Capital support emerged as the highest-ranked action. This is not surprising, as limited access to formal financial resources has long been identified as a structural barrier for women entrepreneurs, particularly in rural tourism sectors (Scheyvens & van der Watt, 2021). With sufficient capital, women can expand production capacity, improve service quality, and widen market access. Training programs were also highly prioritized, underscoring that enhancing entrepreneurial skills is a fundamental need that must be addressed. This finding aligns with Dean (2022), who emphasized that participatory training can strengthen local capabilities while also enhancing the legitimacy of development programs. Meanwhile, marketing promotion is another important action, though its ranking is more variable, suggesting that its effectiveness depends heavily on product and branding support. Zhang et al. (2024) similarly highlighted that rural tourism promotion is only effective when accompanied by product innovation capable of attracting new markets.

When the analysis shifts to the relationship between policies and scenarios, more complex patterns emerge. In the individual enterprise scenario, the skills enhancement policy dominates. This shows that individual entrepreneurs rely more on personal capacities to independently manage their businesses. Consistent with Jena and Dwivedi (2021), basic skills such as simple financial management, digital marketing, and product quality control are decisive factors in the success of women's rural enterprises. In contrast, in the communal enterprise scenario, the business support policy is more prominent. This is expected, as in collective contexts, institutional support, shared facilities, and equitable distribution of benefits matter more than individual skills. Di Santo et al. (2025) also confirmed that community-based development requires solid institutional support to ensure sustainability. Viewed holistically, the three consistently dominant policies across scenarios are skills, business, and product development.

This combination indicates that strategies for women's business development must balance individual capacity, institutional support, and product competitiveness.

The sensitivity analysis adds another layer of understanding of these dynamics. From the evaluation of action sensitivity toward policies, capital support proved relatively stable even when policy weights shifted. This means that capital interventions tend to remain a priority under almost any policy condition. This finding is consistent with literature emphasizing the importance of microfinance access in supporting women's entrepreneurship (Etxano & Eguiluz, 2021). By contrast, marketing promotion appeared highly sensitive: its ranking increased when product- and market-oriented policies were emphasized but decreased when skill- or institution-oriented policies took precedence. This pattern echoes Parlato and Pezzuolo (2025), who argued that rural tourism promotion strategies are highly contextual and depend on product readiness and institutional marketing support. Training programs occupy a middle ground: relatively consistent but showing minor variation as policy weights change. These findings reinforce the view that training is a cross-cutting need that remains relevant across contexts (Sisto et al., 2022).

Sensitivity is also evident at the policy-to-scenario level. In the individual scenario, skills enhancement remains dominant and relatively unaffected by shifts, whereas in the communal scenario, business support rises significantly. This shift illustrates that policy priorities are strongly influenced by the form of enterprise being developed. Vatankhah et al. (2024), through a bibliometric study, found that the application of multi-criteria methods in tourism often produces varied outcomes depending on context, particularly the distinction between individual and collective scales. Thus, the sensitivity of policies to scenarios in Penglipuran highlights that development strategies cannot be generic but must be tailored to the prevailing business form.

The implications of these findings for women's business development in Penglipuran Tourism Village point to the need for adaptive policy approaches. Capital support should be positioned as a foundational priority due to its relative stability across policies. Training programs can serve as a long-term strategy that remains consistently relevant. Marketing promotion, however, should be designed with greater flexibility, taking into account product readiness and market capacity. Likewise, the balance between skills enhancement and business support must align with the context of enterprises—whether predominantly individual or collective. In other words, the sensitivity of actions and policies should not be seen as a weakness, but rather as an opportunity to design more contextual and responsive development strategies.

From a theoretical perspective, this study reinforces the crucial role of Multi-Criteria Decision Analysis (MCDA), particularly the MULTIPOL method, in supporting complex decision-making within rural socio-economic settings. While MCDA has long been applied to issues such as environment, energy, and infrastructure (Ferla et al., 2024; Prieto-Jiménez et al., 2024; Maziotis & Senante, 2025), this research demonstrates that the method can also be effectively applied in the context of women's empowerment and tourism development. By evaluating both actions and policies while also considering sensitivity, MULTIPOL not only produces ranked priorities but also provides deeper insights into relevant policy dynamics. This strengthens the argument that MCDA is an essential tool for fostering more inclusive and sustainable tourism village development.

CONCLUSION

This study demonstrates that strategies for women's business development in Penglipuran Tourism Village should focus on three key policies: skills enhancement, business support, and product development. At the action level, capital support and training programs emerge as relatively stable priorities, while marketing promotion is more sensitive to policy changes. Scenario differences also matter: skills are more important in individual enterprises, whereas business support is more prominent in communal enterprises.

These findings highlight the importance of an adaptive approach: capital support and training can serve as foundational interventions, while promotion and other policies should be tailored to the specific scenario context. Practically, this provides guidance for local governments and tourism village managers to design more responsive women's empowerment strategies. From an academic perspective, this study expands the application of the MULTIPOL method, which has generally been employed in environmental and infrastructure sectors, into a gender-based socio-economic domain. The limitation of this research lies in its focus on a single village, suggesting that future studies could broaden the scope to include comparative cases across regions and explore other MCDA approaches.

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