



**Hungarian University of Agriculture and Life  
Sciences**

**Employing of Marketability, Sustainability, Participatory, and  
Disaster Mitigation in Rural Community-based Tourism (CBT)  
as Decision Support System (DSS) Assessment**

DOI: 10.54598/005340

The Thesis of the PhD dissertation

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Gödöllő, Hungary

2024

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# 1 INTRODUCTION

As a part of rural tourism, community-based tourism (CBT), in general, is the type of tourism that focuses on enhancing the relation between the local communities and the tourists (Mayaka, Croy and Wolfram Cox, 2019). The “community-based tourism” term itself is not new in the tourism field, but rather it is based on an old idea that has existed for decades (Goodwin and Santilli, 2009). The main idea of this type of tourism goes back to the traditional concept of tourism itself, which defined as the activities of people who move from one place to another for a temporary period to discover new things, ex-changing cultures, and learning different ways of life from the usual in these people’s home place (Manaf *et al.*, 2018). Therefore, it can be said that despite the CBT terminology, which is considered relatively new and modern for some people, it is an old concept of tourism that has been discussed and tested since antiquity.

Despite many tourism forms interested in studying the relation between tourists and societies such as eco-tourism, homestay, eco-adventure tourism, and agrotourism, CBT comes at the forefront of these prominent terms, either the academic society level or the local and governmental level (Rindrasih, 2018; Mayaka, Croy and Wolfram Cox, 2019). Finding a solution that is in accordance with the challenges of the moment and globalization requires ongoing understanding and innovation.

Support for decision-making requires prior knowledge and understanding of the problems, processes, and activities leading to a decision (Kersten, Mikolajuk and Yeh, 1999). The right choices in the management function will drive organizational success. This management challenge increasingly requires fast, effective, and efficient decisions to achieve organizational goals optimally and sustainable.

According to the previous explanation, this research paper will focus on presenting the community perspective and the situation in rural CBT

business. The finding then will be elaborated to align with the DSS approach concept. So, in terms of community-based tourism products (CBT) there are things that should be focused are: Marketability, Sustainability, and community participation (Participatory). Furthermore, because of the condition of many territories which is considered particularly prone to natural disasters (i.e.: earthquakes and tsunamis) and disasters due to human factors is also needed as well as analysis of Disaster Mitigation. This study's objective is to design a new approach for DSS to help community-based tourism business planning by these hypothesis and questions;

Hypothesis:

Marketability, sustainability, participation, and disaster mitigation management variables can play a role in forming a Decision Support System (DSS).

Questions:

1. How have the aspects of Marketability, Sustainability, Participatory, and Disaster Mitigation (MSPDM) can be used to analyze the attractions and potential facilities in rural CBT area
2. How has the generalization of MSPDM work as a framework of DSS
3. To what condition this MSPDM aspects can be accepted as DSS tool

## **2 LITERATURE OVERVIEW**

### **2.1 Understanding CBT Through Its Concept**

In this context, CBT has been presented as a social or community planning approach to tourism (Mayaka, Croy and Wolfram Cox, 2019). The understanding of sustainability in the tourism aspect of CBT needs to be updated given the increasing number of CBT-based businesses in rural areas. CBT plans were also used to develop a variety of products that were ultimately marketed to visitors (World Tourism Organization, 2004).

Furthermore, the tourism industry's contribution to the economy can be identified through visitor activities (Khademi-Vidra and Bujdosó, 2020).

## **2.2 Indonesia & Tourism Nowadays**

In Indonesia, CBT is an essential tool for achieving national sustainable tourism goals. There are 1302 rural community-based tourism (CBT) business entities in Indonesia, according to 2014 statistics; this number grew up to more than 1734 by 2018 and is expected to continue to grow (Reily, 2018). Of the 24.79 million poor people in Indonesia, 60% live in rural areas (BPS-Statistics Indonesia, 2020). This means that rural communities that have carried out rural CBT business activities and sustainability should be understood.

## **2.3 Rural Development and CBT In Europe**

Rural tourism is a business that continues to grow positively in the European Union. Apparently, roughly 15% of the total accommodation capacity of Europe is represented by rural tourism establishments (Ana, 2017). The broadening, deepening, and regrinding processes—which collectively make up the primary axis of rural development—are pervasive throughout rural Europe. Seeing how important the countryside is, the European Regional Development Fund (ERDF) as one of the five European Structural and Investment Funds also finds it useful by targeting rural tourism projects in the EU (Aytuğ and Mikaeili, 2017).

Comparative studies for such global business interests would be better if taking examples of cases in countries with significant differences in characteristics such as location, culture, economic level, and language. This facilitates in the establishment of links between two or more phenomena as well as the giving of sound justifications (Adiyia and Ashton, 2017). Hungary, which is a member of the European Union and Indonesia as an Asia's developing country, can be utilized to illustrate the various contrasts and phenomena between tourist business units.



## **2.4 Rural CBT Development**

Through local control of tourism businesses and activities, CBT is thought to contribute to cultural and environmental conservation and the redistribution of economic benefits among the most vulnerable groups, such as indigenous communities (Garcia Lucchetti and Font, 2013). Indonesia, which has many more rural areas than urban areas (Indonesian Ministry of Home Affairs, 2017), needs this approach by paying attention to tourism development down to the village level. Stipulation of destination forms' development also needs to pay more attention to local communities with a more pro-poor and comprehensive Tourism Value Chain/ TVC approach to involve local communities to work and maintain sustainability (Ndivo and Cantoni, 2016). Communities will work for tourism if tourism works for communities (Milne et al., 2012).

## **2.5 Comprehensive Tourism Development View**

The prominent thing in the analysis of the development idea of tourism activities is to minimalizing conflict of interest between stakeholders and the possibility of obtaining an increase in the achievement of the targeted aspects (Corral et al., 2016). In addition, the conditions for concept and work to make impact and stimulate legitimacy are the building of trust relationships with stakeholders (Piber et al., 2019). Meanwhile, in the tourism area development plan, it is important to know the initial conditions so that the direction of the development plan can be determined (Priatmoko & Purwoko, 2020; Purbadi, 2016). Lastly, the confidence to be able to open up to tourism professionals and work comfortably are: A business environment that facilitates discussions of two or more parties to create a typical, personalized and value-added impression; and opportunities for greater social relationship between tourism destination and surrounding local communities (Mathis et al., 2016).

## **2.6 Marketability in Rural Tourism**

Marketability will be a promising area for future studies, as mentioned by Kastenholz et al. (Kastenholz, Eusébio and Carneiro, 2018), who views marketing as a component of management in rural tourism business. Since marketing, according to Kotler & Armstrong (Kotler and Armstrong, 2008), comprises of numerous marketing mix elements, namely product, price, place, and promotion, targeting consumers—which is the strategy in Gad Mohsen & Dacko's research (Gad Mohsen and Dacko, 2013)—can be further expanded. This implies that there are opportunities for research on rural tourism in every aspect of marketing.

## **2.7 Sustainability in Rural Tourism**

Sustainable tourism and environmental topics have been linked in many earlier studies. This is consistent with Gao & Wu's view (Gao and Wu, 2017a). The need to include the concept of economy in sustainability was hinted at by Zapata (Zapata et al., 2011), Jin et al. (Jin, Hu and Kavan, 2016), and UNWTO (UNEP, 2011). In order for destination managers' organizations to be viable, this is a concern (Su, Wall and Jin, 2016). Thus, supporting the evaluation of communities taking part in CBT is another way to investigate the sustainable development (Zapata et al., 2011). According to UNWTO, the UNEP, the UN Foundation, and the Rainforest Alliance in 2008, sustainable tourism itself should have the following objectives: the maximum profit for local communities, reducing the negative impact on the local indigenous culture, reducing the damaging impact on the natural environment, and the existence of sustainability planning (UNWTO, 2011).

