

From Farm to Community: Evaluating Social Sustainability in Organic Vegetable-Picking Tourism, Malang City

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Abstract

Community-based agrotourism is increasingly recognized as a driver of local empowerment, yet its social sustainability dimensions remain underexplored in Southeast Asia. This study evaluates social sustainability at an organic vegetable-picking tourism site in Malang City using eleven indicators derived from the literature: availability, accessibility, connectivity, density, diversity, legibility, safety, versatility, participation, social actions, and equity. Field observations and semi-structured interviews with managers, community members, and visitors revealed strong performance in local participation, diversity of activities, and educational value creation. However, challenges remain in public transport accessibility, digital wayfinding, formalizing collaborations with nearby businesses, and managing peak-period congestion. This study contributes to the literature by operationalizing a multidimensional framework for social sustainability in a peri-urban agrotourism setting and offers practical recommendations to strengthen inclusivity, visitor flow management, and community linkages. The findings demonstrate how such initiatives can advance SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production) by integrating tourism development with local social objectives.

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1. Introduction

Agrotourism has become a strategic response to multiple development challenges in Indonesia, functioning not only as a means to diversify rural economies but also as a countermeasure against urbanization pressure and agricultural land conversion. Previous studies have confirmed its potential to generate multidimensional impacts. Kurniawan and Khademi-Vidra (2024) reported that agrotourism in Central Lombok yielded socio-cultural, economic, and environmental benefits through income diversification, cultural preservation, and community empowerment. Similarly, Riady et al. (2024) observed that sustainable village-based agrotourism in Tapanuli Utara significantly enhanced local welfare, particularly when reinforced by infrastructure and robust economic participation. Transforming underutilized farmland into integrated agrotourism destinations has also been found to slow land conversion and create immersive educational tourism opportunities (Ihsan & Gunawan, 2024).

However, such developments are not without challenges. In peri-urban contexts, where tourism sites coexist with densely populated and economically diverse communities, risks include land-use conflicts, unequal benefit distribution, and cultural commodification (Rozuli, 2020). These risks emphasize the need for cross-sectoral integration, adaptive spatial planning, and participatory governance to ensure equitable outcomes.

Malang City, located in East Java, provides a unique case for examining these dynamics. Its fertile volcanic soils and strong horticultural base have encouraged the emergence of

community-driven organic vegetable-picking tourism sites. These sites offer visitors more than recreational enjoyment—they provide hands-on agricultural experiences, education in organic farming, and opportunities to participate in local food sustainability initiatives. In doing so, they align closely with the global agenda of Sustainable Development Goals (SDG) 11 (*Sustainable Cities and Communities*) and SDG 12 (*Responsible Consumption and Production*), particularly in promoting sustainable consumption patterns and strengthening community resilience.

Despite these promising developments, the social dimension of agrotourism remains understudied relative to its economic and environmental aspects. Ilvira and Arumugam (2024) showed that successful agrotourism programs in North Sumatra relied on community empowerment strategies integrating local culture and resource stewardship, while Dewi et al. (2023) reported that residents in Bogor's eco-agrotourism villages perceived tourism as a platform for cultural preservation and social cohesion conditional on strong participatory governance. These findings converge with Beard's (2019) argument that Southeast Asian tourism planning must transcend economic growth metrics to address issues of inclusion, power distribution, and long-term community wellbeing.

This gap highlights the importance of systematically evaluating social sustainability outcomes in agrotourism, particularly in peri-urban settings where tourism development and urban expansion interact dynamically. Understanding how community-based tourism initiatives affect dimensions such as participation, equity, and cultural resilience is critical to designing destinations that are socially inclusive and resistant to displacement pressures.

In response, this study employs a descriptive-evaluative approach to examine the social sustainability of an organic vegetable-picking tourism site in Malang City. Eleven indicators availability, accessibility, connectivity, density, diversity, legibility, safety, versatility, participation, social actions, and equity are used as a framework derived from systematic literature review. Empirical data are collected through direct observation, semi-structured interviews with managers and visitors, and analysis of secondary sources.

By systematically mapping the site's performance against these indicators, this research seeks to (1) diagnose strengths and weaknesses in social sustainability implementation, (2) provide evidence-based recommendations for destination managers, and (3) contribute to theoretical discussions on how agrotourism can be leveraged as a vehicle for socially inclusive development. The findings are expected to inform both local policy and the broader literature on community-based tourism, supporting the creation of resilient, equitable, and participatory tourism models in rapidly urbanizing regions.

This study offers three main contributions that distinguish it from prior research. First, it operationalizes eleven dimensions of social sustainability availability, accessibility, connectivity, density, diversity, legibility, safety, versatility, participation, social actions, and equity within a peri-urban agrotourism setting, an area where empirical applications remain scarce. Second, it integrates systematic literature review results with on-site empirical data, creating a comprehensive evaluative framework that links theory and practice. Third, it provides actionable recommendations tailored to destination managers and local policymakers, emphasizing inclusive participation mechanisms and spatial planning strategies to mitigate risks of exclusion, land-use conflict, and cultural commodification. Together, these contributions advance the discourse on socially sustainable tourism and position agrotourism as a strategic instrument for achieving SDG 11 (*Sustainable Cities and Communities*) and SDG 12 (*Responsible Consumption and Production*).

2. Methods

To ensure methodological robustness, this study adopted a descriptive-evaluative design widely recognized in sustainability research. This approach enables both descriptive mapping and normative assessment of social sustainability features at the agrotourism site. Similar mixed-method designs using observation and semi-structured interviews have been successfully applied in tourism sustainability assessments, allowing in-depth exploration of local dynamics and lived experiences (Alipour et al., 2011; Zhang, 2021; Pereira et al., 2024).

