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Educational ecotourism as a medium for environmental character building: Lessons from a honey-picking experience

Wahyu Surakusumah[1,*], Halisa[1], Abdul Faqih Fajar Sidik[1], Chersa Steffany Polandos[1]
[1] *Department of Biology, Faculty of Biology, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia.*
*Correspondence: wahyu_bioupi@upi.edu

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ABSTRACT

Background: This study aims to analyze the feasibility of honeybee cultivation attractions as an object for developing educational ecotourism and to formulate strategies for developing the "Honey Picking" educational tourism package Taman Hutan Raya Ir. H. Djuanda, Bandung. **Methods:** This research employed a descriptive method with a qualitative approach. Primary data were obtained through observation, in-depth interviews, and questionnaires distributed to visitors using purposive sampling, while secondary data were gathered from literature reviews and relevant supporting documents. Data analysis was carried out using the SWOT method to identify internal and external factors influencing the development of the tourism package. **Findings:** The results show that the honey-picking educational ecotourism program has strong internal strengths and favorable external conditions, with IFAS and EFAS scores of 3.03 and 2.89, placing it in Quadrant I. Interactive educational activities, natural attractions, accessibility, and community support drive growth, while improvements in digital promotion, management capacity, and safety standards are required to ensure sustainable development. **Conclusion:** The study concludes that the "Honey Picking" educational ecotourism package holds strong potential to be developed as a sustainable conservation-based educational tourism model. This activity not only increases visitors' knowledge and environmental awareness but also provides economic and social benefits for local communities and supports biodiversity conservation efforts in the Taman Hutan Raya Ir. H. Djuanda Grand Forest Park area, Bandung. **Novelty/Originality of this article:** The novelty of this study lies in its development of an interactive "Honey Picking" edu-ecotourism concept based on honeybee cultivation, which has not previously been explored in the context of Taman Hutan Raya Ir. H. Djuanda. Additionally, the study offers a strategic, data-driven framework using SWOT analysis to guide the creation of sustainable conservation-based educational tourism packages.

KEYWORDS: Taman Hutan Raya Ir. H. Djuanda; educational ecotourism; honeybee cultivation; sustainable tourism development; SWOT.

1. Introduction

Tourism has become a strategic sector in both national and regional development, particularly in countries with rich natural and cultural resources such as Indonesia. Beyond its role as a driver of economic growth and foreign exchange earnings, tourism increasingly functions as a platform for environmental education, conservation, and community empowerment. Prior to the COVID-19 pandemic, domestic tourism accounted for a substantial proportion of total tourism expenditure and played a crucial role in supporting regional economies (OECD, 2022). In the post-pandemic era, there has been a paradigm shift

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toward more sustainable and responsible tourism practices, emphasizing environmental protection and socio-cultural sustainability (Gössling et al., 2021; UNWTO, 2023a). In this context, ecotourism and educational tourism have emerged as important alternatives to conventional mass tourism. Ecotourism promotes environmentally responsible travel to natural areas while contributing to conservation and local community well-being (Fennell, 2021; Das & Chatterjee, 2020). Meanwhile, educational tourism integrates learning experiences into recreational activities, enabling visitors to gain knowledge and awareness about environmental issues. The concept of educational ecotourism combines these two approaches by integrating recreation, environmental education, and conservation into a single tourism framework (Ballantyne & Packer, 2021; Ardoin et al., 2020).

Previous studies have demonstrated that ecotourism activities incorporating environmental education can significantly enhance visitors' ecological awareness and encourage pro-environmental behavior (Ballantyne & Packer, 2021). Furthermore, community-based ecotourism has been shown to provide dual benefits by improving local livelihoods while ensuring sustainable natural resource management (Stone et al., 2018; Su et al., 2019). The integration of educational components, community participation, and sustainable resource utilization is therefore considered a key strategy in developing competitive and sustainable tourism destinations. From a broader development perspective, sustainable tourism contributes directly to the achievement of the Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth), Goal 11 (Sustainable Cities and Communities), and Goal 15 (Life on Land). Environment-based educational tourism serves as an effective medium to foster ecological awareness and environmental stewardship among visitors. As highlighted by Ardoin et al. (2020), environmental education within tourism contexts can promote both cognitive and behavioral changes while strengthening connections between communities and their natural environment.

Bandung is one of Indonesia's leading tourism destinations, offering diverse attractions ranging from natural landscapes and cultural heritage to culinary and creative industries. The city is widely recognized as a creative hub that blends traditional cultural values with modern urban development. Studies indicate that tourist behavior in Bandung tends to favor experiential tourism, particularly activities that involve direct interaction with nature and local culture (Gössling et al., 2021; UNWTO, 2023a). This trend provides an opportunity to develop eco-friendly tourism models that leverage local natural and cultural resources. One area with strong potential for educational ecotourism development is the Taman Hutan Raya Ir. H. Djuanda, which covers approximately 526.98 hectares of protected forest with high biodiversity. This area functions not only as a conservation site but also as a public recreational space and a natural laboratory for environmental learning. Visitors can explore tropical forest ecosystems, observe endemic flora and fauna, and understand the ecological functions of forests in maintaining environmental balance (Fennell, 2021; Ardoin et al., 2020).