## **2.8 Participatory in Rural CBT**

Participatory means including interested parties in decision-making via both transparent and participatory procedures (Corral et al., 2016). Participatory also refers to involving the public. Besides authenticity, integrity and outstanding universal values, cultural relativism and the participation and involvement of the locals are also important requisites in the

evaluation processes of the tourism development (Harlov-Csorján, 2018). It will make visitors and locals villages mediate and negotiate the affections, memories and cultural/ historical meanings thus made and remade in this action, provides a deeper cognition of the agency of both visitors and residents (Zhang & Smith, 2019).

## **2.9 Disasters Mitigation Management in Rural Tourism**

The UN defines a disaster as a significant disturbance of a community or society that has widespread effects on human, material, economic, or environmental losses that are more than what the affected community or communities are able to overcome using their own resources (UNISDR, 2009). Mitigation seeks to prevent harmful events and, if possible, reduce the severity that occurs, and minimize loss and subsequent damage (Miller et al., 2016).

Immediate response needs to be applied in a disaster, but many activities occur before and after a disaster. Thus, local communities' role in designing and implementing disaster relief efforts is prominent (Kovács, Matopoulos and Hayes, 2010). Thus, mitigation products and services are very relevant objectives so that tourists can travel safely (Orishev et al., 2020). In the future, there is an urgent need to identify, analyze and better understand the multi-hazard, systemic and cascading nature of the disaster to have an integrated model that can be assisting in the preparation and response to disasters (Sriram, Dorasamy and Vipul, 2022). As a consequence, tourism development must pay attention to natural resources, environmental, community, and tourism impact factors to minimize future disasters (Su, Wall and Jin, 2016).

## **2.10 Decision Support System (DSS) In Rural CBT Business**

The decision-making process involves many factors. Svenson (1997) stated that a decision-maker might apply one or more decision rules on the set

of choice alternatives. DSS is expected to extend the decision maker's capacity in processing the mountain of information involved in making a decision (Marakas, 2003). In developing tourist villages or CBT businesses, decision-making is based on input from communal opinion. The information obtained is then processed by stakeholders, including the management team and the informal leader, to determine appropriate decisions (Deuchar and Milne, 2016; Rindrasih, 2018). Even some places where tourism development decisions tend to be top-down are government decisions (Cornet, 2015; Lor, Kwa and Donaldson, 2019). In several other areas, the findings in running tourism organizations are held by Destination Management Organizations (DMO)(Adeyinka-Ojo, Khoo-Lattimore and Nair, 2014; Abou-Shouk, 2018). If there is organized information quality and system quality, it will influence decision-making satisfaction (Bharati and Chaudhury, 2004).

## **2.11 Conclusion of Literature Overview**

In general, the marketability, sustainability, participatory, and disaster mitigation in one comprehensive scientific production that related to RT was poor and most of the articles published in this field discussed the aspects separately. This huge potential gap becomes an opportunity for further research to examine these four aspects as well as their relationship to RT. A more comprehensive notion of RT and marketability, sustainability, participatory, and disaster mitigation will be gained if we can encapsulate the entire concept that already exists and then fill it with research gaps that we will explore for answers to. Using the aspects of marketability, sustainability, participatory, and disaster mitigation for building a DSS tools approach is needed to pave the understanding of every stakeholder in CBT business comprehensive development.

## **3 MATERIALS AND METHODS**

This research uses mix-method bringing quantitative and qualitative approach. In order to create detailed and thorough understandings, mixed methods research purposefully combines the views, methodologies, data formats, and analytical techniques of both quantitative and qualitative research (Plano Clark and Ivankova, 2016; Creswell and Clark, 2017). The quantitative will be using VOSviewer and the qualitative will be using depth interview data. The variables used in this analysis to asses' contents are aspects of Marketability, Sustainability, Participatory, and Disaster Mitigation Management (MSPDM).

### **3.1 Types and Sources of Data**

Primary data is obtained and observed through field monitoring. Observation technique is the first step of the research (Duran, 2013), within this context, the whole of the events and fields of CBT destinations were considered as part of the observation activities. Stakeholders (local people, and business player) in-depth interviews conducted to fulfill assessment and indicators of MSPDM where available. Primary data taken from five CBT destinations in Indonesia and Hungary which is considered success in tourism activities. To reduce the impact of saturation, pragmatism, and a priori concerns in selecting qualitative samples, efforts are needed to reduce them (Sim *et al.*, 2018; Vasileiou *et al.*, 2018). Therefore, the effort made is to use parameters that can be agreed upon by many tourism businesses and researchers in the world by using UNWTO's recognition. The recognition from UNWTO is that we use the acknowledgement or achievements as the known rural tourism destination that UNWTO conducted. With the UNWTO's recognition as tourist village destination, the sample was selected. In this way, the effects of saturation, pragmatism, and a priori concerns in selecting qualitative samples are minimized. However, even though there are no provisions regarding the number of samples in qualitative research, it can

be recognized in common sense that the greater the number of locations studied can further improve the quality of the findings.

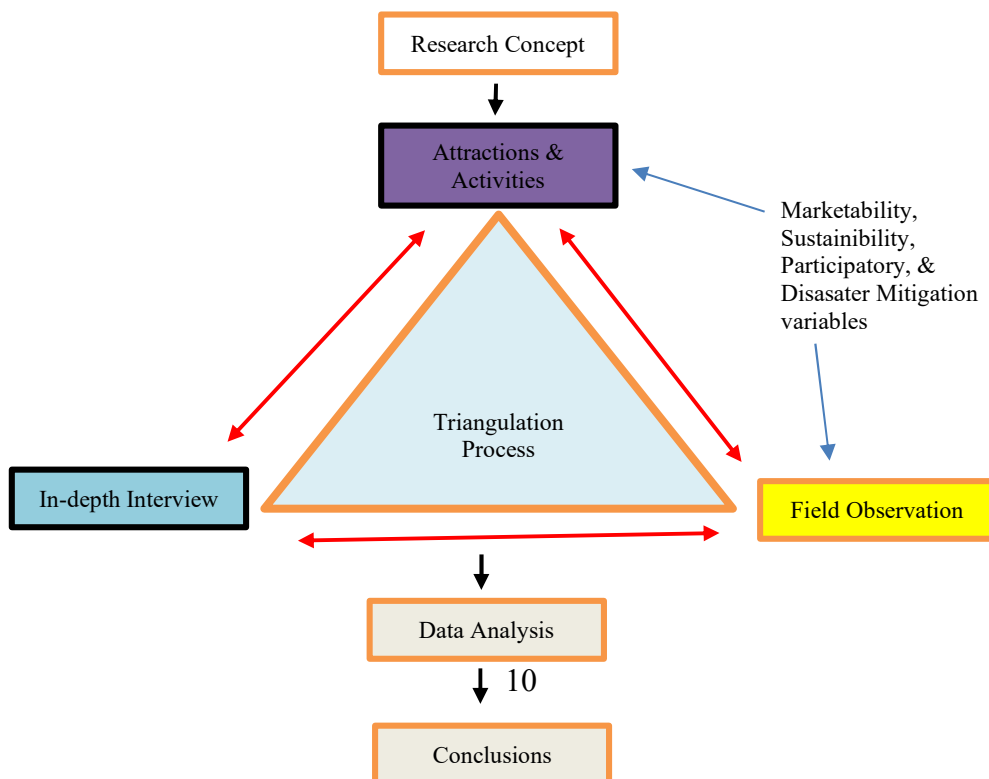
Primary data taken from three CBT destination in Indonesia and two locations in Hungary which is considered success in tourism activities. These locations are Nglanggeran tourism village and Pentingsari Tourism Village in Yogyakarta Province which received the 2017 CBT Award by the Ministry of Tourism (Ministry of Tourism, no date). The third location is Penglipuran village in Bali, which was awarded the cleanest village in the world in 2016 (Ministry of Tourism, no date). The fourth and fifth locations are Hollókő village and Tokaj wine region in Hungary. Primary data is obtained and observed through field monitoring. Observation technique is the first step of the research (Duran, 2013). Interviews were then conducted with selected CBT informants. Content analysis is used to support the understanding of existing objects or processes and their relationship with other information.

