

Empowering womenpreneurs in Madura spice tourism villages: synergy of green technology and digital society

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Abstract

Madura holds significant potential for developing wellness tourism based on local wisdom and green technology, yet the role of women as key drivers remains underrecognized. Although Madurese women contribute substantially to MSMEs, they face challenges such as limited access to resources, low participation in decision-making, and gender discrimination. In the spice tourism sector, innovations integrating green technology and the digital society are essential to support sustainability. This study addresses the gap in understanding the intersection of gender, green technology, and digitalization in Madura using the Harvard Gender Analysis framework, aiming to formulate strategies to empower womenpreneurs for inclusive and sustainable tourism development in spice tourism village. The methodology of this study employed a qualitative case study approach, incorporating semi-structured interviews, direct field observations, and thematic analysis. Key participants included women entrepreneurs, community leaders, and local stakeholders. The analysis focused on gender dynamics concerning access, participation, control, and benefits within the framework of gender and technology. The findings reveal that womenpreneurs significantly contribute to economic sustainability through product diversification and digital marketing. However, gender gaps persist, particularly in technology control and decision-making processes. While green technology enhances efficiency, digitalization often increases workloads, underscoring the need for gender-inclusive strategies. This study highlights the importance of integrating women's knowledge with sustainable practices through targeted communication strategies and capacity-building programs. The implications of this research emphasize the necessity for policies that support gender equality in technology adoption, sustainable tourism development, and the socio-economic empowerment of womenpreneurs in spice tourism villages.

Keywords

Womenpreneur, Green technology, Digital society, Spice tourism, Sustainable development

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Introduction

Madura is one of the ethnic groups in Indonesia with distinctive characteristics in knowledge, behavior, and culture [1]. The diversity of local wisdom that underlies their daily cultural behavior presents significant potential for developing wellness tourism as a sustainable form of tourism that supports green technology advancement [2]. Previous studies, such as [3], have identified Madura's potential as a health tourism destination, emphasizing the importance of product diversification to strengthen this potential amidst global environmental challenges.

In the context of green technology development, the role of Madurese women is crucial yet underexplored [4]. While Madurese women are known for their high work ethic and significant presence in Micro, Small, and Medium Enterprises (MSMEs), their contributions are often undervalued [5]. Data indicates that 44.29% of micro businesses and 10.28% of small businesses are managed by women [6]. Despite this, societal perceptions often view their involvement as a necessity rather than a form of self-actualization, leading to challenges such as limited access to resources and gender discrimination [7].

The gap in the current literature lies in the intersection of gender, green technology, and tourism development in Madura. While there is recognition of women's roles in MSMEs, there is insufficient analysis on how these roles can be expanded and integrated into sustainable tourism development, particularly in the spice tourism sector. For instance, research has shown that women's participation in sustainable tourism is essential for achieving gender equality and enhancing environmental decision-making processes [8], [9]. Furthermore, studies indicate that integrating gender perspectives into tourism marketing strategies can significantly impact sustainable development outcomes [10]. This study seeks to address this gap by exploring strategies to empower womenpreneurs through the synergy of green technology and digital society, thereby enhancing their participation in wellness tourism.

In regions like Sampang and Pamekasan, known for spice production and herbal tourism, the active involvement of women is essential for innovation and product diversification. However, their participation in sustainable tourism development remains limited. This study aims to design strategies that leverage women's unique knowledge and traditional practices to increase their role in developing wellness tourism destinations in Madura. By addressing the specific analysis gap, this research will contribute to more inclusive and sustainable tourism development, enhancing women's socio-economic empowerment in Madura.

Method

This study employs a qualitative constructivist research method. The selection of this strategy aligns with the research objective of developing a communication strategy model for the development of womenpreneurs in Madura's Spice Tourism, as an

integral part of efforts to strengthen the synergy between green technology and the digital society. This research is rooted in real-life experiences, which are formulated into models, principles, propositions, and general theories. Observations will be conducted on the Madurese community in the Sampang region. The location was selected based on its potential as a spice-producing village that can be developed into a spice tourism village supporting the creation of health tourism. Primary data collection will be carried out through observation and in-depth interviews. The data were analyzed using the Harvard Gender Analysis Model, focusing on: (1) Access: Women's opportunities to resources and information; (2) Participation: Involvement in decision-making processes; (3) Control: Authority over business operations; and (4) Benefits: Equitable distribution of economic and social advantages. The final stage involves drawing conclusions and designing a communication strategy for tourism in Madura.

