

The Smart Eco-Tourism: A Review for the Post COVID-19 in Malaysia

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Submitted: 10/09/2022 Accepted: 20/12/2022

Abstract: The spread of the deadly COVID-19 virus not only highlighted the shortcomings of the tourist sector but also opened additional opportunities for its future growth. This study identifies the effects of the pandemic on the tourism sector and the growing shift of rural travel after the pandemic through the new applications. This research adds to the body of prior research by identifying the definitions and challenges of rural tourism in various nations using a comprehensive literature review analysis. Thus, to respond to emergencies, the mechanism is needed for sustainable smart rural tourism, along with the pandemic prevention control standards through the cooperation of the government and other stakeholders. The current literature evaluation makes numerous recommendations for future rural tourism and pandemic preparedness studies. The revival and expansion of Malaysia's tourist industry may greatly benefit rural tourism.

Keywords: Sustainable Rural Tourism, Challenges, Post Covid-19, Smart Tourism

1. Introduction

The tourism sector is highly vulnerable to the external environment, frequently exposed to various threats, and affected by significant events. For instance, the tourism industry has suffered significant losses because of major disasters like the September 11, 2001, terrorist attacks, 2003 unique pneumonia, 2005, and the Zika virus outbreak before the 2016 Summer Olympics in Rio de Janeiro, Brazil. The sudden pandemic of COVID-19 has also severely impacted all economies worldwide. Pandemic prevention and control have reached a normalizing stage for COVID-19. Although the disease has been successfully controlled in Malaysia, its effects on the nation's economy have not yet subsided. Rural development resources can be efficiently incorporated into rural tourism, which is crucial for fostering regional economic growth during a crisis.

Sustainable rural tourism is not a novel concept in the literature, with case studies dating back to the late nineteenth century [1] [2]. Tourism in rural areas is still crucial since travelers seek more genuine and new experiences. Rural tourism has been frequently regarded as a means of promoting socioeconomic development [3] [4]. An accurate definition of rural tourism is challenging since it is a complex phenomenon, includes various activities, and varies from region to region [5].

Furthermore, there are not many studies looking into this issue. Since conceptualizing sustainable rural tourism is still challenging. The smart eco-tourism creation, management, and implementation claims that technology with rural tourism might serve as a cure for rural areas and urban regions revealed a degree of complexity [6]. As defined by Lane [7] [8], rural tourism uses the five aspects, i.e., usefulness, size, character, and design. For instance, research by [9] Nicola and McKenna have demonstrated that rural tourism may occur in metropolitan locations that include rural components in actual rural areas. According to several studies, demand for tourism changed due to the pandemic favoring more considerate and beneficial activities. The urban spectrum has widened to embrace rural and traditional qualities for sustainability with technological usage [10-14].

Smart eco-tourism offers a significant potential to satisfy the need of post-pandemic travelers. Travelers seek relaxation and transformation in a natural setting or engage in activities that advance their physical and mental welfare [11-14]. The Movement Control Order (MCO) and travel restrictions related to the COVID-19 pandemic have affected Malaysia's tourism and hospitality sectors. Notably, Malaysia's capacity to sustain its economy will be hampered because the tourist sector's recovery is likely to extend for several months.

From existing literature, this study intends to define rural tourism and highlight the issues mentioned in the studies. It is also proposed that technology usage in rural tourism can be used as a strategy to recover any country's tourist industry during the post-pandemic era. This complexity must be highlighted as the potential expansion of rural tourism in the present situation of COVID-19 and the future. Both the revival of traditional culture and the revitalization of rural communities are significantly influenced by it. The impact of rural tourism on the pandemic and post-pandemic periods has been studied. The enhancement of the rural tourist sector's emergency response system and the proposed targeted relief measures for the sector's recovery are crucial for the sector's

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recovery and high-quality development. Through the literature evaluation, this study will support the growth of smart rural tourism after COVID-19.

1.1 Tourism Sector Malaysia during COVID-19

COVID-19 has drastically affected Malaysia's economy, especially the travel and tourist industry. The tourist industry contributes significantly to the income of the Malaysian economy. Tourist expenditure generated MYR 86.1 billion in revenue in 2019, an increase from MYR 83.1 billion in the same period in 2018 [15]. Despite its steady and optimistic expansion, the travel and tourism industry is highly susceptible to tragedies like terrorist attacks, natural disasters, and disease outbreaks.

The COVID-19 outbreak, according to Malaysian Prime Minister Tan Seri Muhyiddin Yassin ("Malaysia's PM Muhyiddin," 2020), cost the nation's tourist industry 3.37 billion Malaysian Ringgit in the first two months of the year. Due to the epidemic, fewer tourists visited Malaysia in 2020 (4.33 million), 2021 (134.7 thousand), and 2022 (98.05 thousand) [16].