Data collection relied on two complementary techniques: field observation and semi-structured interviews. Field observations were conducted to capture spatial and behavioral

elements known to influence social sustainability such as accessibility, inclusivity, and interaction zones following established research protocols for analyzing built environments and visitor experience (Gavinho, 2016). Specific attention was paid to signage, spatial legibility, and communal nodes, reflecting best practices in participatory design and urban social interaction studies.

Semi-structured interviews were carried out with key stakeholder groups, including tourism site managers, participating residents, and visitors. This multi-stakeholder approach ensured that diverse perspectives were represented, consistent with methods used in governance and community-based tourism research (Mbaiwa, 2010; Akdemir, 2020). Interviews explored themes such as community participation, benefit distribution, visitor experience, and perceived social value of the site.

The analysis applied an indicator-based evaluative framework inspired by social sustainability literature, incorporating dimensions such as availability, accessibility, connectivity, density, diversity, legibility, safety, versatility, participation, social actions, and equity (Silva, 2014). Data from interviews and observations were thematically coded against these indicators, allowing the triangulation of findings. This process enhanced methodological reliability and produced a more holistic interpretation of the site's social sustainability performance.

To ensure credibility and minimize researcher bias, member-checking was conducted with key informants to validate interpretations and refine conclusions. This practice is consistent with recommendations for strengthening rigor in tourism sustainability research (Quader et al., 2025)

3. Results and Discussion

The findings reveal a nuanced picture of the site's social sustainability performance, organized according to the eleven indicators applied in this study. Data triangulation between field observation and interview responses provides a comprehensive understanding of strengths and areas needing improvement.

Availability

Field observations revealed that the organic vegetable-picking site provides a comprehensive set of basic facilities that enhance the overall visitor experience. The site includes a designated parking area, harvesting plots with clear boundaries, kiosks selling freshly harvested produce, toilets, and a small rest area near the entrance. These facilities were observed to be clean and functional, suggesting a minimum level of service quality consistent with the expectations of urban visitors. These findings echo Suprianti and Dolorosa (2025), who found that visitor satisfaction in agrotourism destinations in Singkawang is highly influenced by the availability and cleanliness of basic amenities such as toilets, canteens, and packaging stations.

Despite these strengths, several gaps were identified. Shaded resting areas were limited, which became particularly evident during midday visits when temperatures were high. Lactation rooms and dedicated children's play areas were absent, potentially reducing comfort for families visiting with small children. This observation was echoed by a visitor, who remarked:

"It's very convenient that we can wash and pack vegetables here, but I wish there were more shaded spots to sit down, especially when bringing children." (Visitor 05)

The availability of facilities directly influences visitor satisfaction and dwell time, as noted by Gavinho (2016), who argued that the lack of amenities reduces the quality of the overall tourism experience. Similarly, Shree and Kaini (2021) emphasized that limited infrastructure, especially rest and shaded areas, negatively affects the appeal of emerging tourism destinations in South Asia.

Managers acknowledged these limitations and revealed ongoing plans to enhance family-friendly infrastructure:

"We are working on adding more benches and shaded areas next season, and we are discussing a

lactation room near the main entrance.” (Manager 01)

These findings indicate that while the basic availability of facilities meets minimum requirements, targeted improvements could significantly increase inclusivity and overall satisfaction. Providing additional rest spots, lactation facilities, and family-oriented amenities would align the site with best practices in agrotourism infrastructure planning, which emphasize both functional adequacy and visitor well-being (Pereira et al., 2024).

Accessibility

Accessibility emerged as one of the more mixed-performing indicators at the site. Field observations confirmed that the tourism area is reachable within 30–40 minutes from Malang City center by private vehicle, and the access road is relatively well-maintained. The site provides a dedicated parking area with clear entry and exit points, which visitors found convenient.

However, public transportation access remains limited, creating a barrier for visitors without private vehicles. Several interviewees expressed difficulty in reaching the site, with one visitor stating:

“We had to rent a car to get here. It would be great if there was a shuttle from the city center or at least clearer directions on online maps.” (Visitor 12)

Digital accessibility was another concern. Observations showed that online navigation platforms sometimes misdirect visitors, causing delays. This was confirmed by staff:

“We often receive phone calls from guests saying they got lost on the last turn. We are planning to update the pin location on Google Maps.” (Staff 02)

The literature highlights accessibility as a crucial determinant of destination attractiveness, particularly for community-based tourism in peri-urban areas (Mbaiwa, 2010; Zhang, 2021). The lack of seamless transport connectivity risks limiting the participation of wider segments of society, especially students, elderly groups, or budget-conscious visitors who rely on public transport.

Managers expressed an awareness of this issue and discussed potential solutions:

“We are exploring collaboration with local transport providers and tourism boards to create weekend shuttle services for visitors.” (Manager 01)

These findings suggest that improving accessibility will not only expand the visitor base but also promote equity, as emphasized in sustainable tourism frameworks that link physical access to social inclusion (Silva, 2014). Recommended actions include updating digital navigation tools, installing clearer road signage from main intersections, and piloting a shuttle service during peak seasons to encourage greater participation from diverse groups.

Connectivity

Connectivity is a key determinant in enhancing the competitiveness and inclusiveness of agrotourism destinations. Field observations from the vegetable-picking site in Malang City indicated potential for multi-point visitor engagement, as the site is located near culinary spots, small markets, and homestays. However, these potential connections remain largely informal and underutilized, reflecting a broader challenge in agrotourism development across Southeast Asia where integrated tourism networks are still maturing (Karampela et al., 2021; Faganel, 2011).

Managers reported that collaboration with surrounding businesses and tourism operators remains occasional and event-driven rather than structured.