### **3.2 Quantitative Analysis**

Secondary data obtained in this study is from previous research literature from Scopus Database. Databases from Scopus will be processed quantitatively with the VOSviewer bibliometric analysis application. A bibliometric technique was employed in conjunction with library research and descriptive analysis. The goal of bibliometric analysis is to track the evolution of scientific article publishing and contributions (Zakhiyah, Suprpto and Setyarsih, 2021). In this study, researchers focused on international journal publication from Scopus database. The Scopus database is widely considered as the world's largest citation and abstract database. It meets stringent quality standards, including the Scimago Journal Rank (SJR), as well as being simple to access, download, and use data. Bibliometric research in a variety of academic subjects have also used the Scopus database (Elsevier, no date; Herrera-Franco *et al.*, 2021; Kabil, Priatmoko and Magda, 2021). Quantifying of attractions also made by using marketability, sustainability, participatory, and disaster mitigation aspects.

### 3.3 Quantitative and Qualitative Analysis

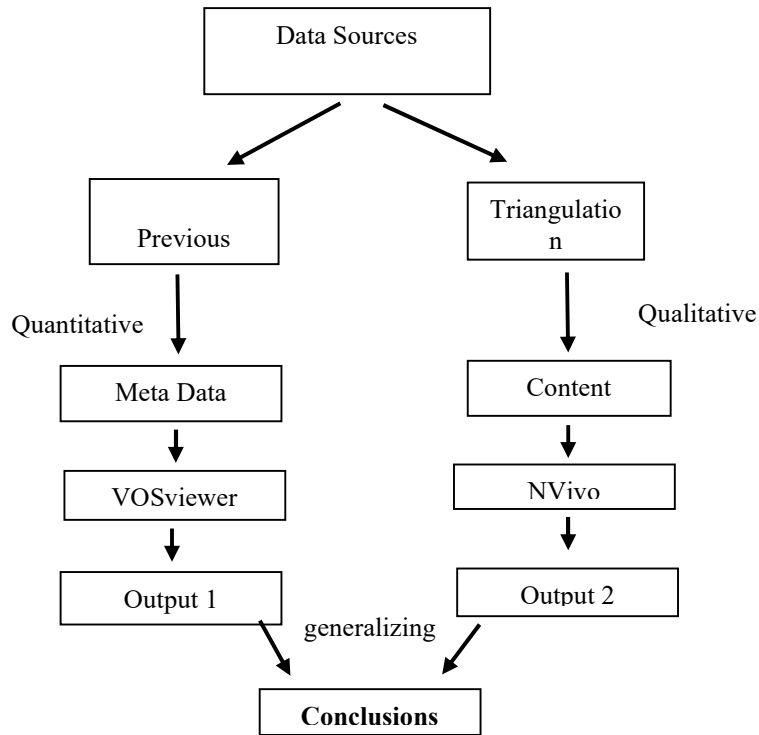
All contents is provided by local people and visitors in CBT area which will be collected by interview, observations, and document collections. The concept of bottom-up development presupposes that all sections of the community are adequately informed about the nature and consequences of tourism development and this opportunity become their participation on the course of that development (Deuchar, 2012). So researcher and local community will collaborate and elaborate about the attraction and other aspect in tourism bussines. The dataset used in this research was based on three primary sources: in-depth interviews, non-participant observation, and drawing the attractions and activities based on marketability, sustainability, participatory, and disaster mitigation aspects. Lastly, the triangulation process was used to collaborate with the data. Studies that use triangulation may include two or more data collection sets using the same methodology to add richness and depth to a research inquiry and explain different aspects of the phenomenon of interest (Heale and Forbes, 2013; Noble and Heale, 2019).



**Figure 1.** The process of qualitative work  
Source: Author, 2023



Finally all the combined research process can be seen as below.



**Figure 2.** Combined research process  
Source: Author, 2023

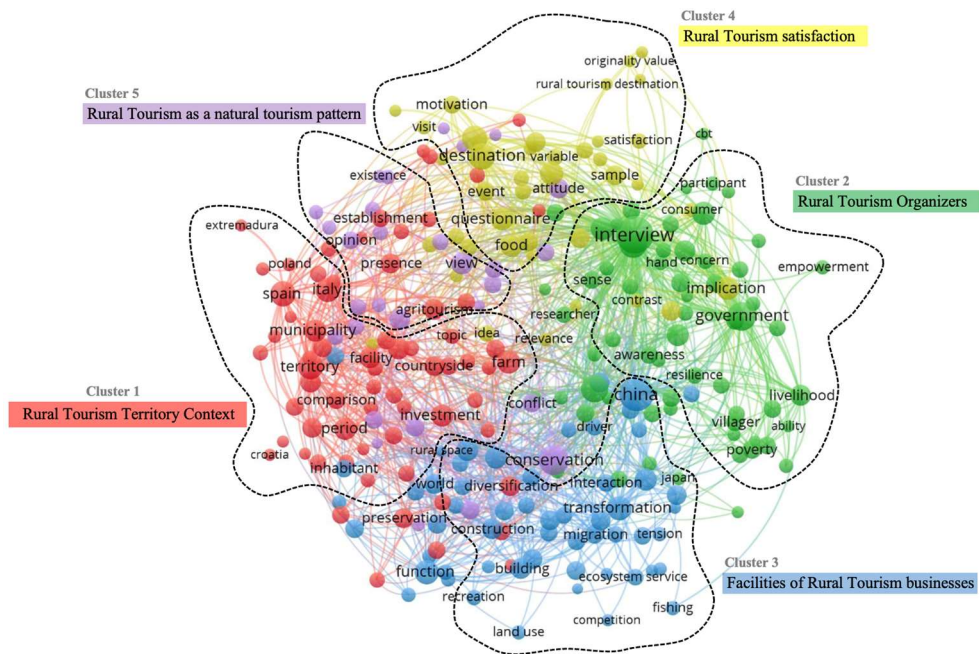
## 4 RESULTS AND DISCUSSION

### 4.1 Quantitative Analysis Results

Many definitions of rural tourism and finally make the term as an umbrella term (Ayazlar and Ayazlar, 2015). Rural CBT, one of which is characterized by slow tourism, seems to be an antithesis for more massive tourism activities, mass tourism (Guiver and McGrath, 2016). It is also considered a more responsible form of tourism since it places quality of life as its core (Goodwin, 2016).

Based on metadata search results on Scopus, 678 articles were obtained for 2011-2021 with the keyword 'rural village tourism'. These words were chosen because it is an umbrella term for community-based tourism. Metadata saved in .csv (Comma Separated Values) format and .ris (Research Information

Systems) will then be prepared to be visualized using VOSviewer software. First, based on the Scopus database, all 678 articles sourced from journals were selected but still adjusted to the titles and keywords analyzed, the mapping was obtained (see Fig.3).



**Figure 3.** Co-word analysis of rural tourism visualization

Legend: Color: represents a cluster of disciplines of interest in the research field; Nodes: represents keywords (the size of node represents the keywords frequency); Links: represent relations between keywords (keywords mentioned together in published articles); Colors: represent the temporal orders of appearance of keywords; Link Thickness: represents the words strength. Note: clusters formed based on three parameters in VOSviewer software (clusters resolution 1.00; minimum cluster size 1; merge small clusters).