The Visit Malaysia Year 2020 (VM2020) campaign was delayed because of the global pandemic. On March 16th, before MCO, a total of 170,085 hotel room bookings adding MYR 68 million, had been cancelled. By year's end, the association expects the losses to triple, as reported by the Malaysian Association of Hotels (MAH) [17]. In addition, 4,888 hotels listed with the Ministry of Tourism, Arts, and Culture (MOTAC) are anticipated to close 30% of their doors, claims MAH [18].

Travel brokers also faced a possible liability of about MYR 500 million from clients seeking compensation, regardless of the cancellation and refund policies of various service providers [19]. MATTA also predicts that once the outbreak is ended, the nation's tourist economy would take up to 10 months, or at the earliest by June 2021, to recover and stabilize [20]. However, what will happen to the global travel industry is yet unknown.

History has demonstrated that pandemics immediately affect companies like hotels, restaurants, and airlines due to worldwide travel restrictions and personalized government interventions [21]. Notably, hotel occupancy rates decreased, business and vacation plans were cancelled, and industrywide layoffs occurred, leaving the foreign and domestic tourism sectors "lifeless" [22]. Although, some experts believe that the tourism industry needs strength and flexibility for post-crisis recovery. The tourism sector needs unique strategies to address long-term impacts, like the idea of sustainable rural tourism.

Several tourism scholars have stressed the need to create a crisis management strategy and the benefits of creating a strategic tourist communications plan [23-26]. For instance, the 9/11 terrorist attacks and the SARS outbreak influenced the global tourism industry, which led to changes in the sector driven by demand [24]. Reviewing the crisis' effects on enterprises is the primary management concern for crises impacting public health and safety [27]. Additionally, it is essential to comprehend what they anticipate from the problem brought on by the COVID-19 outbreak. Smart eco-tourism in Malaysia is the only option for a quick recovery for environmental sustainability.

1.2 Research Questions

The research questions and objectives for the current literature review analysis have been framed following the purpose of the study. The research objective of this research are as follows:

- i. To highlight the consequences of COVID-19 affecting Malaysia's tourism sector.
- ii. To identify the definition and challenges of sustainable rural tourism from the literature review.
- iii. To propose mechanism of smart eco-tourism for post-pandemic period.

2. Methodology

The keywords are used to search various academic resources to be more thorough in triangulating the findings [27]. The second step requires the creation of the research database's structure, which consists of the selection criteria, analytical categories, and changes after only a few samples have been evaluated. The third and final phase involves entering the data into the research database and creating summary tables for analysis. This method's dependence only on internet search results is acknowledged to have severe disadvantages.

This study used seven databases, including Science Direct, Scopus, Web of Science, and SAGE Publications. The first step of the search was restricted to the title, abstract, and keywords. It utilized the phrases "sustainable rural tourism," "definition of rural tourism," and "Challenges of Rural Tourism." It was possible to identify 1703 items because of this search. The findings were then reduced using two exclusion criteria in the subsequent stage.

The initial exclusion restricted the usage of English exclusively, while the second stipulation emphasized the quality of the material. The pandemic phase and the current post-pandemic period required all included papers to be published in peer-reviewed, reputable journals. After the duplicates were removed, there were 197 articles instead. Rescreening the articles in line with the eligibility and research field selection criteria provided by Xiao and Watson constitutes the third stage (2019) [28]. Pickering and Byrne [29] recommended that the reference lists of the publications be compared to the results of a Google Scholar search (2014). This process finally created 197 articles.

Finally, 20 studies were found pertinent and collected in tables 1 and 2 for the definitions and challenges of intelligent rural tourism. The recommended reporting items for systematic reviews and meta-analyses (PRISMA) flowchart illustrates the selection process (Figure 1). Two criteria were tabulated: publication details and research substance (2017-2022). Future studies can fix the flaw of not considering location or culture when comparing the definitions.