“Sometimes we work with a local café to create group packages, but it’s not yet a routine partnership. We would like to formalize this collaboration so visitors can enjoy a full-day itinerary.” (Manager 01)

Visitors also expressed interest in bundled experiences that combine farm activities with local culinary or cultural visits:

“It would be nice if after picking vegetables, we could visit a nearby dairy farm or taste local dishes with a package deal.” (Visitor 07)

Observations indicated the absence of clear information boards or printed materials that map nearby attractions, which limits the potential for integrated tourism flows. This gap suggests a missed opportunity to extend visitor stay duration and spread economic benefits across the community.

Stakeholders acknowledged that while there have been occasional collaborations with nearby businesses—such as bundling activities with local cafés or food vendors—these efforts are not yet institutionalized. This limits opportunities to extend visitor stays and diversify the tourism value chain, both of which are crucial for local economic distribution (Riady et al., 2024). Visitors also noted the absence of wayfinding aids, brochures, or maps to encourage exploration of the surrounding area, echoing challenges found in other peri-urban agrotourism settings (Kenterelidou et al., 2017).

Strengthening connectivity requires formalizing cross-sector partnerships and adopting coordinated promotional efforts. As noted by Cvahte-Ojsteršek and Pavić (2024), successful agrotourism development often hinges on structured networks that bridge local hospitality services, transportation, and cultural experiences. Moreover, connectivity extends beyond physical linkages to include digital coordination and branding, both of which can amplify the destination's appeal and economic resilience.

Improving connectivity may involve three key strategies: (1) establishing formal partnerships with local cafés, handicraft producers, and transport providers, (2) creating digital and physical maps showcasing nearby points of interest, and (3) collaborating with the municipal tourism office to promote joint events. These steps would not only boost visitor experience but also reinforce the destination's position as part of a broader sustainable tourism ecosystem.

Density

Density plays a significant role in shaping both visitor experience and operational efficiency at agrotourism sites. Field observations indicated that visitor numbers peaked during weekends and school holidays, creating a vibrant and lively atmosphere. The parking area reached near full capacity during these periods, and harvesting plots were observed to host multiple groups simultaneously, which enhanced social interaction but also created moments of crowding. A staff member shared:

“When three school groups come at the same time, we have to schedule turns for entering the plots; otherwise it becomes chaotic and the children lose focus.” (Staff 03)

Visitors echoed similar concerns, noting that high density could occasionally detract from the overall experience:

“It was fun, but we had to wait a long time before entering the plot. Maybe they could limit groups or give us a time slot so it's more organized.” (Visitor 10)

While high visitor density contributes positively to the local economy by increasing produce sales and market activity, unmanaged crowding can reduce visitor satisfaction and strain staff resources. This finding aligns with Zhang (2021), who emphasizes the need for balanced capacity management to ensure both economic benefit and quality of experience.

Managers reported that while there is no formal visitor cap, they are considering implementing a reservation system for school groups and large families to better manage peak demand.

"We are exploring an online booking system for weekends so that we can distribute visitors more evenly throughout the day." (Manager 02)

The literature supports such measures, suggesting that controlled visitor flows and staggered entry times can improve service delivery, reduce congestion, and maintain the educational value of agrotourism activities (Pereira et al., 2024). This is particularly critical in settings where educational interaction and hands-on activities are central to the visitor experience, such as organic vegetable-picking sites. Studies by Oyetoro et al. (2025) highlight the value of AI-based reservation systems in optimizing visitor flows, allowing for dynamic scheduling based on real-time conditions like weather or peak hours. These predictive systems help prevent overcrowding and sustain service quality, ultimately enhancing visitor satisfaction and protecting destination infrastructure. Similarly, Zelenka and Kacetl (2013) argue that visitor management frameworks, including carrying capacity assessments and timed entries, are essential for maintaining both the ecological integrity and educational function of tourism destinations. Therefore, incorporating technology-supported flow management tools can not only improve the quality of visitor experiences but also align agrotourism operations with broader goals of environmental and social sustainability.

In summary, while density at the site is a positive indicator of popularity and economic vitality, adopting visitor flow management strategies—such as reservation systems, time-slot allocations, and increased staffing during peak hours—would enhance the sustainability of the visitor experience and reduce operational stress.

Diversity

Diversity of activities is one of the site's most valued features, providing visitors with a multifaceted experience beyond the simple act of vegetable-picking. Field observations confirmed that the site offers a variety of programs, including organic farming lessons, composting demonstrations, cooking classes using freshly harvested produce, and guided tours explaining sustainable agricultural practices. These activities were observed to attract different segments of visitors—families, school groups, and culinary enthusiasts—thus broadening the appeal of the destination.

Visitors frequently mentioned the educational value of these activities. One participant shared:

"I really enjoyed the cooking class—it made me want to try organic recipes at home and taught my kids where their food comes from." (Visitor 09)

This diversity not only enhances visitor satisfaction but also contributes to the educational mission of agrotourism, aligning with the principles of experiential learning in sustainable tourism (Mbaiwa, 2010).

However, several respondents suggested that the current offerings could be expanded to include seasonal events, cultural showcases, or night markets to encourage repeat visits.

"It would be nice to have special events, maybe a harvest festival or a farmers' night market, so there is something new each season." (Visitor 14)

Managers acknowledged this feedback and expressed interest in developing more thematic programs:

"We are planning to introduce a quarterly farm festival where visitors can join seed-planting days and taste seasonal produce." (Manager 01)

The literature supports diversifying tourism activities as a strategy to strengthen destination competitiveness and enhance community involvement. Offering culturally infused events, such as local music performances or craft workshops, could further differentiate the site and embed it more deeply into the cultural fabric of Malang City. Studies by Faur and Ban (2022) underscore the role of destination management organizations in promoting unique tourism products and fostering collaboration among stakeholders to enhance authenticity and

community well-being. Similarly, research by Yeung and Yee (2011) emphasizes that diversification, particularly through heritage and cultural tourism, contributes to increased revisit intention and destination loyalty. Moreover, Lo et al. (2017) highlight the positive influence of special events and cultural heritage on tourism destination competitiveness, especially when community support is actively mobilized. These findings suggest that integrating creative and cultural elements into agrotourism offerings not only appeals to diverse visitor interests but also promotes inclusive and sustainable tourism development.