Despite its considerable potential, challenges remain in optimizing the development of ecotourism in Taman Hutan Raya Ir. H. Djuanda, particularly in terms of community participation. Local community involvement is a critical factor in the success of sustainable tourism initiatives, as communities act as key stakeholders in managing resources, delivering services, and preserving the environment (Su et al., 2019). Therefore, tourism development strategies in this area should integrate ecological potential with educational approaches and community empowerment. One promising approach is the development of educational ecotourism based on honeybee (*Apis mellifera*) cultivation. Honeybees play a vital ecological role as pollinators and contribute significantly to biodiversity conservation and agricultural productivity. In addition, they produce economically valuable products such as honey, propolis, and beeswax (Potts et al., 2016; Dicks et al., 2021). The cultivation of Apis mellifera has strong prospects due to its high productivity and ability to produce high-quality honey (Requier et al., 2020). Moreover, beekeeping can serve as an alternative livelihood for communities living around forest areas while supporting ecosystem sustainability through pollination services.

The development of a "Honey Picking" educational ecotourism package in Taman Hutan Raya Ir. H. Djuanda represents an innovative model that integrates environmental education, conservation, and community-based economic activities. Through this program, visitors not only experience natural attractions but also engage in interactive learning activities, such as understanding the life cycle of honeybees, observing honey harvesting processes, and practicing basic beekeeping techniques. Such experiential learning activities are effective in enhancing environmental literacy and fostering appreciation for biodiversity (Ballantyne & Packer, 2021). In addition to ecological benefits, bee-based ecotourism also has significant economic potential. Community involvement in tourism activities can promote income diversification, create employment opportunities, and encourage the development of local products such as honey, beeswax, and related souvenirs (Stone et al., 2018). This approach can reduce dependence on environmentally harmful practices while supporting sustainable livelihoods and strengthening local economies.

Given these potentials, a comprehensive assessment is needed to evaluate the feasibility and development of honeybee-based educational ecotourism in Taman Hutan Raya Ir. H. Djuanda. This study aims to assess the feasibility of honeybee (*Apis mellifera*) cultivation as an ecotourism attraction, design an educational and sustainable ecotourism package based on beekeeping activities and analyze the potential contribution of "Honey Picking" tourism in enhancing public awareness of bee conservation and environmental sustainability. This research is expected to contribute to the development of conservation-based educational ecotourism models that integrate environmental education, community empowerment, and sustainable forest management.

2. Methods

2.1 Research design and study site

This study employed a descriptive research method with a qualitative approach to explore the potential development of the "Honey Picking" educational ecotourism package at Taman Hutan Raya Ir. H. Djuanda, Bandung. The qualitative approach was chosen because it enables an in-depth understanding of complex social phenomena, particularly those related to stakeholder perceptions, visitor experiences, and community participation in ecotourism activities. This approach allows researchers to interpret social realities holistically and contextually, making it highly relevant for tourism studies that emphasize human interaction and environmental context (Creswell & Poth, 2021; Braun & Clarke, 2021). The descriptive method was applied to systematically examine existing conditions without manipulating variables, focusing on identifying patterns and characteristics of the tourism system (Aspers & Corte, 2019).

The research was conducted at Taman Hutan Raya Ir. H. Djuanda, located in Cimenyan District, Bandung, West Java, Indonesia. The site was selected purposively due to its function as a conservation area that integrates environmental education with ecotourism activities, particularly through honeybee (*Apis mellifera*) cultivation. Data collection was carried out over a two-month period, from April to May 2025, which coincided with a relatively high level of tourist activity and favorable environmental conditions, allowing for optimal observation of tourism operations and visitor engagement.

2.2 Data collection and sampling

This study utilized both primary and secondary data sources to ensure a comprehensive understanding of the research problem. Primary data were obtained through direct observation, in-depth interviews, and questionnaires administered to visitors. Observations were conducted to examine the physical condition of the tourism site, the availability and quality of facilities, and the interactions among visitors, managers, and local communities. In-depth semi-structured interviews were carried out with key informants, including park managers, tour guides, and local community members involved

in ecotourism activities. These interviews aimed to gather detailed information on tourism management practices, levels of community participation, and challenges encountered in developing the tourism attraction. In addition, questionnaires were distributed to visitors who had participated in the "Honey Picking" activity. The questionnaire employed a four-point Likert scale to assess the feasibility of the tourism attraction in terms of attractiveness, accessibility, facilities, safety, and educational value.

