

Research Article

Marketing Collaboration for Educational Tourism Based on Fruit-Farming Production in the Digital Era

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Abstract. Educational tourism based on fruit-farming production holds great potential, but its marketing management often runs partially and has not yet been collaborative, so destination competitiveness is not yet optimal in the digital era. This study aims to analyze the forms and patterns of collaboration among stakeholders, identify the role of digital media, and formulate a marketing-collaboration model for educational tourism based on fruit-farming production. The study uses a qualitative approach with a case-study strategy at the Fruit Garden Educational Tourism site, Batu City, Malang, East Java. The research population comprised destination stakeholders, while the sample was determined purposively at twelve informants representing five pentahelix elements: government, business actors, community, academics, and media. Data were collected through in-depth interviews, observation, documentation, and digital content analysis, then analyzed using the Miles and Huberman interactive model — data reduction, data display, and conclusion drawing — complemented by content analysis, with validity maintained through triangulation. The results show that collaboration among the five elements has formed but remains informal and incidental, with the manager as the dominant actor. Digital marketing is not yet planned, and content showing visitors' direct experience achieves the highest engagement compared to promotional content. The study concludes that strengthening marketing requires a structured collaboration model covering joint planning, division of roles, joint content production, digital distribution, and periodic evaluation, with the learning experience highlighted as the destination's main value.

Keywords: Digital Marketing; Educational Tourism; Fruit Agrotourism; Marketing Collaboration; Pentahelix.

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1. Introduction

Digital transformation has changed how tourists search for, choose, and share travel experiences, so a destination's competitiveness is now heavily determined by its ability to be present and marketed digitally. Amid this trend, tourism based on local potential has become one of the pillars of Indonesia's post-pandemic economic recovery and growth, particularly through villages and tourism areas that highlight agrarian distinctiveness. Data from the Ministry of Tourism and Creative Economy's Tourism Village Network (Jadesta) show that as of October 2024 there were 6,026 registered tourism villages, but only 33 were self-reliant while 4,687 remained at the pioneering stage (GoodStats, 2024). This sharp disparity indicates that most destinations have not yet been able to transform into competitive and sustainable tourism destinations. One root of the problem lies in marketing management that remains partial, carried out independently by each actor, and not yet optimally utilizing collaboration among stakeholders (Nurranto, 2026). Yet educational tourism based on fruit-farming production — which combines farming, picking, and processing garden produce — has high experiential value and broad market potential. The strengthening trend of experience-based tourism (the experience economy) and growing tourist interest — especially among younger

generations active on social media — in agricultural education further expand the opportunity to develop this segment. Chasanah et al. (2023) note that applying the edu-tourism concept in fruit gardens can increase visits by an average of 57%, while Yuanita (2024) found that educational tourism destinations often lag in digital marketing visibility despite their large potential. This gap forms the research problem of this study: how can marketing collaboration among stakeholders be optimized to develop educational tourism based on fruit-farming production in the digital era.

A number of previous studies have discussed related issues, but tend to run separately. Studies on pentahelix-model collaboration generally stop at smart-destination governance or tourism-village development (Nugroho & Lestari, 2023; Widiarti et al., 2026); studies on collaborative destination marketing focus more on post-pandemic recovery at national-scale destinations (Pascual-Fraile et al., 2025); while studies on tourism digital marketing focus on the general use of social media (Musliha & Adinugraha, 2022). Meanwhile, research on fruit agro-edutourism emphasizes product and attraction development more than marketing strategy (Chasanah et al., 2023). The novelty of this study lies in integrating three matters that have so far been discussed separately: pentahelix-based marketing collaboration, educational tourism specifically grounded in fruit-farming production, and digital transformation as the primary marketing medium. Thus, this study offers a contextual marketing-collaboration framework for fruit agro-edutourism destinations — an intersection not yet widely explored in Indonesian tourism literature — while also addressing the limitations of previous studies that treat collaboration, education, and digitalization as standalone issues.