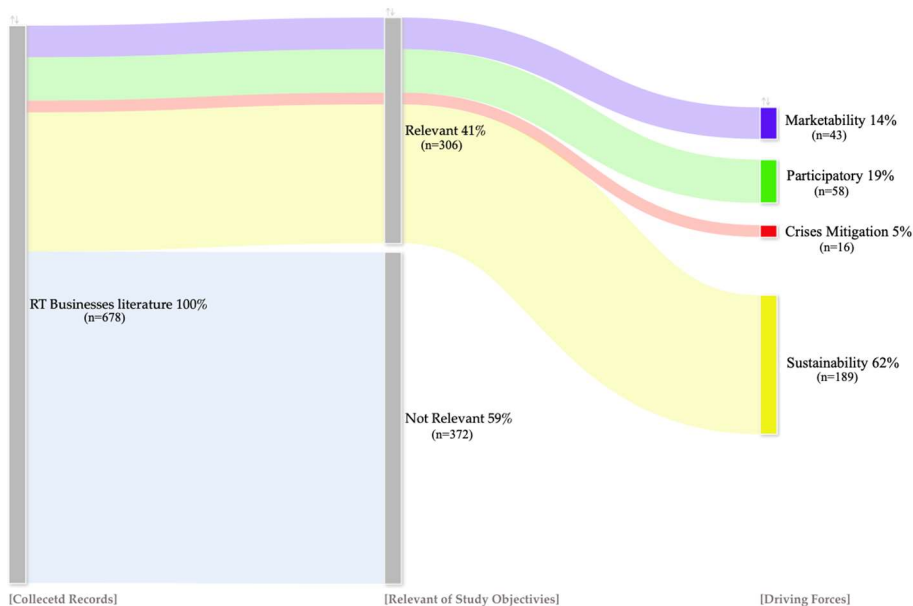
Source: Author, 2022 derived from VOSv

Using VOSviewer software, the co-words intellectual network has been extracted and divided into five main clusters, as shown in Figure (3) above. These clusters were formed based on the total link strength of the items/words in the total network.

#### 4.1.1 Rural CBT Businesses Literature Data Cleaning

Before analyzing the relation between rural tourism businesses literature and each driving force, a revision process was carried out by researchers to

identify whether the 678 records were directly relevant to this study's objectives or not. Consequently, 372 articles were excluded from the dataset. A total of 306 articles were relevant to this study's interest and these articles were divided based on the four driving forces (marketability, participatory, crisis mitigation and sustainability). Articles discussing the rural tourism businesses from a sustainability perspective appeared at the top of the list by 62% (n= 189), followed by articles that discussed the role of locals in the participation in rural tourism businesses by 19% (n= 58), then articles focused on rural tourism businesses marketing ideas and strategies by 14% (n= 43), and finally the articles addressing the idea of the ability of rural tourism businesses to mitigate different crises, risks and disasters (5%; n= 16), as shown in the following Figure (4).



**Figure 4.** Segmentation of the literature based on the MSPDM aspect  
Source: Author, 2022 derived from VOSy.

#### 4.1.2 CBT Relation with Marketability

Marketing which is considered one of the business tools will be something that needs to be associated with CBT since CBT is a business activity (Peña and Jamilena, 2011). Understanding ‘marketing’ as part of rural CBT

activities also leads to a deeper and more applicable understanding of real activities in the peripheral environment (Ajake, 2016). Marketing, according to Kotler & Armstrong (Kotler and Armstrong, 2008), comprises numerous marketing mix elements, namely product, price, place, and promotion, targeting consumers—which is the strategy in Gad Mohsen & Dacko's research (Gad Mohsen and Dacko, 2013)—can be further expanded. This implies that there are opportunities for research on rural tourism in every aspect of marketing.

#### **4.1.3 CBT Relation with Sustainability**

Sustainability aspects are also the main thing from tourism village activities (Okech, Haghiri and George, 2012). Thus, in context of tourism industry the natural environment, culture, and also in the business aspect should be sustain and preserve (Zhu et al., 2017). Sustainable tourism and environmental topics have been linked in many earlier studies. Cultural elements are significant since they have a direct impact on the region's competitiveness as well as economic development and performance (Bujdosó *et al.*, 2015). Furthermore, the need to include the concept of economy in sustainability was hinted at by Zapata (Zapata et al., 2011), Jin et al. (Jin, Hu and Kavan, 2016), and UNWTO (UNEP, 2011) should be addressed.

#### **4.1.4 CBT Relation with Participatory**

Rural livelihood as an activity that makes the community as the core of activity becomes an illustration of the participatory concept (Mshenga and Richardson, 2013). The role of the community in transforming their village into a rural CBT business entity will of course lead to various understandings and excesses (Sdrali, Goussia-Rizou and Kiourtidou, 2015). The villager's acceptance may also happen if they believe they are gaining benefits from the initiatives that help their community (Edit and András, 2022).

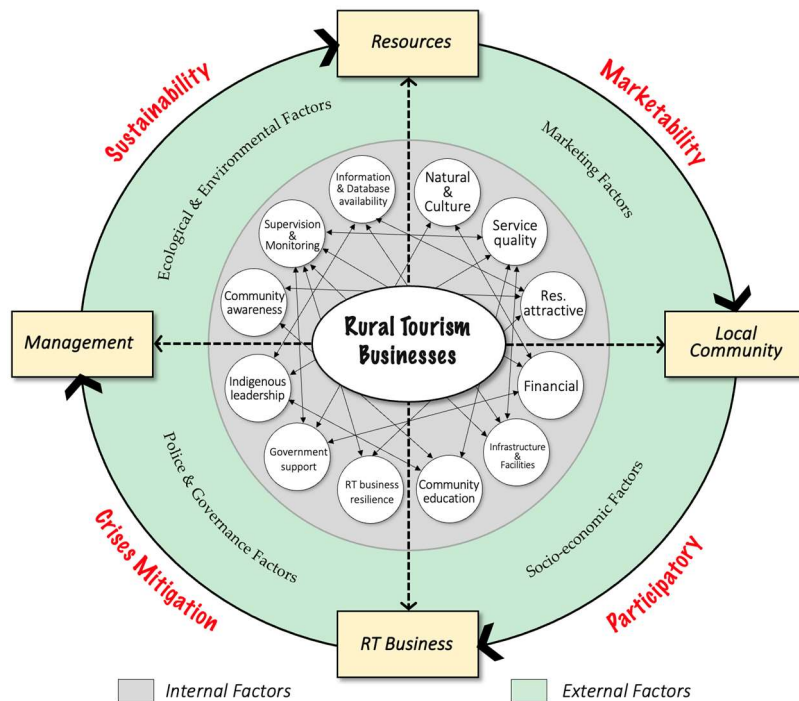
#### **4.1.5 CBT Relation with Disaster Mitigation**

We obtained 16 manuscripts that linked rural tourism businesses with crisis/disaster mitigation. The main large cluster in the context of research on

rural tourism businesses and crisis mitigation, contained these main keywords: interview, number, rural area, resilience, important role, resident, covid, and pandemic. The second cluster, focused on the protected areas in connection with recreation and sustainable development as a tool for crisis mitigation in the rural tourism industry and its businesses. That enhanced the perspective of rural tourism as a natural-based tourism pattern, which plays an important role in the crisis mitigation (Place, 1991; Rogers, 2002; Gallardo and Stein, 2007; Lanfranchi, Giannetto and Pascale, 2014). The third cluster discussed employment and its relation to biodiversity under the crisis mitigation concept in rural tourism. Biodiversity is an important issue in the future because many rural tourism activities depend on it and the environment has a positive determinant effect (Plokhikh *et al.*, 2022).

#### **4.1.6 Marketability, Sustainability, Participatory, and Disaster Mitigation (MSPDM) In Rural Tourism and CBT**

By analyzing the various literature that discussed the businesses creation lifecycle in different fields related to rural tourism such as agritourism/agrotourism, farm tour-ism, community-based tourism (CBT), rural tourism (RT) and community-based rural tourism (CBRT), we developed a conceptual framework for the rural tourism businesses including the main four driving forces that shaped the complex picture of these enterprises, as well as affected its developing, as shown in following Figure 15. The lifecycle of establishing a rural tourism business goes through four different stages, relying on four main elements: resources, local community, businesses and management elements (see Figure 5 below).



**Figure 5.** Conceptual framework finding of rural CBT lifecycle  
Source: Author, 2022

The process of establishing rural tourist businesses begins with the presence of some tourist resources and potentials in rural areas and territories such as stunning rural landscapes, local food productions, farms, local handicrafts and customs and traditions (Prestia and Scavone, 2018). Regarding the driving forces that control the aforementioned rural tourism businesses lifecycle, there are four core forces: marketability, sustainability, participatory, and disaster mitigation.