In summary, the site demonstrates a strong baseline for diversity but holds significant potential for further development. Expanding activity options and incorporating seasonal and cultural elements would foster repeat visitation, deepen visitor engagement, and amplify social and economic benefits for the local community.

Legibility

Legibility refers to how easily visitors can understand and navigate a space, an important factor in shaping the overall tourism experience. Field observations revealed that the site's layout is relatively simple, with harvesting plots, kiosks, and educational areas organized in a linear pattern. While this facilitates basic navigation, signage was found to be minimal and inconsistent in style. Several directional boards were faded, and some activity areas lacked clear markers, causing confusion for first-time visitors. One visitor explained:

"We had to ask staff several times to find the composting workshop. The signs were too small and not very clear." (Visitor 04)

This observation suggests that while the spatial structure is functional, the legibility of the site could be significantly improved through better signage and mapping. Managers acknowledged this issue, noting that they have received similar feedback:

"We are redesigning the signage to make it more colorful and to include pictograms so children and international visitors can understand more easily." (Manager 02)

From a design perspective, clear and visually engaging wayfinding systems not only reduce visitor confusion but also strengthen destination branding. Gavinho (2016) highlights that legibility contributes to positive visitor flow and enhances the learning experience, especially in educational tourism contexts.

Moreover, integrating interpretive panels that explain the history of the farm, sustainable practices, and seasonal crop cycles could deepen visitor engagement and support the site's educational mission. Effective interpretive design fosters cognitive, affective, and behavioral learning, which enhances the tourism experience and strengthens sustainability outcomes (Huang, Weng, & Bao, 2022). In agrotourism settings, informative signage and visual storytelling are not merely aesthetic additions—they serve as tools for place-making and environmental stewardship (Moscardo, 2015). This aligns with findings from Silaningsih et al. (2024), who showed that improving interpretation media in Gunung Wayang Agrotourism significantly increased visitor satisfaction and revisit intention. Incorporating interpretation into tourism infrastructure also supports participatory learning and aligns with the goals of sustainable tourism development by promoting awareness and behavioral change (Bramwell & Lane, 1993). Thus, interpretive panels are not only functional communication tools but also strategic interventions that link local knowledge, environmental values, and tourism education in a cohesive visitor experience.

In summary, while the site's spatial organization supports basic navigation, investment in more consistent, informative, and visually appealing signage—as well as interpretive materials—would improve visitor autonomy, extend dwell time, and create a more memorable learning experience.

Safety

Safety is a fundamental dimension of social sustainability, particularly in agrotourism settings where visitors interact with tools, plants, and sometimes livestock. Field observations

confirmed that the site is equipped with basic safety infrastructure, including first-aid kits, clear evacuation routes, and strategically placed fire extinguishers. Staff presence was also noted at major activity points, ensuring that visitors—especially children—were guided during hands-on farming activities. One staff member emphasized the need for a proactive approach to safety education:

“We feel it is necessary to hold a short safety briefing before activities start, so children are more cautious when using scissors or small hoes.” (Staff 04)

This perspective was echoed by a visitor who participated in a school field trip:

“The kids were excited, but some of them almost hurt themselves while harvesting. A quick demonstration at the beginning would have made it safer.” (Visitor 11)

The current system appears to prioritize passive safety measures (e.g., signage, emergency kits) but lacks a structured program for active safety orientation. Research in sustainable tourism underscores that safety briefings and active protocols are essential for accident prevention and enhancing visitor confidence. For example, Pásková & Zelenka (2023) emphasize that structured safety communication is a critical component of responsible tourism management, particularly in environments with physical risks. Similarly, Silva et al. (2023) found that pre-activity safety instructions and staff preparedness significantly reduce incident rates in nature-based and experiential tourism settings.

Moreover, the integration of digital safety tools, such as QR codes linked to multilingual video guides or interactive checklists, can improve comprehension across diverse tourist groups. Barreda et al. (2020) highlight that smart tourism technologies, including mobile-accessible safety content, enhance tourists’ perception of safety and positively influence their overall destination experience. This is supported by recent findings that destinations with visible, tech-enabled safety infrastructure are more likely to be perceived as trustworthy and well-managed (Mugion et al., 2021).

Versatility

Versatility reflects the ability of a tourism site to accommodate multiple functions and activities, which is a key factor in sustaining visitor interest over time. Field observations showed that the open spaces within the site are highly adaptable, serving not only as vegetable-picking areas but also as potential venues for educational workshops, family picnics, and community gatherings. The spatial flexibility was evident during weekends, when informal groups used the open lawn for small-scale events. A community representative highlighted this potential:

“We would love to use this place for youth training or cooking demonstrations, but we need better coordination and some logistical support to make it happen.” (Community Leader 01)

A visitor echoed this sentiment, noting that such activities could enrich their experience:

“It would be great if there were regular weekend events—like farmers’ markets or cooking shows—so each visit feels unique.” (Visitor 08)

Additionally, versatility contributes to economic resilience by creating opportunities for ancillary income generation through ticketed events, pop-up markets, and skill-sharing workshops. Lo et al. (2017) argue that incorporating special events and interactive activities strengthens destination competitiveness and community pride. Designing modular infrastructure—such as portable stages, tents, and flexible seating—could further enhance the adaptability of the site and support a regular calendar of events. This idea is reinforced by studies showing that modular, multifunctional designs not only support economic viability but also promote social cohesion and community engagement in urban and tourism contexts

(Prystuplyuk, 2024).