This study is grounded in several theoretical foundations. First, collaboration and collaborative marketing theory with the pentahelix model involving government, business actors, community, academics, and media as the main framework for jointly managing a destination (Nugroho & Lestari, 2023; Widiarti et al., 2026). The pentahelix model was chosen because destination management requires a clear yet mutually reinforcing division of roles, so that the marketing burden is not borne by a single actor alone. Second, stakeholder theory, which asserts that the creation of sustainable tourism value arises from the involvement and synergy of actors across sectors, not from a single effort (Nurranto, 2026). Third, digital marketing theory, which views digital platforms and social media as strategic channels for expanding reach, building destination image, and driving visit decisions (Musliha & Adinugraha, 2022; Pascual-Fraile et al., 2025). Fourth, experiential learning and edutourism theory, which places direct learning experience at the core of educational tourism's appeal (Yuanita, 2024). This entire theoretical framework is situated within tourism management that emphasizes integrated destination planning and management (Kurniansah et al., 2024). The theoretical sources in this study come from relevant books and research journals from the 2021-2026 period.

Based on this background and research problem, this study aims to analyze the forms and patterns of collaboration among stakeholders in marketing educational tourism based on fruit-farming production, identify the role of technology and digital media in strengthening this collaborative marketing, and formulate an effective and sustainable marketing-collaboration model for fruit agro-edutourism destinations in the digital era. These three objectives are directed at addressing the gap between the destination's large potential and the weak marketing strategy that has so far been carried out separately.

This study is expected to provide both theoretical and practical benefits. Theoretically, the findings enrich tourism-marketing studies by integrating the concepts of pentahelix collaboration, educational tourism, and digital marketing into a single coherent framework, while opening space for further research at the intersection of these three fields. Practically, the findings can serve as a reference for destination managers in designing collaborative marketing strategies, for government in formulating policies to strengthen tourism villages, for farming businesses in expanding the market for fruit products, and for academics and media as partners in building a sustainable educational-tourism ecosystem. Furthermore, this study is expected to encourage the active involvement of the local community so that the economic benefits of tourist visits can be felt more evenly and sustainably.

2. Methods

This study uses a qualitative approach with a descriptive case-study strategy. The qualitative approach was chosen because the research objective requires an in-depth understanding of the patterns, processes, and meaning of marketing collaboration among stakeholders that cannot be reduced to numbers alone (Creswell & Creswell, 2023). A case-

study strategy was used to examine the phenomenon of marketing collaboration for fruit-farming-based educational tourism as a whole within its real context, as is common in studies of pentahelix tourism collaboration (Nugroho & Lestari, 2023). Thus, the study does not merely describe marketing activities, but explores the relationships and dynamics among actors that shape this collaboration.

The study was conducted at the Fruit Garden Educational Tourism destination in Batu City, Malang, East Java — an agro-edutourism area based on fruit-farming production with attractions including fruit picking, cultivation education, fruit processing, and the sale of farmer and MSME products — with a data-collection period of [research period to be filled according to implementation]. Research subjects or informants were determined purposively (purposive sampling), considering their direct involvement in destination marketing. Informants represented five pentahelix elements: government (agencies overseeing tourism and agriculture), business actors and fruit-garden managers, the community or tourism awareness group (pokdarwis), academics, and media (Widianti et al., 2026). The number of informants was planned at twelve people spread across these five elements: two from government, three business actors and fruit-garden managers, three representatives of the community or tourism awareness group, two academics, and two from media. This number is flexible and may increase until data saturation is reached, i.e., when additional interviews no longer produce significant new information. This cross-element selection of informants was intended so that the data obtained reflects all actors playing a role in the destination's marketing-collaboration ecosystem.

The data collected consist of primary and secondary data. Primary data were obtained through three techniques: in-depth interviews with informants, observation of marketing activities and educational attractions at the site, and documentation. To capture the digital-era dimension, the researcher also traced and analyzed marketing content on the destination's digital channels, such as social media, websites, and online travel agents. Secondary data came from manager documents, local government policies, visit reports, and relevant publications and news coverage. The researcher acted as the main instrument, guided by an interview guide and observation sheet developed according to the research focus.