## 4.2 Qualitative Analysis Results

### 4.2.1 Lesson Learns from Nglanggeran Village, Yogyakarta, Indonesia

Marketability, Sustainability, Participatory, and Disaster Mitigation Management Indicators in Nglanggeran

The management of the Nglanggeran tourism village has made packaging for its tourism products in accordance with the life style prevailing

in the village. Their branding as a geopark area makes the uniqueness of geology combined with local culture which is difficult for other villages to imitate. The observation results show that Nglanggeran Tourism Village has carried out several marketing activities, such as marketing through social media, participation in tourism exhibitions, and collaboration with local and national travel agents. They have also worked with online travel agents to strengthen their promotional positioning. Village managers use several forms of IT tools to support tourism activities. These tools are websites, social media in the form of Instagram and Facebook, cell phones, and also the WhatsApp instant messenger. Its village gets local and foreign tourists. This was obtained because of its popularity when it received international awards at the ASEAN level. The majority of tourists are from various locations in Indonesia.

Officially there is no limit to the number of physical buildings allowed in Nglanggeran. However, for some sites there are restrictions on the construction of buildings due to customary regulations. Currently, the construction of physical buildings is mostly in the form of additional home stays for guests using brick and wood materials and prioritizing traditional designs. The number of tourists to the Nglanggeran tourist resort was never previously limited. However, over time and after being evaluated, it turns out that the negative impact has been received by the environment. Garbage and vandalism are the effects of too many visitors that cannot be controlled. Then management sets a limit on the number of tourists by increasing ticket prices almost triples. With the increase in ticket prices, the number of visitors fell to almost three times, but in fact income increased and waste became more controllable.

The people of Nglanggeran village really benefit from the status of their area as a UNESCO Global Geopark. They take advantage of this status in carrying out CBT activities. By having a landscape in the form of an

ancient volcano, the community sells this image as a tourism product. Several corporate service responsibility (CSR) programs held in Nglanggeran have increasingly made the community feel positive about CBT activities. Local understand that preserving the geosite is the main purpose of visiting this village. Initially, the provincial government helped build a water reservoir for supplies during the dry season. The government Tourism Office also helps facilitate technical assistance in the form of assistance for capacity building. Meanwhile the village government and district government are assisting with road infrastructure improvements.

The most important resource of the village is the geopark landscape. Traditional houses, orchards, and traditional culinary as well as local chocolate products are a mainstay. In addition to the uniqueness of the landscape, the use of biodiversity in the form of fruit plants is also an attraction for tourists.

The Management will report plans and results of existing tourism activities with regular meetings with residents and government. There is a transparent and accountable sale of entrance tickets to the area which can also be easily audited due to the existence of a profit-sharing scheme for the village and for the local government.

Through tourism village activities, the community's income, which was originally only in the agricultural and livestock sector, is now supplemented by community income from the tourism business. This opens up new jobs that can reduce unemployment in the region. The agricultural sector is also developing by planting durian and longan fruit because of the supplied irrigation waters from man-made reservoir. Additional income is also obtained from homestays established by residents and souvenir shops. In addition, the management also shares part of the profits with residents in the form of paying for health insurance and tuition assistance.



The Nglanggeran area has a risk of geological hazards. The main factors that influence the threat of landslides in this area are rainfall, slope, and thickness of the soil with the types of landslides in the form of slides and falls (Setiawan, 2019). Earthquake also a potential disaster however nothing can do to overcome the situation. For areas that are often traversed by tourists, the manager has hardened the road and made steps so that the risk of landslides is minimized. Another potential disaster caused by human error is an accident in a tourist area. For risks that can occur to tourists, for example being injured in the village, a rescue team from residents has been prepared to provide first aid or immediately take them to a hospital or health clinic in a car belonging to the management. Local residents also cooperate with the National Search and Rescue Agency, police, and rescue clubs to anticipate risks by humans.

#### **4.2.2 Lesson Learns from Pentingsari Village, Yogyakarta, Indonesia**

Marketability, Sustainability, Participatory, and Disaster Mitigation Managament Indicators in Pentingsari

Live in at Pentingsari is packaged in the form of experiencing and seeing first-hand the life of the village community. Tourists stay, eat, cook, go to the rice fields, and explore the village and interesting places around the village. The management realizes that in the future the competition will become increasingly stringent with other villages as well as changes in the typical tourists, so the management needs to make new products. For this reason, they also plan to develop interesting spots and activities that tourists can visit without having to live in.

The results of the analysis show that the Pentingsari Tourism Village has carried out several marketing activities, such as marketing through social media, participating in tourism exhibitions, and cooperating with local tourism parties. They also do direct selling in schools to offer village visits. The promotion model currently being used effectively is the use of social

media. Social media has become a channel that has begun to dominate the responses of potential visitors to get to know the village. All forms of information systems that support the establishment of the dissemination of information and communication are used by the community of the village.

The majority of visitors to the Pentingsari village are domestic tourists. Visitors came from various regions in Indonesia. They consist of students, family groups, company groups, or government agencies from other regions in Indonesia to conduct comparative studies or short course. This means that their market distribution has reached all of Indonesia. Foreign tourists also visit this destination but the number is not significant. They now have more of the chance to frequently host visitors from the Netherlands.

Provincial government regulations strictly regulate the use of paddy fields and green zones. This is beneficial for the village area because it will not be easy for someone or an investor to change the function of the land. However, on a more micro scale, namely in the hamlet area around Pentingsari there is already a shared awareness that the construction of physical buildings is in line with the community-based tourism business as far as possible.

The village government realizes that tourism activities carried out by the management of the Pentingsari Tourism Village bring benefits to residents and the environment. For this reason, the village provides loan allocations for village-owned land that can be used without changing its function. This means that natural resources will automatically be maintained without burdening and changing the landscape due to the capacity of tourists. The utilization of trees and other natural resources is governed by village ordinances.

Residents positively welcomed this community-based tourism activity. Even if the capacity threshold is not considered, residents want to always receive guests. However, because they are also aware that capacity

will be related to service quality, they understand that limiting the number of guests must be regulated.

Due to the explicit marketing theme of the Pentingsari village tourist destination as a cultural destination combined with mountainous nature, it follows that the tourists are typically those who are already aware of how they would feel. Another interesting thing is that typical tourists who come to visit tourist villages are well-educated tourists so that they will have a positive attitude while in Pentingsari. Enthusiasm and a respectful attitude are generally shown by tourists who come to the Pentingsari village and also another village destinations. Through the tourism office, the regional government of Yogyakarta facilitates technical assistance in the form of assistance for capacity building.

The local authority is assisting with infrastructure upgrades in the meanwhile, lending part of the land and property and renovating roads, for example. Currently, the village council even has plans to contribute funds to the development of new tourist attractions. The government strongly supports CBT activities in the Pentingsari village. This is because the government has an interest in increasing people's income while protecting culture and the environment.

The village always prioritizes the use of local resources. Starting from the workforce that empowers local residents, food and drinks, cultural arts performances, and also lodging, they always take advantage of what is in the village. It can be said that almost everything related to tourist needs always uses local resources. The use of non-local materials is usually only for items that cannot be made by residents, for example, watercolors for painting activities. At least once a month management and residents hold regular meetings to discuss activities that have been carried out, activities to be carried out, and finances.

Tourism village management uses various local resources to meet the needs of tourists as well as part of the attractions. This local diversity is manifested in the form of various kinds of local food menus, artistic attractions, and the use of local wood and bamboo materials for accommodation instead of steel structure buildings. They also use traditional farming tools to demonstrate traditional farming systems.