Moreover, insights from modular marine and coastal infrastructure research suggest that design flexibility and mobile-use potential can increase resilience to seasonal fluctuations and optimize usage of shared space (Xylia & Passos, 2023). While such examples are drawn from marine environments, the principles of modularity and multi-use are transferable to urban tourism assets, especially in community agroparks or cultural hubs. Together, these findings support a paradigm in which infrastructure is not fixed, but fluid—responsive to local needs and economic opportunities. The site demonstrates significant potential for multifunctional use, but this capacity remains underutilized. Establishing a structured event plan, supported by marketing partnerships and community coordination, could transform the site into a hub for seasonal celebrations and knowledge exchange, increasing repeat visitation and strengthening local economic benefits.

Participation

Participation is one of the most powerful indicators of social sustainability because it reflects the degree of local ownership and empowerment in tourism operations. Field observations revealed a strong presence of local residents actively engaged in multiple roles—working as farm laborers, guiding tours, managing kiosks, and running the on-site market stalls. This high level of involvement creates a sense of co-creation between visitors and the community, turning the site into a living social space rather than a purely commercial destination.

A resident described how participation has changed their perception of tourism:

“Working here makes us feel proud. We are not just workers but part of something that brings people to our village.” (Resident 05)

Managers emphasized that community engagement is central to the site’s business model:

“Local involvement is the key to our success. When residents take ownership, they help maintain quality and attract more visitors.” (Manager 01)

This finding resonates with Mbaiwa (2010), who highlights that community participation ensures that tourism-generated benefits are equitably distributed and strengthens social cohesion. Participation also enhances destination resilience by building local capacity and reducing dependence on external operators (Akdemir, 2020). Moreover, research shows that participatory governance models lead to higher trust and more inclusive decision-making, which in turn promotes long-term sustainability of community-based tourism projects. For example, Gopal (2023) underscores that inclusive community-based tourism fosters social inclusion, cultural preservation, and economic empowerment, especially when communities are actively involved in planning and benefit-sharing processes (Gopal, 2023). Similarly, Cahyaningrum et al. (2024) found that training and skill-building in tourism services—such as guiding, hospitality, and local product development—are essential to strengthen local ownership and ensure equitable growth (Cahyaningrum et al., 2024). Such empowerment not only boosts economic returns but also creates a virtuous cycle where community pride, local identity, and environmental stewardship reinforce each other over time (Novianty, 2025).

This illustrates how well-structured participatory models and local training initiatives can serve as cornerstones for sustainable tourism development. The site demonstrates exemplary levels of community participation, which not only increases economic retention within the village but also enhances authenticity and visitor satisfaction. Sustaining this momentum through capacity-building initiatives and transparent decision-making processes would help institutionalize participation as a cornerstone of the destination’s development strategy.

Social Actions

Social actions capture the extent to which a tourism site fosters collective initiatives that go beyond economic transactions and strengthen social bonds. At the vegetable-picking site, regular educational events such as organic farming demonstrations, composting workshops,

and open farm days were observed to play a significant role in encouraging interaction between visitors and residents. These activities transform the site into a platform for knowledge sharing and cultural exchange rather than merely a recreational facility. A manager reflected on the importance of these events:

“Education is a big part of what we do. Visitors should leave not only with vegetables but also with new knowledge about sustainable farming.” (Manager 02)

A local youth volunteer also expressed enthusiasm for more collaborative events:

“If we could have an annual farm festival, it would bring more people together and promote our products. It could become the highlight of the year.” (Youth Volunteer 01)

Such initiatives are consistent with findings by Lo et al. (2017), who argue that special events and collaborative programs enhance destination competitiveness and community pride. Beyond their economic contribution, these activities promote social learning, build environmental awareness, and foster a shared sense of responsibility for the land (Bramwell & Lane, 1993).

Moreover, research indicates that social actions embedded in tourism development can create multiplier effects—encouraging partnerships with schools, NGOs, and universities that expand the destination’s reach and attract diverse visitor groups (Faur & Ban, 2022). Formalizing an annual events calendar, including harvest festivals, culinary fairs, or educational competitions, would institutionalize these benefits and ensure continuity of community engagement.

Studies such as Zaenuri and Winarsih (2019) highlight that successful regional tourism events thrive when supported by partnership governance, where stakeholders—including local communities, government bodies, and private actors—share resources and responsibilities equitably. These partnerships, when sustained, can foster inclusive event planning and empower broader participation.

Additionally, Coca-Stefaniak and Bathgate (2013) emphasize that sustainable events not only contribute economically but also leave lasting legacies when integrated into broader urban and tourism strategies. Such an approach is vital to ensuring that festivals evolve beyond one-off spectacles into mechanisms for long-term socio-cultural regeneration and environmental stewardship.

Social actions at the site already provide a strong basis for interaction and education but hold significant potential for scaling up. Transforming ad hoc initiatives into structured, widely publicized events would amplify their social impact, generate repeat visitation, and position the destination as a center of community-driven sustainability education.

Equity

Equity is a crucial dimension of social sustainability, as it reflects the fairness of benefit distribution and inclusivity of access to tourism resources. Field observations revealed that the vegetable-picking site has created meaningful economic opportunities for a wide range of local residents—particularly women and youth—who are involved in harvesting, post-harvest processing, and running small market stalls. These activities contribute directly to household income and strengthen the local economy.