Data were analyzed qualitatively using the Miles and Huberman interactive analysis model, consisting of three simultaneous activity flows: data reduction, data display, and conclusion drawing and verification. Data reduction was carried out by sorting and categorizing interview results, observations, and documents according to the research focus; data display was arranged in the form of narratives, matrices, and inter-actor relationship diagrams; while conclusion drawing was directed at formulating marketing-collaboration patterns and models. The analysis process moved back and forth between field data and the theoretical framework of collaborative marketing and pentahelix, so that findings could be interpreted both contextually and theoretically.

Specifically, data from digital channels were analyzed using content-analysis techniques to complement the interactive analysis above. This analysis first established the period and sample of content observed — for example, all of the destination's uploads on social media and its website within a certain period — then categorized content by purpose, such as educational, promotional, audience-interaction, and inter-actor collaboration content. Beyond content, the researcher examined engagement indicators such as follower count, views, likes, comments, and shares, as well as audience response patterns to collaborative content, to assess the effectiveness of the destination's digital marketing (Musliha & Adinugraha, 2022; Pascual-Fraile et al., 2025). The content-analysis results were then triangulated with interview and observation findings so that the role of collaboration in the destination's digital marketing could be comprehensively mapped.

To ensure a systematic and traceable analysis, this study used a coding framework that is both deductive and inductive (hybrid coding). Initial (a priori) codes were derived from the theoretical framework — namely collaborative marketing and the pentahelix model, digital marketing, and experiential learning — while new codes were allowed to emerge from field data throughout the analysis process (Creswell & Creswell, 2023). The main themes and codes used as the analytical reference are summarized in Table 1.

Table 1. Framework of Themes and Data Analysis Codes.

Main Theme	Codes/Subthemes
Forms and patterns of pentahelix collaboration	Government's role; business actors' and garden managers' role; community/pokdarwis role; academics' role; media's role; coordination and leadership mechanisms
Collaborative marketing strategy	Joint planning; division of roles and resources; destination branding; joint promotion and tour-package bundling
Digital marketing and content	Digital channel selection; content type (education, promotion, interaction); engagement indicators; digitalization of service and reservations
Educational tourism based on fruit-farming production	Educational attractions and packages; direct (experiential) learning experience; visitor involvement; linkage to fruit-production activities
Supporting and inhibiting factors	Trust and commitment; inter-actor communication; regulation and policy; human-resource and funding capacity
Value and sustainability	Economic benefits for farmers and the community; equitable distribution of benefits; sustainability of collaboration and the destination

This thematic and coding framework was applied consistently across all data sources — interviews, observation, documents, and digital content — so that the analysis results could be compared across actors and the research process could be replicated by other researchers.

Data validity was maintained through triangulation, both source triangulation by comparing accounts among informants from different pentahelix elements, and technique triangulation by combining interview, observation, and documentation results (Creswell & Creswell, 2023). In addition, member checking was carried out with key informants to ensure that the researcher's interpretation matched their intended meaning. Through these steps, the research findings are expected to have adequate credibility and to be scientifically accountable.

3. Results And Discussion

The study, conducted at the Fruit Garden Educational Tourism site in Batu City, Malang, East Java, involved twelve informants representing five pentahelix elements: government (P1-P2), business actors (U1-U3), community (M1-M3), academics (A1-A2), and media (MD1-MD2). Data gathered through in-depth interviews, field observation, documentation, and digital-content analysis were reduced, displayed, and triangulated, then interpreted within the theoretical framework of pentahelix collaboration, collaborative marketing, digital marketing, and experiential learning. Overall, all findings converge on one common thread: the five pentahelix elements are present and contributing, but collaboration among them is not yet well organized, so the destination's marketing potential has not been fully realized.