Secondary data were collected from various relevant sources, including official reports from the Forestry Office and Tourism Office, Taman Hutan Raya Ir. H. Djuanda management documents, and supporting materials such as visitor statistics, maps, and conservation planning documents. Scientific literature, including journal articles and academic publications on ecotourism, environmental education, and apiculture, was also reviewed to support data interpretation and strengthen the theoretical framework of the study. The sampling technique used in this study was purposive sampling, in which respondents were selected based on their relevance to the research objectives. The participants included tourists who had direct experience with the "Honey Picking" activity, tourism managers, and local community members involved in tourism operations or the production and sale of bee-related products. The number of respondents was determined based on the principle of data saturation, where data collection continued until no new significant information emerged (Guest et al., 2020; Saunders et al., 2018).

Data collection was carried out using four main techniques, namely observation, in-depth interviews, questionnaires, and literature review. Observation was used to document the actual conditions of the tourism site and identify elements that support educational activities. In-depth interviews provided insights into participants' perceptions and experiences regarding the implementation of honeybee-based educational tourism. Questionnaires were used to obtain visitor evaluations of the tourism experience, while the literature review supported the development of a theoretical and conceptual understanding of the study.

2.3 Data analysis and program design

Data analysis was conducted in two stages. First, qualitative descriptive analysis was applied to interpret data obtained from observations, interviews, and questionnaires. This process involved data reduction, coding, categorization, and interpretation to identify key themes and patterns related to tourism potential, management practices, and community involvement (Braun & Clarke, 2021). This stage aimed to provide a comprehensive description of the existing conditions and the role of various stakeholders in supporting educational ecotourism development. Second, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was conducted to formulate development strategies for the "Honey Picking" ecotourism package.

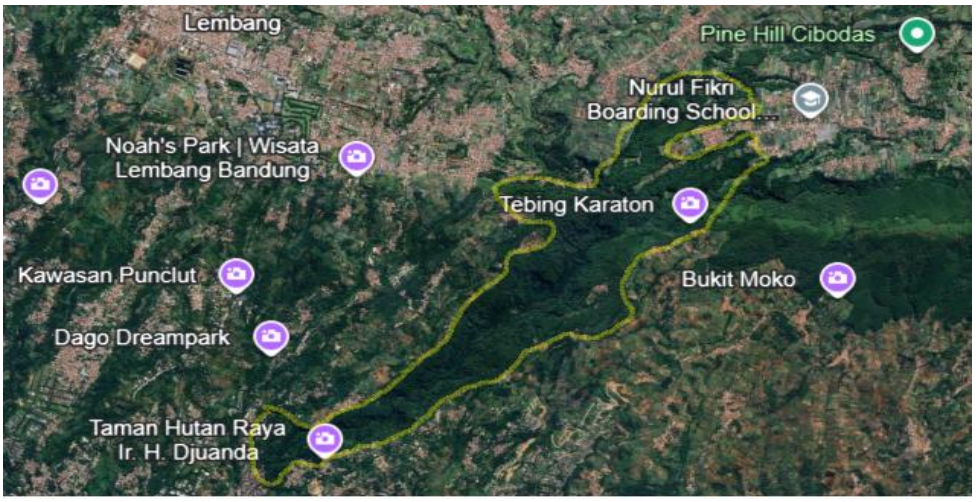

Fig. 1. Research location

This analysis involved identifying internal and external factors that influence tourism development, followed by the preparation of Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) matrices. Each factor was assigned a weight and rating to determine its relative importance, and total scores were calculated to identify the strategic position within the SWOT matrix (Helms & Nixon, 2020; Phadermrod et al., 2019). Based on this analysis, strategic recommendations were developed using four alternative approaches: Strength–Opportunity (SO), Weakness–Opportunity (WO), Strength–Threat (ST), and Weakness–Threat (WT).

Based on the findings of the analysis, the "Honey Picking" educational ecotourism package was designed using an experiential learning approach, which emphasizes learning through direct experience (Kolb, 2021). The program includes activities such as introducing visitors to the biology and ecological role of honeybees, training in beekeeping techniques from hive preparation to honey harvesting, and participation in educational attractions such as the "SineLebah" audiovisual session. Visitors are also given the opportunity to engage in hands-on honey harvesting and to explore bee-based products produced by the local community. This integrated approach is intended to provide both recreational and educational value while fostering environmental awareness and appreciation for biodiversity (Ballantyne & Packer, 2021). All activities were systematically organized into a structured sequence to ensure a coherent and meaningful visitor experience. All activities were structured in a unified sequence, as illustrated in Figure 2, which depicts the concept and stages of the "Honey Picking" educational ecotourism package.