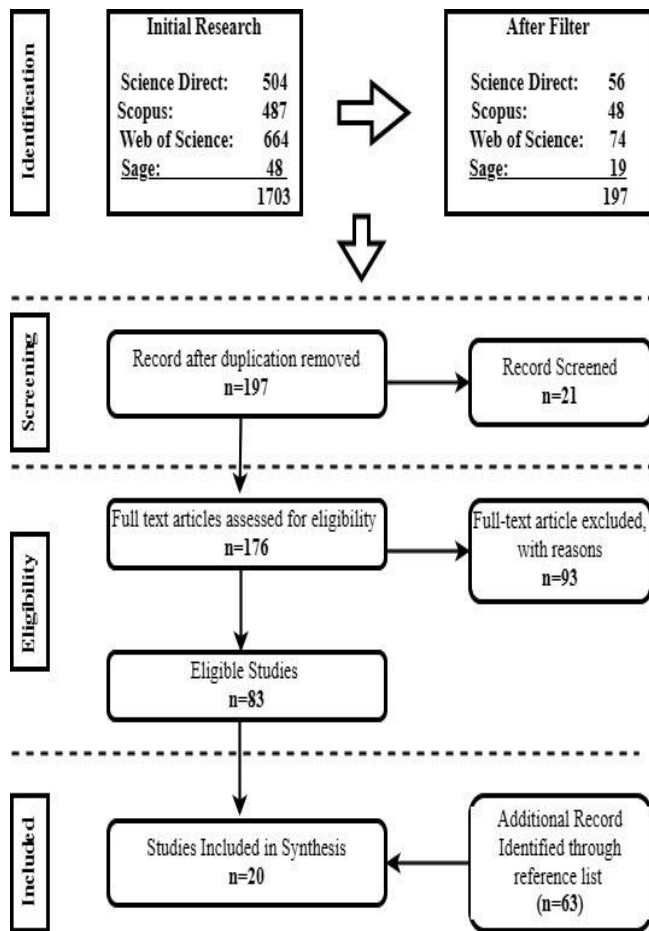


Figure 1. The PRISMA flowchart.

The 197 articles were produced for journals with a tourism perspective (Hospitality Management, Tourism Management, Annals of Sustainable tourism, and Journal of Sustainable Tourism), multidisciplinary publications (in Sustainability), and journals with a rural focus (Journal of Rural Studies, and Agricultural Economics). Only seven articles examined the concept of sustainable rural tourism.

The analysis shows that around 25% of research is available on sustainable rural tourism and its challenges. Many publications were published after 2001 and a lot less from 2015 to 2020 with updated data. The following summarizes the concepts and challenges for sustainable rural tourism.

Table 1 Sustainable Rural Tourism Concept Usage (2017-2022)

Year	Author	Country	Definition
2017	Prince [30]	Sweden	“Rural tourism is often conceptualized as a form of tourism functionally rural, displaying small-scale enterprises, traditional social structures and ways of living, agrarian economies, and non-urbanized settings [7].
2018	Hjalager <i>et al.</i> [31]	Denmark	“There is no uniform definition of rural tourism [7]. The current study broadly describes rural tourists as people whose activities focus on consuming rural experiences, cultures, landscapes, and artifacts that occur on farms or in rural communities (Woods, 2010). The chosen definition is wider than agritourism, which is normally understood as holidays on farms

2018	Kastenholz <i>et al.</i> [32]	Portugal	or closely related to farm owners and farm activities (Arroyo <i>et al.</i> , 2013)”. “Clemenson and Lane (1997) referred rural tourism as a series of niche activities within a larger niche activity (e.g., ecotourism, nature tourism, farm, adventure, sports, food and wine, and cultural tourism), resulting in a complex, multifaceted activity, marked by continuously increasing diversity [7]”.
2018	Kim [33]	China	“Rural tourism can be defined as a wide range of attractions and activities that the visitors directly experience in agricultural or rural areas including farm-based, sport and health, hunting and angling, educational travel, arts, and heritage tourism [8]”.
2018	Long & Nguyen [34]	Vietnam	“Rural tourism relates to all activities occurring outside municipal areas and encompasses the natural and cultural heritage of rural regions”.
2018	Ohe [35]	Japan	“Ohe (2011 and 2012) from an economic point of view, rural tourism is a farm business activity that internalizes positive externalities, for example, recreational and/or educational effects, along with farm products generated by farmers”.[35-38]
2020	Feng <i>et al.</i> [39]	China	“Although there are numerous concepts of rural tourism, its basic aspects include: taking place in rural areas; depending on the rural scenery and human activities as key tourist attractions; aiming to contribute to the development of rural areas; and being sustainable.”
2021	Fotiadis <i>et al.</i> [40]	UAE	“Rural tourism is an activity consists of other smaller subcategories such as farm tourism, and village tourism, which is growing to help to develop and promote the rurality tourism milieu of each rural region through a sustainable procedure that sets out to be consistent with natural, social and community values”.
2019	Khartishvili [41]	Austria	“In the context of this paper, we refer to Rural Tourism in Georgia as tourism in less-urbanized areas of the country, in traditional natural and cultural landscapes, based on local resources, such as traditional agriculture and material as well as nonmaterial cultural heritage.”
2019	Lo <i>et al.</i> [42]	Malaysia	“Rural tourism is a rustic destination which largely depends on the natural environment, customs, and traditions of local communities that creates natural experiences for tourists [43].
2019	Qiu <i>et al.</i> [44]	China	OECD (1994) defines “rural tourism as being in rural destinations and as being functionally rural. It is firmly based on the rural world’s special features of open space, contact with nature, rural heritage, and society”.