Marketing collaboration at this destination has indeed involved all five elements, but the relationships among actors remain informal and incidental. Coordination generally only takes place when there is a specific activity — a festival, school visit, harvest season, or government agenda — and happens through a WhatsApp group without a regular meeting forum (P1, M1). The garden manager (U1) is the most dominant actor, handling almost all marketing activities, while the division of roles among actors is not yet documented; observation and documentation results reinforce this through the absence of a routine coordination forum and limited cooperation documents. This finding confirms that the presence of all five elements does not automatically produce effective collaboration — a condition also found by Nugroho and Lestari (2023) at a smart destination in Semarang, who concluded that collaboration among stakeholders had not been fully achieved even though the pentahelix model had been adopted. This absence of a formal mechanism risks hindering the creation of sustainable tourism value, which, according to Nurranto (2026), stems from cross-actor synergy rather than a single effort, while also reflecting the 'industry as trigger' pattern identified by Widiyanti et al. (2026), in which one actor becomes the main driver without the strengthening of other elements as enablers.

This pattern of dominance is also evident in a marketing strategy that has not yet been jointly formulated. The manager still independently determines promotional messages, prices, tour packages, and marketing channels, while government and media only assist with publicity on certain occasions (P1, MD1). The destination does not yet have a shared promotional

calendar, a consistent visual identity, or segmented tour packages, and farmers' products (U2) and MSME processed goods (U3) have not yet been integrated into the destination's promotion. Thus, the principle of collaborative marketing, which requires joint planning and resource-sharing, has not been fulfilled. By comparison, Pascual-Fraile et al. (2025) show that effective destination marketing campaigns are built through a clear division of roles between destination management organizations and digital partners, with measurable branding and conversion goals — something not yet happening at this destination, so collaborative potential has not been converted into unified promotional strength.

In terms of digital marketing, the destination has used six channels with varying intensity. Instagram is the most active channel with thirty-six posts, or about three posts per week, followed by WhatsApp with twenty-four promotional materials, Facebook with eighteen posts partly repeating Instagram content, TikTok with twelve irregularly uploaded videos, and a website with four rarely updated articles, while the online-travel-agent channel has not been used at all. Of the fifty pieces of content analyzed, most were oriented toward price and package promotion (40%), while agricultural-education content (22%) and visitor-experience content (18%) have not become the main focus, followed by MSME product content, inter-actor collaboration, and audience interaction with much smaller shares. However, engagement data show a pattern that is actually the opposite of these proportions, as presented in Table 2.

Table 2. Engagement Level of the Destination's Digital Content.

Content Category	Views	Likes	Comments	Shares
Package promotion	1,250	86	5	9
Agricultural education	1,780	124	12	21
Visitor experience	3,450	238	27	46
MSME products	1,130	75	6	12
Inter-actor collaboration	2,050	142	10	29
Audience interaction	1,920	118	34	18

Content showing visitor experience achieved the highest engagement — 3,450 views, 238 likes, 27 comments, and 46 shares — far exceeding package-promotion content, which dominated the volume of posts but only achieved 1,250 views, 86 likes, and 9 shares. This mismatch between content allocation and its effectiveness is an important finding: the destination produces the most promotional content, yet experience content is actually most sought after by the audience. This reinforces Musliha and Adinugraha's (2022) view that social media is a strategic channel, while also confirming that its effectiveness depends on content-management strategy, not merely presence across many channels. An academic informant's (A2) suggestion that evaluation should not stop at like counts, but should also cover reach, saves, shares, inbound messages, and reservation conversions, is consistent with the branding-and-conversion orientation emphasized by Pascual-Fraile et al. (2025).