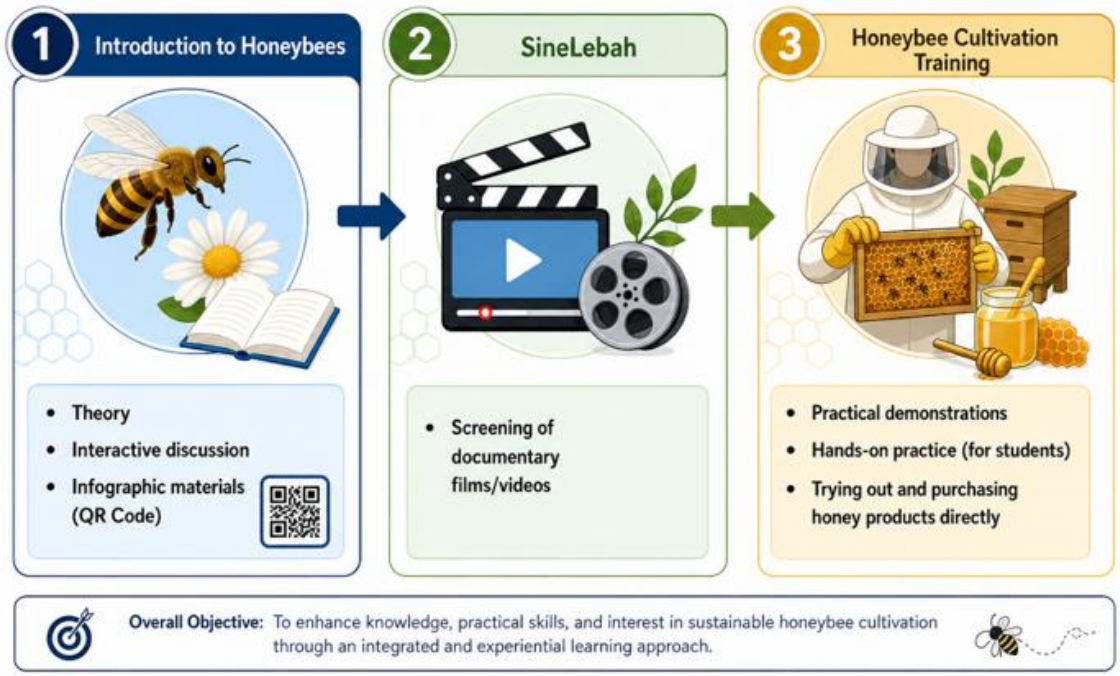

Fig. 2. Integrated honeybee education and cultivation program: A three stage approach combining theoritical learning, multiple media support and handson training

3. Results and Discussion

3.1 Analysis of internal and external environmental factors

The evaluation of the SWOT analysis results at Taman Hutan Raya Ir. H. Djuanda Bandung includes an assessment based on strengths, weaknesses, opportunities, and threats. The purpose of the SWOT analysis evaluation is to identify the strengths, weaknesses, opportunities, and threats faced by the site. Through this analysis, we can understand the strengths and weaknesses of the eco-tourism package at Tahura Bandung as a medium for educational honey bee cultivation, as well as the opportunities that can

support its development and the potential threats it may encounter. Internal analysis will highlight the strengths and weaknesses, while external analysis will identify the opportunities and threats for this tourist destination. Based on the analysis of internal and external environmental factors, honey bee ecotourism with the "Honey Picking" educational package demonstrates strong potential for development as a sustainable tourism destination. This finding aligns with the growing concept of api-tourism, which integrates environmental conservation, local economic development, and educational tourism experiences (Topal et al., 2021).

Table 1. Internal environmental factors

Strength	Weaknesses
The "Honey Picking" educational eco-tourism package provides an interactive and engaging activity experience. The package offers an attraction in the form of the surrounding natural beauty. A nearby location accessible by private vehicle with adequate roads makes it easy for tourists to visit. Strategic location close to public facilities. A large cultivation area. Adequate infrastructure. Affordable entrance ticket prices.	Promotion is still limited. Limited human resource capacity in managing the tourist site. Tourist site management is not yet optimal.

From the internal perspective, the main strength lies in the uniqueness of the tourism product, which combines education and direct experience through honey harvesting activities. Such experiential tourism has been shown to significantly enhance visitor satisfaction and destination loyalty, particularly when environmental values are incorporated into the tourism experience (Abdullah et al., 2025). In addition, the natural landscape surrounding the site strengthens its attractiveness as a nature-based tourism destination. Accessibility, strategic location, adequate infrastructure, and affordable entrance fees further contribute to its competitive advantage in attracting a wide range of visitors, including families and students.

Table 2. External environmental factors

Opportunities	Threats
Increasing number of tourists visiting the "Honey Picking" educational eco-tourism package, attracted by the surrounding natural beauty. Full support from the local community. Online media to support the promotion of the educational eco-tourism package. Strategic location of the tourist site, frequented by visitors traveling to other attractions.	Many competitors offering similar educational eco-tourism concepts. Tourists' perceptions regarding the comfort and safety of the destination.

However, several internal weaknesses may hinder optimal development. Limited promotional activities reduce the visibility of the destination, while insufficient human resource capacity affects service quality and overall management effectiveness. These limitations may ultimately influence visitor satisfaction and the sustainability of the tourism operation. From the external perspective, significant opportunities exist. The increasing global demand for ecotourism, particularly tourism that emphasizes education, conservation, and authentic experiences, provides a favorable context for the development of honey bee ecotourism. Community support also plays a crucial role in ensuring sustainable tourism development. Furthermore, the rapid growth of digital media offers cost-effective and far-reaching promotional channels. The strategic location of the site along tourist routes also creates opportunities to attract passing visitors.