Table 2 The Challenges for Sustainable Rural Tourism discussed in year 2017-2022.

Internal Challenges for Rural Tourism		
Challenge	Reference	Description
Workforce	McComb <i>et al.</i> (2017) [6]	Poor understanding of tourism.
Marketing strategy	Marzonavarro <i>et al.</i> (2017) [45]	Few considerations to determine digital marketing. Dearth of information sources offered to the tourists.
	Dinis <i>et al.</i> (2019)	Inefficiency (Higher investment cost with lower return.
Physical	[4] Situmorang <i>et al.</i> (2019) [46]	lack of facilities for tourists, infrastructure, and other things. Having trouble getting there.
Sustainable strategy	Christou & Sharpley (2019) [47]	Because local communities may be purely profit-driven, success should be constrained.
	Shen <i>et al.</i> (2019) [35]	The location should continue to be agriculturally focused while also being held to a high degree of qualification.
External Challenges for Rural Tourism		
Challenge	Reference	Description
Tourist demand	Z. Su <i>et al.</i> (2022) [48]	Seasonality
Other competitors	Feng <i>et al.</i> (2018) [39]	Lack of establishing better competitive advantage against the competitors

3. Results and Discussion

3.1.1. Challenges for Sustainable Rural Tourism from Review

There are internal and external categories for the difficulties/challenges faced by sustainable rural tourism. *Internal difficulties* were defined as the constraints of internal resources, particularly regarding rural capital, such as lack of labour force, physical components, perceptual concepts, and supply-side initiatives [48]. Examples are a small staff, insufficient planning and management, insufficient marketing strategies and financial assistance, a lack of sustainable plans, and limited physical facilities [49][50]. Rural resources face external difficulties from factors outside or distinct, such as fluctuating visitor demand [51], risks from rivals, and possible conflict with external resources like investors outside the destination [47]. Table 2 summarizes the internal and external challenges from the articles from 2017 to 2022. Despite having different economic circumstances, this review revealed that both developed and developing countries' contexts were more concerned about internal difficulties and ignored external environmental challenges like as current pandemic. The review also identified several social challenges, such as a lack of cooperation in vertical and horizontal social networks, as evidenced by price wars, interpersonal conflict, and stakeholder mistrust [52]. Political issues were also observed, such as a heavy reliance on government help and different political interests [53] [54].

Others, in turn, stressed the need for more planning and management and additional hospitality-related abilities [46] [1]. Financially, poor return expectations frequently discourage people from making investments [55]. Physical difficulties are those that

rural tourism encounters concerning the prominent elements of a location. Access, for instance, may be challenging [46] [49]; hygiene and sanitation may be lacking [34] [35]; waste management may not be prioritized [38] [4], and infrastructure and amenities may not be adequate [4].

Finally, promoting sustainable rural tourism faced challenges due to a lack of sustainable strategies, raising concerns about resource commercialization and exploiting natural resources for tourism [56]. Rural attractions must maintain their authenticity, although this authenticity may be seen as lacking compared to metropolitan norms [35].

Furthermore, it was noticed that excessive economic success might jeopardize the long-term viability of rural tourism since it might cause locals' views to change to a more profit-based perspective. Additionally, it was underlined that a lack of mass market appeal and reliance on seasonal trends contributed to poor demand [48] [57]. According to Christou and Sharpley [47], economic instability caused by a lack of certainty in demand might lead to rural tourism being seen as an additional source of income [4]. The dominance of more established or well-known destinations over newly established rural tourist destinations has been noted in various studies. Thus, destinations may also struggle to establish themselves and triumph over rivals [38].

3.1.3 Sustainable Rural Tourism in Post COVID-19

The tourist sector is exceedingly delicate and a "sub-production business," but it is also incredibly robust and significant [58]. However, the pandemic also offers new chances for the sector's future growth and accelerates the process of high-quality development. The tourism industry will inevitably have dealt with the challenges of recovery and restructuring in the post-COVID-19 period.

The tourism industry, the government, travel agencies, business associations, and other multi-dimensional subject collaboration are urgently required to fully promote the recovery and revitalization of rural tourism in the post-pandemic period.