This advantage of experience content aligns with the destination's main strength, which lies in the direct learning experience within the fruit-production process. Visitors do not merely buy or pick fruit, but also witness the process of planting, fertilizing, pruning, harvesting, and processing garden produce (U2, MD2). This finding reinforces the concept of experiential learning put forward by Yuanita (2024), which places learning experience at the core of educational tourism's appeal. Nevertheless, this attraction is highly dependent on fruit season, its educational material is not yet standardized, and no age-based packages are yet available (P2, A1). Chasanah et al.'s (2023) experience is relevant here, since developing educational modules, tiered packages, and attraction development has been shown to increase fruit-garden visits by an average of 57%, while dependence on harvest season requires diversifying educational attractions so the destination remains productive year-round.

These various findings converge on a number of supporting and inhibiting factors. On the supporting side, the destination has unique orchards and local fruit products, farmer and MSME involvement, local government support, interest from schools and families, the digital capability of the younger generation, social-media potential, and processed fruit products. On the inhibiting side, there are limited promotional budgets, no dedicated digital team, irregular coordination, dependence on harvest season, inconsistent branding, incomplete visitor data, and an unintegrated reservation system. Importantly, most of the inhibiting factors are institutional and managerial in nature, not limitations of natural resources, so they can

potentially be overcome through more structured collaboration arrangements and strengthened digital-management capacity.

Economically, the destination has generated benefits through the sale of fruit, processed products, guide services, food, and parking, but these benefits are not yet evenly distributed because there is not yet a clear partnership and role-division system (M3) — a condition that again confirms Nurranto's (2026) argument that sustainable value creation requires organized collaboration, not momentary involvement. Building on all these findings, this study formulates a marketing-collaboration model that places each pentahelix element in a mutually complementary role (Table 3), with a continuously running workflow.

Table 3. Recommended Marketing Collaboration Model.

Actor	Main Role in Marketing Collaboration
Government	Regulation, facilitation, regional promotion, infrastructure assistance, and integration of agricultural and tourism programs
Business actors/managers	Destination management, package setting, visitor service, marketing, and quality control
Community/Pokdarwis	Tourist service, guiding, cleanliness, provision of local products, and management of visitor experience
Academics	Market research, training, development of educational modules, evaluation, and innovation development
Media	Publication, storytelling, digital campaigns, image strengthening, and audience-reach expansion

Joint Planning → Division Of Roles → Joint Content Production → Digital Distribution → Evaluation

This flow is designed to turn the collaboration pattern, which has so far been incidental, into something more structured, highlighting experience content as the focus of digital marketing, integrating online reservation and payment, and utilizing the as-yet-untapped online-travel-agent channel. Thus, this model addresses the research objective of formulating an effective and sustainable marketing collaboration for fruit agro-edutourism destinations in the digital era.

4. Conclusion

This study concludes that marketing collaboration at the Fruit Garden Educational Tourism site in Batu City, Malang, has formed, involving all five pentahelix elements — government, business actors, community, academics, and media — but has not yet run in a structured and sustainable manner. Collaboration remains informal and incidental, generally occurring only when there is a specific activity, with the garden manager as the dominant actor and the division of roles among actors not yet documented. The community's role is mostly operational, while academic and media involvement has not yet functioned as a sustainable strategic partnership.

In terms of digitalization, technology and digital media play an important role but are not yet optimized. The destination has used various channels, but their management is not yet based on a content calendar, audience segmentation, visual identity, and clear evaluation indicators, and has not yet made use of the online-travel-agent channel. The most notable finding is that content showing visitors' direct experience achieves the highest engagement, far surpassing promotional content, which is actually produced the most. This shows that direct learning experience is the main value that should be the focus of the destination's digital marketing strategy.

Based on these two conclusions, this study formulates a marketing-collaboration model that places each pentahelix element in a mutually complementary role, running through a flow of joint planning, division of roles, joint content production, digital distribution, and periodic evaluation. This model is directed at turning the collaboration pattern, which has so far been incidental, into something more structured, highlighting experience content, integrating online reservation and payment, and expanding the market reach of fruit-farming products. Thus, strengthening the marketing of fruit-farming-based educational tourism is determined more by organized collaboration and targeted digital strategy than by simply adding resources, while also opening opportunities for the destination's economic benefits to be felt more evenly by farmers and the local community.

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