Results and Discussion

The role of gender in Madura spice tourism

Madura, rich in spice heritage, is a promising destination for local wisdom-based tourism. With its unique cultural assets, Madura has the potential to emerge as a health tourism destination [11]. Wellness tourism represents a sustainable tourism option that aligns with the Sustainable Development Goals (SDGs) in Indonesia through the application of green technology. However, the development of health tourism destinations in Madura necessitates the active involvement of women as entrepreneurs, particularly in the context of strengthening green technology in the digital era [10]. Therefore, a communication strategy model is essential for the development of womenpreneurs in the Madura Spice Tourism Village, serving as a vital component in enhancing the synergy between green technology and the digital community.

Based on responses from 50 womenpreneurs in Sampang, analyzed through the Harvard Gender Analysis model, this study identified significant disparities in access, participation, control, and benefits for women: (1) Access: It was found that 65% of respondents lacked access to financial resources and modern technology training. As one participant stated, "We need training on how to package and market our herbal products, but the opportunities are very limited." (Mrs. R, 38 years old, Pamekasan). (2) Participation: The study revealed that women are underrepresented in decision-making forums related to tourism development, with only 30% actively participating. Nevertheless, women are the primary contributors to product innovation at the community level. (3) Control: The prevailing patriarchal culture in Sampang restricts women's control over business income, as decisions are often dominated by male family members. (4) Benefits: Despite their significant contributions, only 40% of female entrepreneurs derive direct economic benefits from their involvement in tourism activities.

Womenpreneurs face numerous obstacles in actively engaging with green technology, including limited access to financial resources, lack of networks and support, educational and skills gaps, gender discrimination, and unsupportive policy regulations. To overcome these challenges, collaborative efforts from the government, financial institutions, and society are essential to create a supportive and inclusive environment for women entrepreneurs in the eco-friendly technology sector. This includes financial support, skills training, promotion of gender equality, and policy changes that foster environmentally friendly innovation.

The lack of access, participation, control, and benefits experienced by womenpreneurs in Sampang underscores the necessity of empowering women in Madura. Several initiatives involving women in Rempah Village can be implemented to promote green technology. These initiatives include: (1) Utilization of Local Resources: Womenpreneurs in the spice village can harness local resources, including spice plants and other crops, to develop environmentally friendly products and technologies. Additionally, utilizing agricultural waste, such as underused plant parts, can yield value-added products like organic fertilizers or raw materials for renewable energy; (2) Eco-Friendly Technology Innovation: Training womenpreneurs in eco-friendly technologies, such as organic waste processing and renewable energy solutions, is crucial. Developing technologies for processing and recycling agricultural waste into fertilizers or biofuels can mitigate environmental impacts; (3) Training and Education: Accessible training and education on environmentally friendly technology should be provided to womenpreneurs. This will enhance their understanding of integrating these innovations into their business activities. Capacity-building initiatives through workshops on sustainability principles and the application of eco-friendly technologies are essential; (4) Development of Eco-Friendly Products: Womenpreneurs should be trained to produce eco-friendly products, such as biodegradable packaging and organic goods. Innovations in using natural raw materials and sustainable production technologies can help reduce negative environmental impacts; (5) Social and Economic Impact: The initiatives for womenpreneurs in the spice village should focus on both environmental and social-economic impacts, such as increasing income and improving the well-being of the local community. Women's involvement in green technology innovation positively contributes to local empowerment and enhances the quality of life in the community. By integrating these activities, womenpreneurs can significantly contribute to sustainable development while preserving and advancing the environmental and economic sustainability of their region.

In today's digital society, empowering womenpreneurs also requires attention to the rapid evolution of digital information technology. Womenpreneurs can be trained to utilize social media strategically to raise awareness about eco-friendly technology. Several strategies must be implemented to enable womenpreneurs to build effective social media campaigns that promote eco-friendly technology and encourage community participation.

Development strategies for womenpreneurs in the synergy of green technology and the digital society

The analysis indicates that the target group consists of women in spice-producing villages, particularly members of the Family Welfare Program and wives of spice farmer group members in Sampang and Pamekasan Regencies. This informative approach will be facilitated by successful women entrepreneurs, business consultants, and entrepreneurial practitioners who act as agents of change. The goal of this strategy is to establish sustainable long-term communication strategies, along with guidelines and directions for developing creative messages. An effective communication strategy must be clear and straightforward, focusing on a few key ideas and directions. The information aspect of the strategy comprises advocacy, communication, and social mobilization, which are interconnected. The design of the Womenpreneur Development Strategy, based on the unique knowledge of women in Madura, can be implemented through several approaches, including:

(1) Training and Skill Development: Womenpreneurs in Madura require training to enhance their business management skills, including knowledge of information technology and digital marketing. The training and development communication strategies to be implemented include: (a) Socialization and Direct Training: This will focus on the benefits and opportunities of entrepreneurship for PKK mothers and wives of spice farmer group members, serving as a form of economic empowerment for Madura women. Training will be conducted through direct lectures to the community, utilizing religious activities, community organization events, and regular meetings of PKK female members and wives of spice farmer group members. It is advisable to combine successful female entrepreneurs, business consultants, and entrepreneurial practitioners as speakers, using a mix of Indonesian and Madurese languages in informal settings to ensure the message is easily understood; (b) Formation of a Communication Team: This team will consist of women with knowledge and experience in developing health tourism destinations in Madura, serving as a reliable source of information for the media, business operators, and the community; (c) Content Creation: Educational and inspiring content should be developed to encourage women to participate in health tourism development in Madura. This content can take the form of articles, videos, and infographics that highlight the potential and challenges of developing health tourism destinations; (d) Workshops and Discussions: Organizing events that involve women with expertise in health tourism development will provide opportunities to share experiences, knowledge, and ideas; (d) Online Platform Development: An online platform can facilitate women interested in participating in health tourism development, serving as a discussion forum or mobile application to connect and collaborate.

(2) Collaboration and Partnership: Womenpreneurs in Madura should collaborate with other business actors, such as hotels, restaurants, spas, and souvenir shops. Additionally, partnerships with policymakers, including government entities, are crucial.

Collaborative efforts with stakeholders, including the government, private sector, and local communities, are vital for enhancing women's roles in sustainable tourism development. This can be achieved through partnerships and networks that encourage women's participation in decision-making processes related to tourism policy development. Involving women in planning and implementing health tourism programs can lead to more inclusive and responsive initiatives. Advocacy strategies will be employed to influence policymakers, including sub-district heads, village heads, and Family Welfare Program representatives, to engage the community and support programs for PKK mothers and wives of spice farmer group members.

(3) Promotion and Marketing: Womenpreneurs in Madura need to actively promote and market wellness tourism destinations through social media and a dedicated website. This promotion can reach women interested in participating in health tourism development. Collaborating with local and national media can also enhance coverage.

(4) Product and Service Development: Womenpreneurs should develop diverse and high-quality health tourism products and services to enhance the tourist experience. This development can be based on the unique knowledge of Madurese women regarding natural and traditional ingredients used in alternative medicine and spa products.

(5) Local Community Involvement: Womenpreneurs should engage the local community in developing Madura's health tourism destinations. Outreach can be conducted through social mobilization strategies, actively fostering community commitment to support the empowerment of PKK mothers and wives of spice farmer group members. The social mobilization efforts include: (a) Market Gathering and Exhibitions: Organizing events to showcase creative business products by PKK mothers and wives of spice farmer group members, incorporating engaging activities like quizzes or games to foster community involvement and ownership of these products; (b) Inter-Regional Competitions: Hosting competitions related to creative business products to promote the initiatives of PKK mothers and wives of spice farmer group members while enhancing their creativity and product quality.

This social mobilization strategy builds on the informational approach through direct communication (lectures), aiming to encourage the community to apply the information gained. This aligns with behavior change theories, such as the organismic stimulus theory and the Theory of Reasoned Action (TRA), which connects behavior with normative beliefs and emphasizes the importance of intention in driving action.

Conclusion

The development of spice tourism based on local wisdom in Madura holds significant potential to support wellness tourism and sustainable development in alignment with the SDGs. This research highlights the strategic role of womenpreneurs in integrating green technology and the digital community, while also addressing various obstacles

related to access, participation, control, and benefits. Gender disparities, limited access to financial resources and technology training, and the influence of patriarchal culture are the primary challenges hindering women's empowerment in this sector. Through the Harvard Gender Analysis model, it is evident that womenpreneurs require communication strategies that support their empowerment, encompassing training, collaboration, promotion, product development, and local community engagement. These strategies include training in environmentally friendly technology, strengthening partnership networks, digital-based promotion, and social mobilization that actively involves the local community. The informational approach serves as the foundation for educating and mobilizing the community, focusing on behavior change based on stimulus-organism theory and the Theory of Reasoned Action. In the context of Madura, utilizing language and communication methods that resonate with local culture is crucial for the effectiveness of these strategies. By empowering womenpreneurs through training, cross-sector collaboration, and policy support, women can become agents of change in developing health tourism based on local wisdom, contributing to environmental, economic, and social sustainability in Madura.

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