3.1.4 The Government Supportive Policies

The support of the government is essential for the recovery of industrial confidence. The situation faced by most rural tourist businesses is the risk of the capital chain shattering. The present pandemic has been successfully covered, and the tourist sector has led to a time of icebreaking. In contrast, the rural tourism sector has resumed operations as usual. For the capital chain to be safeguarded entirely, a certain amount of buffer time is still required for sustainable rural tourism. To categorize rural tourist firms hierarchically, the government must be flexible in its policy formulation.

First, it must establish specific support funds for businesses to give them operational subsidies and exempt some taxes from payment for businesses that the pandemic affects. Moreover, lengthen the window during which taxpayers can cut or avoid paying value-added tax. Second, we must use financial and credit tools to reduce losses suffered by rural tourism businesses, the burden on industry professionals, and the benchmark interest rate through the central bank. We must also encourage lenders to support businesses with preferential loans, lower loan interest rates, and lower loan thresholds [58] [59].

Develop a wage protection strategy for companies that the COVID-19 outbreak has seriously hit to stabilize employment. For rural tourist businesses to properly understand government aid plans, policy publicity must be improved and made widely known. The government must also aid businesses in utilizing these assistance programs, enhance industry direction and oversight, and support the tourist sector's orderly return to labor and output.

The government creates broad strategies, executes policies in many sectors, and provides guidance. It should take enterprise orderliness and the prevention and management of the COVID-19 pandemic into consideration. Fifth, to lessen the effect of such significant catastrophes on the tourist business, the government should immediately enhance the long-term system for crisis management and emergency response.

3.1.2 Industry Collaboration

After the pandemic, rural tourism businesses should restore consumer faith in travel. Initially, the tourism sector needs to loosen its restrictions on flexibility to protect tourists better and reduce the costs associated with their decision-making. Additionally, it should improve corporate social responsibility, create a favorable brand image, and give tourist marketing top priority. Dispel visitors' travel-related anxiety based on safe pandemic prevention and control. The second is that rural tourist businesses should boost income while cutting costs, lowering operational expenses, and accelerating cash return during exceptional times. Third, rural tourist businesses need to put in much effort to research the government's supporting policies, whether they come from local or national ministries. These policies may include loan financing, government subsidies, and easing the burden of taxes and fees [58]. Fourth, rural tourist businesses should determinedly improve their products, integrate new market demands and consumption patterns, specifically satisfy social distancing and health needs, accelerate tourism in the post-epidemic age, and fully use national laws. Finally, rural tourism businesses must keep open lines of communication, win the cooperation and understanding of upstream and downstream industry chain businesses, promote industry self-reliance, establish a "tourism enterprise community" [60], engage in cross-border joint actions, and create an emergency crisis response mechanism and action framework for consultation and joint construction.

4 Conclusion

Online services, including live streaming, online learning, and online offices, were particularly well-liked throughout the pandemic. It is anticipated that the COVID-19 pandemic will result in altered consumption habits. Create a few new and innovative formats. For instance, some tourist destinations employ technology during the pandemic to create online travel goods and new media to advertise and present cultural heritage places. Immerse yourself in the beauty of the motherland's many miles of rivers and mountains in rural regions. According to the "cloud tourism" qualities, it may be marketed during and after the pandemic and is not just relevant during that time. To improve the travel experience of visitors in rural tourism locations and to encourage the fusion of online services and offline organizations, rural tourism businesses can utilize the "cloud" to browse upstream and downstream. They can also employ augmented reality (AR) navigation and another technology usage to enhance the capabilities and levels of

comprehensive service. Rural tourist products should be promoted concurrently via innovative marketing strategies, venues for internet promotion, and new network media. The rural tourist industry has increasingly moved away from its one-dimensional development model, which depended on scenic views to generate profits. Future company models will be innovative [61]. It is vital to adapt to the Internet's growth trend, insistently promote online travel, enhance online service offerings, completely unleash the potential of tourist consumption, promote tourism consumption improvement, and then open a larger market for sustainable rural tourism consumption not only in rural regions but in urbanized areas.

Acknowledgements

We thank our teachers from [Universiti Tunku Abdul Rahman, Perak, Malaysia & University of Sindh, Pakistan] who provided insight and expertise that greatly assisted the research, although they may not agree with all the interpretations/conclusions of this paper.

Author contributions

Maryam Kalhoro: Contributed to the methodology, writing-original draft preparation, **Au Yong Hui Nee & Charles Ramendran SPR:** Conceptualization, validation., **Abdul Rehman Gilal, Farhan Bashir Shaikh & Obed Rashdi Syed:** Reviewing and editing.

Conflicts of interest

The authors declare no conflicts of interest.

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