The financial advantages of CBT activities for locals are beyond question. This activity even explicitly makes residents improve their homes with standard facilities needed by tourists, for example toilets that meet health standards. Fulfilling the needs of tourists in the form of accommodation, food and drink, attractions, guiding which is fulfilled from local resources directly makes local residents get additional financial income. The additional income that is almost continuous every month from the many tourist visits makes the residents happy because it adds to their profits.

Located at the foot of Mount Merapi, one of the most active volcanoes in the world, come the biggest risk from a natural disaster which is the eruption of Mount Merapi. In collaboration with the National Disaster Management Agency (BNPB) of the Government of the Republic of Indonesia, management always updates the condition of the mountain. Due to the natural disaster risk, the management and village government have created evacuation routes and a team of residents who have been trained in handling natural disasters. For visitors, the risk of a non-natural disaster is typically posed by their own health situation. The potential of accidents at tourist village locations has been foreseen by management by setting up clinics for first aid treatment, even though it very rarely occurs. In addition, handling health risks also coordinates with government-owned or private health service centers in the form of general practicing doctors, clinics or hospitals. Teams from tourist villages use cars to deliver patients to get first aid for emergency health problems.

#### **4.2.3 Lesson Learns from Penglipuran Village, Bali, Indonesia**

Marketability, Sustainability, Participatory, and Disaster Mitigation Management Indicators in Penglipuran

The ambiance in the village is calm and well-kept. Visitors can see traditional homes with lovely gardens and traditional Balinese architecture. Visitors can engage with people, discover more about their culture, and get a glimpse into daily life. This village has a bamboo garden that is owned by the locals and is utilized as a water reservoir area, as building materials and as a tourist attraction. The results of the analysis show that Penglipuran Tourism Village has carried out several marketing activities, such as marketing through social media, participating in tourism exhibitions, and cooperating with local tourism parties. The role of travel agents has a central role because most visitors are tourists in the form of groups served by travel agent companies. Village managers use several forms of IT tools to support tourism activities. These tools are websites, social media in the form of Instagram and Facebook, cell phones, and also the WhatsApp instant messenger. Due to the international expansion of this village market and the influx of tourists from different nations, varied information offered on multiple platforms. Penglipuran Tourism Village continues to attract the attention of tourists both from within the country and abroad. This figure includes local, domestic and international tourists. The number of daily visits tends to vary depending on the season, holidays and other factors. On holidays season, tourist visits can reach higher numbers, exceeding the daily average.

In the Penglipuran village area there is a prohibition on the construction of new modern buildings. Existing traditional buildings are being preserved because customary rules require it. Village roads or neighborhood roads are also functioned as in the past, prohibiting motorized vehicles from passing. Making a parking place a bit further outside the conservation area is the answer for motorized vehicles or other contemporary

modes of transportation. This limitation automatically imposes a cap on the maximum number of visitors permitted to access the Penglipuran village area. The number of visitors can be automatically managed and split into balanced working hours when a parking lot has a particular capacity.

The utilizations of the village land are using as bamboo forest. It's used only by permitted with the consent of an agreement from the customary council and is protected by traditional institutions. They use this bamboo forest as a water reservoir, an air pollution filter, and a source of harvested bamboo trees for building materials. This means that the village community really pays attention to natural resource thresholds related to plant conservation through bamboo. Penglipuran village community began to be intensely involved in village tourism business activities since 1993. They realized that it was their culture and way of life that attracted tourists to come. This communal awareness encourages them to be protective of their culture and way of life in order to continue to attract visitors.

Visitors who have prepared their ideas of village conditions find themselves drawn to the Penglipuran village destination since its theme clearly positions it as a cultural destination. They understand that respecting local values is by acting quietly, not being noisy, and dressing appropriately. The majority of tourists who are groups have also been given a briefing by the tour guide while on the bus to Penglipuran village. This is even more helpful in understanding and respecting the cultural values and way of life of the villagers.

The Provincial Government of Bali through the Tourism Office helps facilitate infrastructure assistance. This includes building or repairing roads, sanitation, clean water, drainage systems, and other public facilities. The provincial government assists in the promotion and marketing of the Penglipuran village as one of a leading tourist destination in Bali. This involves marketing strategies, participation in tourism fairs, production of

promotional materials and promotion through social media or official websites. The government also provides training in tourism management, handicraft skills, customer service, and financial management. This helps improve the quality of service and the traveler experience.

The primary Penglipuran's asset is the village atmosphere, which consists of specially designed and tidy physical facilities. Traditional houses and village alleys that have unique landscapes are the main attraction for the majority of tourists and are irreplaceable. In addition to the unique architecture and landscape, the use of biodiversity in the form of herbs and fruits is also an attraction for tourists. In this case residents sell herbal drinks and also durian fruit for tourists. The existence of a communal bamboo garden area is also maximized as part of a tourist attraction. Visitors are also offered to learn about conservation through the use of bamboo trees.

The tourism village management, which reports to the village leadership and community, manages the business operations in Penglipuran. Management will report plans and results of existing tourism activities with regular meetings with residents. The sale of entrance tickets to the area which is transparent and accountable can also be easily audited due to the existence of a profit-sharing scheme for the village and for the Balinese government. The provincial government also has the responsibility to oversee and regulate the operation of the village. This includes ensuring adherence to safety, quality and hygiene standards. The provincial government can also assist in formulating regulations or policies that support the development of sustainable tourism villages.

The uniqueness way of life of Penglipuran has become communal awareness. Local regulations in the form of customary rules as well as national regulations stipulate Penglipuran Village as a conservation area with its unique characteristics. This means that local uniqueness will continue to

be protected and it will not be easy to replace it with content from outside the village.

The service provided to tourists and businesses serving other businesses is the most visible benefit. Profit sharing has also been regulated in a transparent manner using mutually agreed profit sharing. Some of the profits aside from paying the village residents who are involved in tourism activities are also returned to the residents, including to finance traditional and religious ceremonies which require a lot of money.

Natural disasters generally infrequently impact Bali. For the risk of strong winds, the residents make the community bamboo forest as a windbreaker as well as a water reservoir, and prevent air pollution. Residents also use bamboo for their houses so that they are relatively safe from earthquake shocks because bamboo is more elastic than concrete. Fire is just another possible catastrophe brought on by human error. In order to prevent a fire from spreading to neighboring homes, locals build their homes at a specific distance in anticipation of this calamity. To help guests stop the infection from spreading, the village also offers hand sanitizers. For risks that can occur to tourists, for example being injured in the village, a rescue team from residents has been prepared to provide first aid or immediately take them to a hospital in Denpasar, the city capital of Bali.

#### **4.2.4 Lesson Learns from Old Village Hollókő, Hungary**

Marketability, Sustainability, Participatory, and Disaster Mitigation Management Indicators in Hollókő

One of the main attractions of Old Village Hollókő is its traditional architecture. The buildings in this village are made of natural stones combined with wood, creating a warm and natural atmosphere. Apart from the beautiful village architecture, Old Village Hollókő is also famous for its well-preserved traditions and culture. The village is home to the Palóc ethnic community who have maintained their traditions for centuries. Visitors can



visit the museum inside the castle to learn more about history and life in this area. In general, the characteristics possessed by this destination present a unique appearance.

The results of the analysis show that Hollókő carries out several marketing activities, such as marketing through social media, participation in cultural events, and cooperation with local tourism authorities in Budapest, the capital city. In general, many promotional activities are carried out by the government by utilizing locations that are the center of attention such as airports or bus terminals.

Old Village management use several forms of IT tools to support tourism activities. These tools are websites, social media in the form of Instagram and Facebook, cellular phones, short message service/SMS, and also the Facebook instant messenger. In the Hollókő area there are also many information boards that make it easier for tourists. They have also used online reservations on their official website to make the reservation easier. The majority of tourists who travel to Hollókő are locals as well as travelers from nearby European Union nations and other countries. There are also quite a lot of local tourists, especially from Budapest and the surrounding cities.

In the old village Hollókő there is a prohibition on the construction of new buildings. This is because the area has been protected to become a heritage area supervised by UNESCO. Existing traditional buildings are being preserved because legal regulations require it. Some limited growth started again in 1960 and is now strictly controlled.