One young entrepreneur expressed how the site impacted her livelihood:

“Selling our homemade snacks here has doubled my income compared to selling only at the village market.” (Youth Vendor 01)

Managers also acknowledged that equitable participation is part of their mission:

“We try to give everyone a chance to contribute, from farmers to small food vendors, so the benefits are shared as widely as possible.” (Manager 03)

Despite these strengths, accessibility for people with disabilities remains limited. Field

notes indicated that ramps and inclusive pathways are either absent or partially constructed, making it difficult for wheelchair users to navigate certain areas. This gap was recognized by management, who indicated plans for improvement.

Equity in tourism is more than economic fairness; it also encompasses physical and social access. Ambrose, Buhalis, and Darcy (2012) emphasize that destinations must adopt universal design principles to enable full participation by individuals with varying abilities, ensuring that accessibility is embedded in all tourism offerings. Similarly, Camodeca, Almici, and Vannini (2022) demonstrate that Universal Design can contribute to both the economic and social sustainability of public institutions, linking inclusivity directly to SDG 10 (Reduced Inequalities) and SDG 11 (Sustainable Cities and Communities).

Moreover, improving physical accessibility through measures such as continuous ramps, tactile paving, and accessible restrooms not only enhances usability for people with disabilities but also improves the overall experience for elderly visitors, parents with strollers, and others with mobility constraints (Münch & Ulrich, 2011). These inclusive interventions are increasingly recognized as critical components of “tourism for all,” supporting broader social justice goals and reinforcing destination trust and loyalty among a more diverse visitor base (Fernández-Díaz et al., 2022)

Discussion

The findings of this study offer a comprehensive and nuanced account of the social sustainability performance of the organic vegetable-picking tourism site in Malang City. They reveal a destination that has laid down a solid foundation for community-based agrotourism, yet one that also faces persistent challenges in areas such as inclusivity, visitor management, and institutional linkages. The overall picture is not of a static tourism product but of a living, evolving social space that requires deliberate strategies to ensure that it fulfills its promise as a catalyst for education, empowerment, and sustainable livelihoods.

At the infrastructural level, the site provides what might be considered the “minimum viable product” for a peri-urban agrotourism facility: parking space, clearly marked harvesting plots, kiosks selling freshly harvested produce, and basic rest areas. These amenities ensure that visitors can engage with the farm in relative comfort, consistent with Pereira et al. (2024), who argue that infrastructure availability and quality are positively correlated with visitor satisfaction and dwell time. The cleanliness and functionality of these facilities suggest that the site is already operating above the baseline standard observed in many emerging agrotourism destinations. Suprianti and Dolorosa (2025) similarly found that the presence and maintenance of basic amenities—such as toilets, canteens, and packaging stations—significantly shape visitor perceptions in Singkawang’s agrotourism plantation context.

However, our findings also underscore that infrastructure alone does not guarantee social sustainability. Several gaps were noted that limit comfort and inclusivity, particularly for family groups. The lack of shaded resting areas, lactation rooms, and dedicated play areas for children reduces the appeal for multi-generational visits and may shorten dwell times during hotter parts of the day. One visitor explicitly pointed out the inconvenience of having to stand or wait in the sun while children completed activities, reinforcing Gavinho’s (2016) observation that amenities designed to support basic human needs—shade, rest, privacy—are essential to a positive tourism experience. Without such provisions, destinations risk becoming “stopover” locations rather than places where visitors linger and engage deeply. As Shree and Kaini (2021) demonstrated in the case of emerging destinations in South Asia, the lack of family-oriented infrastructure can significantly reduce the attractiveness of a site, even when its core offering is strong.

Accessibility emerged as a critical factor shaping who can benefit from the site’s offerings and who remains excluded. The farm is reachable within 30–40 minutes from the city center by private vehicle, and the access road is relatively well-maintained—conditions that many peri-urban tourism facilities in Indonesia do not yet enjoy. Yet, the lack of public transport connections or organized shuttle services means that visitors without private vehicles must rent cars, increasing the financial barrier to entry. This has implications for social equity, as it systematically excludes certain groups—students, elderly populations, low-income

households—from participating in the experience. Mbaiwa (2010) highlights that equitable access is a cornerstone of successful community-based tourism initiatives, since these ventures

are meant to distribute benefits widely and inclusively. Improving digital navigation also emerged as a pressing need: both visitors and staff reported confusion due to inaccurate online map pins, which resulted in lost time and phone calls to staff. The literature supports the importance of seamless wayfinding for visitor satisfaction, with Fernández-Díaz et al. (2022) emphasizing that digital accessibility is a crucial component of “tourism for all.” These findings suggest that transportation and navigation upgrades are not merely conveniences but essential

interventions to expand the social reach of the site and fulfill its mandate as a public-facing educational destination.

Connectivity—understood as the degree to which the site is linked physically, economically, and thematically with other tourism and community assets—was found to be an underdeveloped opportunity rather than a realized strength. The location is advantageous: it sits near culinary destinations, small markets, and homestays that could easily be integrated into bundled visitor experiences. Yet, these potential synergies remain largely informal and ad hoc, limited to occasional collaborations with local cafés for group packages. This reflects a broader pattern observed in Southeast Asia, where integrated tourism networks are still in their infancy (Karampela et al., 2021; Faganel, 2011). Pereira et al. (2024) argue that formalizing stakeholder networks is critical for amplifying economic benefits, creating shared marketing campaigns, and presenting a coherent experience to visitors. The absence of on-site maps or brochures highlighting nearby attractions also represents a missed opportunity to lengthen visitor stays and distribute spending more widely across the community. Strengthening connectivity would thus require institutional mechanisms—perhaps through the local tourism office or a destination management organization—to coordinate promotions, events, and cross-referrals between the site and surrounding businesses.