In addition, the integration of beekeeping into tourism activities provides economic and environmental benefits. Beekeeping has been identified as a valuable non-timber forest

product that contributes to local livelihoods, biodiversity conservation, and environmental sustainability (Potts et al., 2016; Requier et al., 2020). Similar concepts, such as meliponitourism, demonstrate how bee-based tourism can enhance community income while promoting ecological awareness (Topal et al., 2021). Despite these opportunities, several threats must be addressed. The emergence of competitors offering similar ecotourism concepts requires the destination to develop strong differentiation strategies. Moreover, tourists' perceptions of safety and comfort, particularly regarding interactions with bees, remain critical factors influencing visitation decisions. Therefore, proper safety measures and clear operational procedures are essential to build trust and ensure positive visitor experiences. Overall, honey bee ecotourism holds substantial development potential. However, maximizing this potential requires strategic efforts in digital marketing, human resource development, and professional destination management. Equally important are service quality improvement and safety assurance, which are essential to enhance competitiveness and ensure long-term sustainability.

3.1.1 Internal strategic factors analysis summary (IFAS)

The EFAS analysis involves assigning weights and ratings to indicators that influence the internal environmental factors of the tourism site, consisting of Strengths and Weaknesses, in the development of the "Honey Picking" educational eco-tourism package. The IFAS analysis result, with a total weighted score of 3.03, indicates that the internal condition of honey bee ecotourism at Taman Hutan Raya Ir. H. Djuanda is categorized as strong. This suggests that the destination possesses sufficient internal capacity to support sustainable tourism development. The dominance of strength factors (2.187) over weaknesses (0.844) confirms that the existing advantages can serve as the primary drivers of development.

The highest contributing strength is the "Honey Picking" educational ecotourism package, which reflects the importance of experiential tourism. This finding is consistent with recent ecotourism studies emphasizing that direct engagement and hands-on activities significantly enhance tourist experience and satisfaction. Furthermore, api-tourism has been identified as an emerging niche that integrates education, culture, and sustainable resource utilization, making it highly attractive to modern tourists seeking meaningful experiences (Topal et al., 2021). Natural beauty, as another dominant strength, reinforces the ecological value of the destination. Ecotourism is strongly associated with natural landscapes and biodiversity, which are key elements in attracting environmentally conscious tourists (Buckley, 2009; Liu et al., 2012). In this context, the forest ecosystem of Taman Hutan Raya Ir. H. Djuanda provides a significant comparative advantage.

Accessibility, strategic location, and adequate infrastructure also contribute positively to the IFAS score. These factors are crucial in shaping tourist convenience and destination competitiveness. Previous research highlights that accessibility and supporting facilities are essential determinants of visitor satisfaction and revisit intention in ecotourism destinations. However, several weaknesses remain critical. Limited human resource capacity and suboptimal management indicate that institutional and operational aspects require improvement. This aligns with findings that ineffective management and lack of professional skills can hinder the sustainability of ecotourism development, particularly in emerging destinations (Helms & Nixon, 2020). Additionally, limited promotion suggests underutilization of digital marketing opportunities, which are increasingly important in modern tourism development.

From a broader perspective, honey bee–based ecotourism not only offers tourism value but also contributes to environmental sustainability and local economic development. Bee-related tourism activities, including honey harvesting and educational programs, are recognized as part of sustainable tourism innovations that support biodiversity conservation and community livelihoods (Topal et al., 2021). In conclusion, the IFAS analysis demonstrates that the internal strategic position of honey bee ecotourism at Taman Hutan Raya Ir. H. Djuanda is strong and promising. Nevertheless, strengthening human

resources, improving management systems, and enhancing promotional strategies are essential to fully leverage these strengths and ensure long-term sustainability.

Table 3. Internal strategic factors analysis summary (IFAS)

No.	Internal strategic factors	Weight	Rating	Rating X Weight
	Strength			
1	The "Honey Picking" educational eco-tourism package provides an interactive and engaging activity experience.	0.13	3.75	0.487
2	The package offers an attraction in the form of the surrounding natural beauty.	0.13	3.70	0.481
3	A nearby location accessible by private vehicle with adequate roads makes it easy for tourists to visit.	0.08	3.40	0.272
4	Strategic location close to public facilities.	0.08	3.50	0.280
5	A large cultivation area.	0.04	3.35	0.134
6	Adequate infrastructure.	0.08	3.40	0.272
7	Affordable entrance ticket prices.	0.08	3.27	0.261
	Sub total	0.62		2.187
	Weaknesses			
1	Limited promotion	0.08	2.10	0.168
2	Tourist site management is not yet optimal	0.13	2.50	0.325
3	Limited human resource capacity in managing the tourist site	0.13	2.70	0.351
	Sub total	0.34		0.844
	Total	1.00		3.03

3.1.2 External strategic factors analysis summary (EFAS)

The EFAS analysis involves assigning weights and ratings to indicators that influence the external environmental factors of the tourism site, consisting of Opportunities and Threats, in the development of the "Honey Picking" educational eco-tourism package. The external environmental factor analysis aims to identify opportunities and threats from outside the organization that may influence the success of the "Honey Picking" educational eco-tourism program. The results show a total EFAS score of 2.89, indicating that the external condition of this destination is in a moderately strong position. This suggests that external opportunities outweigh threats, allowing managers to leverage favorable conditions to strengthen and expand educational tourism activities. The subtotal score for opportunities (1.994) further confirms that the external environment provides substantial support for the development of this program.