Natural resources are carried out by maintaining existing vegetation in Hollókő. Trees were maintained and local flowering plants were planted in many places in the Area. They also create a nature trail program that explores the biodiversity in the area. With the existence of a legal basis for preservation and tourism business interests, Hollókő is an attractive spot to manage. This means that the community is aware of attractive business

opportunities in the area and encourages the emergence of several activities including the emergence of local cultural attractions.

The visitors to the Hollókő village are people who have already prepared their perceptions of the location. Moreover, the concept of the destination is clearly positioned as an old architecture and history destination. They have also received information about the Hollókő theme from various content, especially those provided by the Hungarian government. With Hollókő's UNESCO certification, visitors have a greater appreciation for cultural values and the preservation of the old the village. The Hungarian government really supports Hollókő as a proud destination. This is proven by the large amount of promotional content at their international airport, bus station, and certain public area. Hollókő seems to be one of the mainstay destinations besides natural hot springs which are one of the hallmarks of tourism activity in Hungary. Infrastructure development and building preservation in Hollókő are also fully supported by the government, including allocating funds from the European Union. In this condition, the form of preservation of natural resources threshold is to maintain cultural activities. They use local food menus, traditional children's games, knitting arts, bread and cheese making using traditional methods and styles.

In Hollókő, the majority of tourism-related businesses are run by either single people or specific company organizations. Since this region is under the government's direct control, the management of the old settlement of Hollókő comes under the jurisdiction of the local Hungarian government. This means that although local communities cannot directly oversee management accountability in detail, the conditions in European Union countries that are relatively transparent allow citizens to assess whether management actions are proper or not.

According to a report from UNESCO, the natural disaster potential for Hollókő is earthquake and hydrology/ rain/ water risk (UNESCO, 2014). For

the risk of earthquakes, there is nothing that can be done other than minimizing the impact after an earthquake. For the risk of hydrological disasters due to water, the government has repaired the drainage channels in the old village of Hollókő. Preservation of the forest around the Area is also carried out strictly to protect the entire area from environmental damage and landslides as well as wild animals. Another potential disaster caused by human error is fire due to use wood in most of the buildings. Residents anticipate this potential disaster by providing fire extinguishers. Fire management training has also been conducted between The Village Municipality of Hollókő, the Organization of Voluntary Fire Fighters and the local population (ERDF and INTERREG IVC, 2014). The government also provides hydrants at certain locations to anticipate fires risk.

#### **4.2.5 Lesson Learns from Tokaj wine region, Hungary**

Marketability, Sustainability, Participatory, and Disaster Mitigation  
Management Indicators in Tokaj wine region, Hungary

The Tokaj wine region in Hungary and Slovakia spans approximately 100 kilometers, offering rustic charm, scenic beauty, and traditional wine cellars. Authentic wine products showcase the region's rich history, with unique branding featuring images of grapes and wine bottles. Promotion involves a multifaceted approach, utilizing social media, exhibitions, and collaboration with local tourism. A Tourism Information System employs various platforms to share viticultural history and cultural experiences. Distribution sees a steady flow of domestic and international visitors exploring the region, contributing to its global appeal.

The Tokaj wine region prioritizes physical development thresholds by preserving architectural heritage and sustainable vineyard practices. Visitor numbers are strategically managed through various transportation modes, directions, and wine tasting reservations. Sustainable practices extend to natural resources, with an emphasis on environmental preservation and

biodiversity. Local communities actively engage in heritage preservation, and the government supports the region's infrastructure and promotional activities.

Leveraging local resources, Tokaj emphasizes its unique landscape, traditional winemaking, and indigenous grape varieties. Residents actively participate in selling local products, contributing to economic vitality. Local accountability is represented by elected members of parliament. The region takes pride in its wine uniqueness, traditional practices, and preservation of the distinctive character. Economic opportunities for locals are facilitated through winemaking, tourism, and culinary activities. Given the low likelihood of natural disasters, Tokaj also focuses on preventive measures, utilizing the landscape as a protective element.

#### **4.3 The Works Concept of MSPDM Generalizing**

Based on a bibliometric analysis as the systematic review in this research, it shows that the variables Marketing, Sustainability, Participation and Disaster Mitigation (MSPDM) are a concern for the narrative of the development and evaluation of CBT areas. Its corresponds to the preliminary research designed as the initial measurement instrument to determine the environment condition of the initial development area (Ani and Dewi, 2016; Saarinen, Rogerson and Hall, 2017; Lanya *et al.*, 2018; Priatmoko and David, 2020). Previous research also shows that the implementation of evaluation of the Marketability, Sustainability, Participation and Disaster Mitigation variables simultaneously has never been carried out and has only been carried out partially. Thus, this research will fill its gap.

Furthermore, based on observations of the history of the five rural CBT research sites, variable MSPDM is also used for long-term development strategies and monitoring and evaluation of the implementation of its development. This means that implementing the evaluation variables for

marketability, sustainability, participation, and disaster mitigation at the same time will result in a measurement that is comprehensive. Comprehensive assessments and measurements will help develop plans for a tourism area's sustainability and preservation.

## **5 CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS AND FUTURE DIRECTIONS**

### **5.1 Conclusions**

In this research, its hypothesis accepted that many Community-Based Tourism destinations use Marketability, Sustainability, Participatory, and Disaster Mitigation aspects as determining factors in the development and management of these tourist areas. These aspects are proven to make a significant contribution in increasing the attractiveness and sustainability of tourist destinations, as well as involving local community participation and disaster mitigation management.

The results of this study indicate that the aspects of Marketability, Sustainability, Participatory, and Disaster Mitigation are appropriate to be used as parameters in making a Decision Support System to support decision making in the Community-Based Tourism area. This framework can provide comprehensive guidance for managers in identifying the attractiveness and potential of facilities in CBT areas, as well as assisting in planning for sustainable development and management. CBT is proven to improve the economy as well as being a tool for cultural and environmental preservation. Learning from CBT locations that are considered advanced and independent, it can be seen that the Marketability, Sustainability, Participatory, and Disaster Mitigation (MSPDM) variables are critical variables that are always met and applicated by the managers of these destinations. In certain contexts, these Marketability, Sustainability, Participatory, and Disaster Mitigation aspects can be accepted as a Decision Support System tool in situations where

environmental and social sustainability, community participation, and disaster risk mitigation are important factors in decision making related to development and management Community-Based Tourism area. This finding is also in line with studies at other locations based on quantitative data in the literature review.

This research provides a valuable contribution in strengthening understanding of the importance of involving Marketability, Sustainability, Participatory, and Disaster Mitigation aspects in decision making in the Community-Based Tourism area. By combining relevant theories and the results of this research, it is hoped that more effective and sustainable solutions can be found in developing Community-Based Tourism areas in the future. By looking at the results of previous research through systematic literature reviews and comparative observation studies at research locations conducted in several superior CBT destinations, a generalization approach can be accepted as part of the DSS tool approach.

In relation to the significance of the MSPDM variable as a predictor of a CBT destination's success, it can be claimed that this indicator can be used as an evaluation tool for a CBT location's development. As a result, the MSPDM variable is eligible for inclusion in the DSS if Marketability, Sustainability, Participatory, and Disaster Mitigation as a whole is acknowledged as a benchmark for a CBT destination's success. Stakeholders will be able to create more development plans and assess the efforts already made by establishing these indicators. This implies that subjective opinions expressed by stakeholders about a development or assessment strategy can be minimized. This conclusion also confirms that the generalization of MSPDM aspects as variables to be applied as parameters in Decision support systems is acceptable.