Visitor density data revealed a classic paradox: popularity brings both economic vitality and operational strain. During weekends and school holidays, the parking lot fills to capacity, harvesting plots host multiple groups simultaneously, and staff must manually schedule turn-taking to avoid chaos—conditions that create a lively atmosphere but also risk diminishing the quality of the visitor experience. Visitors reported long wait times and suggested time-slot allocations to better organize entry. Zhang (2021) cautions that unmanaged density can erode educational value and lead to “tourism fatigue” among both staff and visitors. This aligns with Zelenka and Kacetyl (2013), who argue that visitor management strategies—including carrying capacity assessments and timed entry systems—are essential to maintaining ecological and educational integrity. Recent studies (Oyetoro et al., 2025) even highlight the potential for AI-based reservation systems to dynamically adjust scheduling based on real-time conditions, a solution that could be explored to optimize flow while avoiding bottlenecks.

The site’s diversity of activities represents one of its greatest competitive advantages. Beyond vegetable-picking, visitors can participate in organic farming lessons, composting demonstrations, cooking classes, and guided tours that explain sustainable agricultural practices. These programs create what Mbaiwa (2010) describes as “experiential learning environments,” where visitors gain cognitive, affective, and behavioral insights rather than merely consuming a product. Many respondents expressed appreciation for the educational value of these offerings, noting that it inspired them to adopt organic practices at home. Still, the demand for more novelty is clear: visitors suggested seasonal events, cultural performances, and night markets as ways to encourage repeat visits. Akdemir (2020) supports this view, noting that diversification of tourism products can enhance inclusivity and draw in underrepresented groups. Lo et al. (2017) add that cultural heritage and special events have a measurable impact on destination competitiveness and visitor loyalty. Thus, a more structured and creative programming calendar could transform the site from a static destination into a dynamic cultural venue that evolves with the seasons.

Legibility the degree to which visitors can easily understand and navigate the space—was functional but not optimal. While the linear layout of harvesting plots, kiosks, and education areas facilitated basic orientation, signage was inconsistent and often faded. Several visitors reported having to ask staff for directions to workshops, detracting from the autonomy of the

experience. Gavinho (2016) emphasizes that well-designed wayfinding systems not only reduce confusion but also contribute to place identity and branding. Upgrading signage to be more colorful, pictogram-based, and multilingual would not only enhance usability for children and

international visitors but also reinforce the educational mission of the site. Integrating interpretive panels that explain the history of the farm, sustainable practices, and crop cycles could further deepen engagement. Huang, Weng, and Bao (2022) argue that effective interpretive media strengthen both learning outcomes and emotional resonance, leading to behavioral change that persists beyond the visit. Moscardo (2015) and Silaningsih et al. (2024) similarly show that interpretation acts as a tool for place-making, linking visitors cognitively and emotionally to the destination.

Safety considerations were generally addressed through the presence of first-aid kits, evacuation routes, and staff guidance, but interviews revealed that safety education was informal and not systematically integrated into the visitor experience. This gap is significant given that many visitors are children engaging with farming tools for the first time. Fernández-Díaz et al. (2022) note that safety in tourism must go beyond infrastructure to include behavioral protocols and information dissemination. Pre-activity briefings, child-focused demonstrations, and visual safety guides could significantly reduce accident risk while also building visitor confidence. Safety is thus not merely a compliance issue but a contributor to perceived professionalism and quality of service.

The versatility of the open spaces was observed to be high, but this potential remains largely untapped. Currently, the lawn and common areas are used occasionally for gatherings and school trips, but there is no structured programming to take advantage of this flexibility. As Faur and Ban (2022) argue, multifunctional tourism spaces can catalyze socio-cultural innovation by serving as venues for training, exhibitions, and seasonal markets. With better planning, the site could host farmers' markets, community art installations, culinary festivals, and agribusiness workshops, turning it into a hub of rural entrepreneurship and knowledge exchange.

Perhaps the most striking finding was the high level of community participation. Local residents are not passive beneficiaries but active co-creators of the visitor experience, working as farm laborers, tour guides, and market vendors. This aligns with Mbaiwa's (2010) and Beard's (2019) arguments that community involvement is essential for equitable benefit distribution and social cohesion. Such participation ensures that economic gains circulate within the village, building resilience against external shocks and reducing dependence on outside operators. However, sustaining this momentum will require capacity-building initiatives in areas such as hospitality management, marketing, and educational facilitation, to professionalize services and maintain quality standards as visitation grows.

Social actions—such as organic farming demonstrations, composting workshops, and school collaborations—emerged as important vehicles for linking the community with visitors in a meaningful way. However, these initiatives are episodic and lack a formal events calendar. Bramwell and Lane (1993) argue that consistent interpretation and educational programming are crucial for long-term behavioral impact. Developing an annual schedule that includes harvest festivals, farm-to-table dining events, and inter-school competitions would not only attract repeat visitation but also position the destination as an anchor for community-based education and cultural celebration.

Equity considerations reveal both achievements and shortcomings. On the one hand, the site has successfully created income opportunities for women and youth, which contributes to local economic empowerment. On the other, physical accessibility for people with disabilities remains limited, with incomplete ramps and pathways that prevent full participation. Meira et al. (2021) and Tomej & Liburd (2019) argue that inclusive design is not optional but central to sustainable tourism, as it expands market reach and fulfills ethical imperatives. Implementing universal design elements—continuous ramps, tactile paving, accessible toilets—would align the site with SDG 10 (Reduced Inequalities) and SDG 11 (Sustainable Cities and Communities), signaling a commitment to inclusivity.