The greatest opportunity lies in the increasing number of tourist visits, with the highest weighted score of 0.576. This reflects a global post-pandemic shift toward nature-based and educational tourism. Tourists increasingly seek meaningful experiences that combine recreation with learning and environmental awareness (Ballantyne & Packer, 2021; Das & Chatterjee, 2020). The "Honey Picking" concept aligns well with this trend, offering interactive outdoor activities that integrate education and conservation. Such experiential tourism has been widely recognized as a key driver of visitor satisfaction and engagement in ecotourism destinations. The next significant opportunity is strong local community

support, with a score of 0.445. Community involvement plays a vital role in sustainable ecotourism development by enhancing local economic benefits and strengthening conservation efforts. Local residents can actively participate as guides, product sellers, and service providers, thereby fostering a sense of ownership and long-term commitment to the destination (Scheyvens & Biddulph, 2018). In this context, the community functions not only as beneficiaries but also as key stakeholders in preserving environmental and cultural values.

Table 4. External strategic factors analysis summary (EFAS)

No.	External strategic factors	Weight	Rating	Rating X Weight
	Opportunities			
1	Increasing number of tourists visiting	0.18	3.20	0.576
2	Full support from the local community	0.15	2.97	0.445
3	Online media to support the promotion of the eco-tourism package	0.18	2.83	0.509
4	Strategic location of the tourist site, frequented by visitors traveling to other attractions	0.16	2.90	0.464
	Sub Total	0.082		1.994
	Threats			
1	Many competitors offering similar educational eco-tourism concepts	0.16	2.73	0.436
2	Tourists' perceptions regarding the comfort and safety of the destination	0.15	3.07	0.460
	Sub Total	0.317		0.896
	Total	1.00		2.89

Weight Scale (Importance) 0.00 : Not important, 0.05 : Slightly important, 0.10 : Fairly important, 0.15 : Important, 0.20 : Very important; Rating Scale (Strength/Weakness) 1 = Slightly strong/weak, 2 = Moderately strong/weak, 3 = Strong/weak, 4 = Very strong/weak

The utilization of online media as a promotional tool (score 0.509) also presents a strategic opportunity. Digital platforms such as social media, tourism websites, and video-based content significantly influence travel decisions, particularly among Millennials and Generation Z. Effective digital marketing strategies can increase destination visibility, expand market reach, and enhance branding as a modern and environmentally conscious tourism site (Sigala, 2020). This is particularly relevant for niche tourism such as bee-based ecotourism, which requires awareness-building to attract visitors. Another important opportunity is the strategic location of the site (score 0.464). Taman Hutan Raya Ir. H. Djuanda is situated within a major tourist corridor in northern Bandung, providing access to nearby attractions such as Tebing Keraton and Maribaya Natural Hot Spring Resort. This positioning creates opportunities for spillover tourism, where visitors to adjacent destinations can be attracted to the "Honey Picking" program. Strategic location and accessibility are widely recognized as critical determinants of tourism competitiveness (UNWTO, 2023b).

Despite these opportunities, several threats must be addressed. The presence of numerous competitors offering similar educational ecotourism concepts (score 0.436) indicates increasing market competition. Destinations such as agrotourism sites, butterfly parks, and plantation tours in the Bandung area offer comparable experiences, requiring differentiation strategies. Innovation in tourism products, such as hands-on honey harvesting and integrated environmental education, is essential to maintain a competitive advantage (Carvache-Franco et al., 2022). Another significant threat is tourists' perception

of safety and comfort (score 0.460). Activities involving direct interaction with honey bees may raise concerns about safety risks, such as bee stings. Perceived risk has been shown to significantly influence travel decisions, satisfaction, and revisit intention (Neuburger & Egger, 2021; Abdullah et al., 2025). Therefore, implementing strict safety protocols, providing personal protective equipment (PPE), and ensuring trained supervision are critical measures to mitigate these concerns.

Furthermore, bee-based tourism (api-tourism) remains a niche segment that requires careful management to balance visitor experience with environmental sustainability. Studies emphasize that successful api-tourism development depends on integrating education, conservation, and safety measures (Topal et al., 2021). These elements are essential to ensure that tourism activities do not negatively impact bee populations or the surrounding ecosystem. Overall, the EFAS analysis indicates that the external environment strongly supports the development of the "Honey Picking" educational eco-tourism program. Key drivers include increasing demand for educational tourism, strong community support, and the expansion of digital promotion channels. However, challenges related to competition and safety perception must be addressed through innovation and effective management.