## **5.2 Recommendations**

Aspects of marketability, sustainability, participation, and disaster mitigation management are significant in community-based tourism industry as criteria for evaluation and development planning. Some of the recommendations that can be given are as follows:

1. Integrating Marketability, Sustainability, Participatory, and Disaster Mitigation aspects in the development of a Decision Support System (DSS): It is recommended that managers and policy makers in the community-based tourism area use this framework in developing DSS. A DSS that is integrated with these aspects will provide more holistic and up-to-date information, enabling better and more sustainable decision making.
2. Encouraging community participation in decision-making: Involving local communities in decision-making processes regarding the development and management of CBT areas is very important. This recommendation encourages participatory mechanisms that involve local communities in the planning, implementation, and evaluation of policies related to CBT. This will ensure that decisions taken take into account the interests and aspirations of local communities.
3. Strengthen cooperation and collaboration: This recommendation underscores the importance of collaboration between stakeholders in the development of CBT. Collaboration between the government, local communities, non-governmental organizations and the private sector will strengthen the implementation of Marketability, Sustainability, Participatory and Disaster Mitigation aspects in the development of the CBT area. Encouraging strong synergies and partnerships will enhance the success and sustainability of CBT.
4. Conduct ongoing research and evaluation: The final recommendation is the importance of ongoing research and evaluation in the development of CBT. Technological developments and socio-

economic dynamics will continue to influence the CBT area. Therefore, it is important to continue to conduct research and evaluate the use of Marketability, Sustainability, Participatory, and Disaster Mitigation aspects in DSS in order to adapt and improve existing practices.

5. Develop a decision support system (DSS) application based on information and technology (IT) that incorporates aspects of marketability, sustainability, participation, and disaster mitigation for the development of CBT areas so that the community and stakeholders may utilize it more easily.

By implementing these recommendations, it is hoped that the development and management of the community-based tourism area can become more measurable, sustainable, participatory and effective in dealing with existing challenges.

### **5.3 Limitations and Future Directions**

Limitations:

1. Generalizability: The findings and recommendations of this research may have limitations in terms of generalizability. The study focuses on a specific context and may not fully capture the diverse characteristics and challenges of all community-based tourism areas. Therefore, caution should be exercised when applying the results to different regions or contexts.
2. Data availability: The research may have relied on limited or specific data sources, which could impact the comprehensiveness and accuracy of the findings. The availability and quality of data related to Marketability, Sustainability, Participatory, and Disaster Mitigation aspects may vary across different locations and could affect the robustness of the Decision Support System. Future research should



strive to gather more comprehensive and reliable data to enhance the validity of the findings.

3. Scope of analysis: The study focuses primarily on the aspects of Marketability, Sustainability, Participatory, and Disaster Mitigation. While these aspects are crucial, there may be other factors and dimensions that contribute to the development and management of community-based tourism. Limiting the analysis to these aspects may overlook other important considerations that should be integrated into decision-making processes.

#### Future Directions:

1. Long-term impact assessment: Future research can explore conducting long-term impact assessments of implementing Decision Support Systems based on Marketability, Sustainability, Participatory, and Disaster Mitigation aspects in community-based tourism areas. This will help in evaluating the effectiveness and sustainability of the systems and provide insights into their long-term benefits and challenges.
2. Stakeholder engagement: Further research can focus on investigating effective strategies to enhance stakeholder engagement and participation in decision-making processes within community-based tourism. This can involve exploring innovative approaches, tools, and mechanisms to foster meaningful collaboration and shared decision-making among local communities, tourism operators, government agencies, and other relevant stakeholders.
3. Technology integration: The integration of advanced technologies such as artificial intelligence, big data analytics, and digital platforms can enhance the functionality and efficiency of Decision Support Systems. Future research can explore the potential of integrating these

- technologies into the systems to improve data collection, analysis, and decision-making processes in community-based tourism.
4. Policy and governance frameworks: Research can examine the development of policy and governance frameworks that promote the integration of Marketability, Sustainability, Participatory, and Disaster Mitigation aspects into decision-making processes at the governmental and organizational levels. This can include exploring policy incentives, regulations, and guidelines that support the implementation of sustainable and participatory practices in community-based tourism.

## **6 NEW SCIENTIFIC RESULTS**

1. The scientific results obtained from this research contribute to the field of community-based tourism by highlighting the significance and applicability of Marketability, Sustainability, Participatory, and Disaster Mitigation aspects as one comprehensive package in the development of Decision Support Systems (DSS). The study reveals that these aspects serve as crucial factors in enhancing the attractiveness and sustainability of tourist destinations, as well as promoting community participation and effective disaster risk mitigation management.
2. Through the integration of community-based tourism, social capital & community participation, and planning theories, this research establishes a comprehensive framework for the design and implementation of DSS in the community-based tourism context. The findings demonstrate that the parameters based on Marketability, Sustainability, Participatory, and Disaster Mitigation aspects effectively guide managers in identifying the potential and attractiveness of facilities within community-based tourism areas.

- Furthermore, the framework assists in the planning and management of sustainable development practices.
3. The research findings also emphasize the contextual acceptance of the Marketability, Sustainability, Participatory, and Disaster Mitigation aspects as essential components of a Decision Support System. Particularly in situations where environmental and social sustainability, community participation, and disaster risk mitigation play critical roles in decision making related to community-based tourism development and management, these aspects prove to be valuable tools in guiding effective decision-making processes.
  4. The integration of these aspects into Decision Support Systems demonstrates a significant step forward in promoting sustainable practices within the Community-Based Tourism sector. By leveraging the insights gained from relevant theories and the empirical findings of this research, future endeavors can focus on refining and expanding the applicability of these aspects in the development of innovative and efficient Decision Support Systems. These advancements will lead to more effective decision-making processes, resulting in the sustainable growth and management of community-based tourism destinations.

## **7 APPENDICES**

### **7.1 Appendix 1. References**

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## 7.2 Appendix 2. List of publications

### Q1 Scopus Scientific Journal Articles

Kabil, Moaaz, **Setiawan Priatmoko**, and R. Magda. 2021. “Blue Economy and Coastal Tourism : A Comprehensive Visualization Bibliometric Analysis.” *Sustainability* 13(7):1–25. doi: <https://www.mdpi.com/2071-1050/13/7/3650>.

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**Priatmoko, Setiawan**, Moaaz Kabil, Ali Akaak, Zoltán Lakner, Csaba Gyuricza, and Lóránt Dénes Dávid. 2023. “Understanding the Complexity of Rural Tourism Business: Scholarly Perspective.” *Sustainability* 15(2):1193. doi: 10.3390/su15021193.

**Priatmoko, Setiawan**, Moaaz Kabil, Vasa László, Edit Ilona Pallás, and Lóránt Dénes Dávid. 2021. “Reviving an Unpopular Tourism Destination through the Placemaking Approach: Case Study of Ngawen Temple, Indonesia.” *Sustainability (Switzerland)* 13(12). doi: 10.3390/su13126704.

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### Q2 Scopus Scientific Journal Articles

Kabil, Moaaz, **Setiawan Priatmoko**, Tibor Farkas, Jozsef Karpati, and Lóránt Dénes Dávid. 2023. “The Underdog Effect: Towards a Conceptual Framework for Enhancing Voluntourism.” *Journal of Outdoor Recreation and Tourism* 42(October 2022):100609. doi: 10.1016/j.jort.2023.100609.

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Kabil, Moaaz, **Setiawan Priatmoko**, Róbert Magda, and Lóránt Dénes Dávid. 2022. “Blue Economy and Coastal Tourism: A Comprehensive Visualization Bibliometric Analysis.” Pp. 41–65 in *Blue Economy and Resilient Development: Natural Resources, Shipping, People, and Environment*, edited by G. Tianming, V. Erokhin, K. Zaikov, J. V. Andrei, and J. Subic. Basel: MDPI.

**Priatmoko, Setiawan,** Susilo Budi Winarno, Moaaz Kabil, and Dávid Dénes Lóránt. 2022. “Hungary and Indonesian Tourism Business: Finding the Balance in Between.” Pp. 62–75 in *ECONOMIC AND BUSINESS TRAJECTORY: Indonesia, Asia and Europe*, edited by E. A. Wikurendra, B. Setiawan, and B. Mulyana. Sidoarjo: Delta Pijar Khatulistiwa.

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