Taken together, the findings across all eleven indicators (a–k) illustrate that socially sustainable agrotourism is a multidimensional endeavor that requires more than infrastructure

provision. It demands a deliberate synthesis of physical design, participatory governance, educational programming, and inclusive access. The Malang vegetable-picking site exemplifies the opportunities and challenges of managing peri-urban tourism in a way that harmonizes economic vitality with social equity and cultural integrity. By addressing the gaps in accessibility,

connectivity, safety management, and inclusive infrastructure while expanding its event programming and strengthening community capacity, the site can position itself as a flagship model of socially inclusive agrotourism in Indonesia. Such a model would advance the global agenda of SDG 11 and SDG 12, demonstrating how peri-urban tourism can be leveraged not only for recreation but for education, empowerment, and long-term community resilience.

Integrated Regional Development Implications

The results of this study have implications that extend well beyond the immediate performance of the farm tourism site. They suggest that such destinations can serve as critical nodes in a broader regional development strategy—one that links agriculture, education, tourism, and community empowerment in mutually reinforcing ways. By leveraging the strengths already in place and addressing the identified gaps, the vegetable-picking site can transform from a single-venue attraction into a driver of sustainable peri-urban development.

At the economic level, the site demonstrates its potential as a catalyst for rural–urban economic integration. Local residents are already involved as producers, vendors, and guides, which keeps economic benefits circulating within the community and strengthens household income. This local participation, if combined with structured capacity-building programs and formalized value-chain partnerships, could evolve into a small-scale rural economy that supports entrepreneurship, youth employment, and women-led microenterprises. Over time, this has the potential to reduce rural outmigration by offering dignified, meaningful work opportunities close to home—an outcome that aligns with regional policy goals to retain human capital and prevent excessive urbanization pressures.

From a social perspective, the site’s collaborative nature and community-oriented activities create a fertile ground for strengthening social cohesion and cultural identity. Regular educational events and hands-on experiences provide not only entertainment but also knowledge transfer, nurturing a more environmentally aware citizenry. Institutionalizing these events through a structured annual calendar could turn the farm into a learning hub for schools, universities, and NGOs. This would transform casual visits into a continuous cycle of engagement, where visitors return not just for recreation but for training, research, and cultural celebration. Such an approach reinforces the region’s branding as a center for sustainable agriculture and food literacy.

Spatially, the destination has the potential to anchor a network of tourism routes that link nearby homestays, culinary villages, and creative economy clusters. With better transport integration—such as shuttle services connecting to public transit hubs—visitor flows could be distributed more evenly, reducing congestion in city centers and channeling economic benefits into surrounding rural areas. This type of spatial strategy supports the development of polycentric tourism, where multiple nodes collectively attract and retain visitors for longer stays, thereby increasing regional revenue and diversifying its distribution.

Equally important are the implications for inclusivity and accessibility. Addressing physical barriers through universal design—ramps, inclusive pathways, and accessible toilets ensures that tourism benefits can be enjoyed by the elderly, persons with disabilities, and other underserved groups. Investing in safety protocols and visitor education not only protects participants but also enhances the reputation of the destination as a safe and reliable choice for families and school excursions. When implemented systematically, these measures strengthen the social license of tourism, making it more widely accepted and supported by both residents and external stakeholders.

At the governance level, this case highlights the importance of coordinated management. The current collaborations between managers, community leaders, and local businesses are promising but informal. Formalizing these into a destination management network potentially supported by local government or cooperatives could provide a platform for joint marketing, event coordination, and infrastructure investment. Such a governance structure would help balance commercial interests with community values, ensuring that growth does not compromise the authenticity and educational mission of the site.

Taken together, these implications point toward a vision of agrotourism as an engine for balanced regional growth: a sector that simultaneously strengthens local economies, educates the public, fosters social inclusion, and preserves rural landscapes. By aligning tourism development with spatial planning, transport policy, and community capacity-building programs, Malang City can position itself as a leader in integrating agriculture and tourism into

a single, coherent regional development agenda. The vegetable-picking site could serve as a demonstration project—showing policymakers, investors, and other communities that sustainable, inclusive growth is not only possible but replicable. Ultimately, the transformation of this site into a flagship agrotourism hub would contribute to a broader narrative of peri-urban resilience, where rural and urban systems are no longer seen as separate but as interdependent components of a dynamic regional economy. Such an approach supports the achievement of SDG

11 on sustainable cities and communities and SDG 12 on responsible production and consumption, providing a pathway for Malang to lead in innovative, community-centered rural revitalization.

4. Conclusion

This study evaluated the social sustainability performance of an organic vegetable-picking tourism site in Malang City using eleven indicators derived from the literature: availability, accessibility, connectivity, density, diversity, legibility, safety, versatility, participation, social actions, and equity. The findings reveal that the site has established a strong foundation for community-based agrotourism, particularly through its provision of core facilities, diversity of educational activities, and high level of local participation. These strengths contribute to community empowerment, visitor learning, and economic vitality, aligning the site with the broader objectives of SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production).

Nevertheless, several challenges remain. Limited public transport access and digital navigation gaps restrict equitable access, informal collaboration with nearby businesses reduces potential connectivity benefits, and peak-period crowding can affect service quality. In addition, basic signage and limited family-oriented facilities reduce the overall inclusivity and educational impact of the site. Addressing these challenges through targeted interventions—such as shuttle services, structured partnerships, time-slot management, improved signage, and expanded family-friendly infrastructure would significantly enhance the site's ability to deliver socially sustainable outcomes.

Overall, this study contributes to the growing body of literature on social sustainability in agrotourism by operationalizing a multidimensional framework and applying it to a peri-urban tourism context. The results provide actionable insights for destination managers, local governments, and policymakers seeking to design and implement more inclusive, participatory, and resilient agrotourism initiatives that benefit both local communities and visitors.

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