In conclusion, the EFAS score of 2.89 suggests that the external strategic position of the destination is relatively stable and promising. Although slightly below the ideal threshold of 3.00, it still indicates that opportunities outweigh threats. This condition provides a strong foundation for managers to expand the program, improve competitiveness, and strengthen the positioning of Taman Hutan Raya Ir. H. Djuanda as a leading educational ecotourism destination. External strengths can be strategically leveraged through strengthening partnerships with local communities, expanding digital promotion, and collaborating with nearby destinations to create an integrated educational tourism network. At the same time, challenges such as increasing competition and tourists' safety perceptions should encourage improvements in service quality and continuous innovation in tourism products. These strategic directions are consistent with recent studies emphasizing that sustainable ecotourism development requires a combination of community engagement, innovation, and adaptive management (Scheyvens & Biddulph, 2018; Carvache-Franco et al., 2022). By optimizing opportunities and mitigating threats through adaptive planning, the "Honey Picking" educational eco-tourism package has strong potential to become a sustainable and competitive model of educational tourism in Bandung. Based on the IFAS and EFAS calculations, the strategic position of the tourism program can be determined using the following formula:

$$\text{X-axis (S–W)} = 2.187 - 0.844 = 1.343 \quad \text{(Eq. 1)}$$

$$\text{Y-axis (O–T)} = 1.994 - 0.896 = 1.098 \quad \text{(Eq. 2)}$$

Thus, the position of the "Honey Picking" educational eco-tourism package is at the coordinate point (1.343, 1.098) within the SWOT matrix. This position places the program in Quadrant I, which represents a strong and favorable position that supports an aggressive or growth-oriented strategy. This indicates that internal strengths can be maximized to capture available external opportunities effectively.

The IFAS score of 3.03 and EFAS score of 2.89 further confirm that both internal and external conditions are supportive of development. The positive difference between strengths and weaknesses, as well as opportunities and threats, demonstrates that the program is well-positioned for expansion. This finding aligns with research indicating that destinations with strong internal capabilities and favorable external conditions are more likely to achieve sustainable growth and competitive advantage. The analysis highlights that the "Honey Picking" program has considerable development potential due to the combination of natural attractions, community support, and digital promotion opportunities. The forest ecosystem, interactive educational activities, and strategic location in northern Bandung contribute to its competitiveness among similar educational

tourism destinations. Nature-based tourism combined with experiential learning has been widely recognized as a key driver of tourist satisfaction and environmental awareness (Topal et al., 2021).

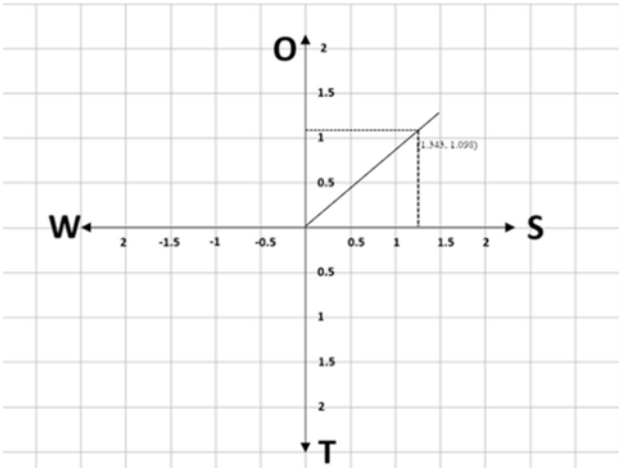

Fig. 3. SWOT analysis curve

Being positioned in Quadrant I also indicates that the tourism program has strong potential to expand its market and strengthen its branding as a conservation-based educational ecotourism model. A Strength–Opportunities (SO) strategy is therefore recommended, where internal strengths are utilized to maximize external opportunities. External opportunities include increasing tourist demand, strong community support, digital technological advancements, and a strategic location. Post-pandemic tourism trends show a growing preference for outdoor and environmentally oriented activities, reinforcing the relevance of the "Honey Picking" concept. To capitalize on these opportunities, managers should strengthen creative and consistent digital promotion strategies. Social media platforms such as Instagram, YouTube, and TikTok can be utilized to share educational content, including honey harvesting processes, beekeeper profiles, and the health benefits of honey. Digital engagement has been proven to significantly influence tourist decision-making and destination visibility (Sigala, 2020; Munar & Jacobsen, 2013).

Furthermore, local community support is a valuable asset that should be maintained and expanded. Community participation in tourism activities—such as guiding, selling honey-based products, and producing souvenirs—enhances local economic benefits and fosters a sense of ownership. This participatory approach aligns with sustainable tourism principles, where local communities play an active role in managing and conserving natural resources (Scheyvens & Biddulph, 2018). The strategic location of the site can also be leveraged through collaboration with nearby attractions such as Tebing Keraton, Goa Jepang, and Curug Dago. Developing integrated tourism packages that combine education, recreation, and conservation can enhance the attractiveness of the destination and increase tourists' length of stay. Accessibility and network integration are key factors in improving tourism competitiveness (UNWTO, 2023b).

Despite its strong potential, several challenges must be addressed, particularly competition and safety perception. The presence of similar educational tourism destinations requires continuous innovation to maintain competitiveness. Unique programs such as "One Day Beekeeper Experience" or "School of Honey Adventure" can differentiate the "Honey Picking" package and enhance visitor engagement. Innovation and product differentiation are essential strategies for sustaining competitiveness in ecotourism markets (Carvache-Franco et al., 2022). Additionally, tourists' perceptions of safety and comfort must be carefully managed. Activities involving direct interaction with bees may create concerns related to potential risks. Studies show that perceived risk significantly influences tourist satisfaction and revisit intention (Neuburger & Egger, 2021;

Abdullah et al., 2025). Therefore, implementing strict safety protocols, providing personal protective equipment (PPE), and ensuring professional supervision are essential measures.

Facility improvements, including clean rest areas, restrooms, prayer rooms, and food services, are also important to enhance visitor comfort. Promotion, which was previously identified as a weakness, should be strengthened through integrated communication strategies, including collaboration with schools, universities, and environmental organizations. Such partnerships can expand market reach and ensure long-term sustainability. Based on its position in Quadrant I (Growth Strategy), several strategic actions are recommended. First, strengthening digital promotion and educational branding through creative content focused on conservation and bee education. Second, empowering local communities by involving them in all aspects of tourism activities. Third, diversifying tourism products through educational packages such as workshops and school tours. Fourth, improving service quality and safety standards through training and professional management. Finally, fostering collaboration with nearby destinations and educational institutions to build an integrated ecotourism network. The SWOT analysis indicates that the "Honey Picking" educational eco-tourism program at Taman Hutan Raya Ir. H. Djuanda is positioned in a strong and favorable strategic condition for development. The combination of internal strengths and external opportunities provides a solid foundation for growth, particularly through the integration of educational value, natural attractions, and community involvement. By systematically leveraging these strengths and opportunities—while addressing challenges related to competition and visitor safety perception—the program can enhance its competitiveness and sustainability. Continuous innovation, improved service quality, and effective digital promotion are essential to strengthening its position as a leading conservation-based educational ecotourism destination in Bandung.

4. Conclusions

Based on the research and analysis conducted, it can be concluded that the "Honey Picking" educational eco-tourism package at Taman Hutan Raya Ir. H. Djuanda Bandung has high potential to be developed into a sustainable, conservation-based educational tourism destination. The internal factor analysis (IFAS) shows a total score of 3.03, indicating strong internal conditions. The main strengths lie in the interactive educational activities, the supporting natural beauty, easy accessibility, and adequate infrastructure. Meanwhile, the external factor analysis (EFAS) with a score of 2.89 indicates that the external environment is also supportive, with significant opportunities such as increasing tourist interest in educational tourism, local community support, and advances in digital promotion technology. The SWOT coordinate position at (1.343, 1.098) places "Honey Picking" in Quadrant I, indicating an aggressive development strategy that focuses on leveraging internal strengths to seize external opportunities.

Based on these results, the recommended development strategies include enhancing creative and sustainable social media promotion, empowering the local community to participate more actively in tourism activities, improving human resource quality, and innovating educational activities to make them more engaging and relevant to tourist needs. In addition, collaboration with nearby tourist destinations around Taman Hutan Raya Ir. H. Djuanda should be strengthened to create integrated tourism packages that provide visitors with broader experiences. Overall, the development of the "Honey Picking" educational eco-tourism package not only has the potential to raise public awareness about honey bee and environmental conservation but also offers significant economic, social, and ecological benefits for the local community while supporting biodiversity preservation efforts in Taman Hutan Raya Ir. H. Djuanda Bandung.

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Declaration of Generative AI Use
During the preparation of this work, the author used OpenAI's ChatGPT and Grammarly to assist in improving grammar, clarity, and academic tone of the manuscript. After using this tool, the author reviewed and edited the content as needed and took full responsibility for the content of the publication.

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Biographies of Authors

Wahyu Surakusumah, Department of Biology, Faculty of Biology, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia.

- Email: wahyu_bioupi@upi.edu
- ORCID: 0000-0001-8057-7990
- Web of Science ResearcherID: AAA-4015-2021
- Scopus Author ID: 57201068504
- Homepage: https://scholar.google.com/citations?user=qNX4PiYAAAAJ&hl=en

Halisa, Department of Biology, Faculty of Biology, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia.

- Email: halisa@upi.edu
- ORCID: 0009-0000-5209-0026
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A

Abdul Faqih Fajar Sidik, Department of Biology, Faculty of Biology, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia.

- Email: abdulfaqih0205@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A

Chersa Steffany Polandos, Department of Biology, Faculty of Biology, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia.

- Email: chersaapolandos@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A