

# **Destination Management Systems and Community Participation: Indonesian Cases**

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*“Do they not travel through the land, so that their hearts may learn wisdom and their ears may hear? Truly, it is not their eyes that are blind, but their hearts which are in their breasts.”*

**(Surah Al-Hajj, 22:46)**

*“And He has raised the sky (heaven) and imposed the balance, that you not transgress within the balance. And establish weight in justice and do not make deficient the balance.”*

**(Surah Ar-Rahman, 55:7–9)**

## Abstract

This research explores the adoption of Destination Management Systems (DMS) to support sustainable tourism initiatives, with a specific focus on enhancing community participation in Indonesia. Given the expanded role of Destination Management Organisations (DMOs) in managing tourism networks sustainably, the capability of DMS to foster collaboration among stakeholders is becoming increasingly significant. However, recent research often links DMS functions primarily to traditional marketing roles, resulting in the marginalisation of residents and informal businesses, both of which are critical to the tourism ecosystem. This study aims to bridge the gap between the collaborative role of DMO and the application of DMS in Indonesia, where rapid tourism development has raised sustainability concerns, including the marginalisation of certain community groups. By positioning DMS as a mediator for community engagement, this research addresses the core question: “How can DMS support the implementation of community participation in tourism development in Indonesia?”

To address this research question, three objectives are set: (1) to investigate how DMSs worldwide facilitate community engagement in tourism; (2) to examine the strategic implementation of DMSs in Indonesia's regional destinations, particularly in relation to strengthening community involvement in tourism development; and (3) to develop a community-focused DMS framework for Indonesia. This research adopts a sequential mixed-methods approach, incorporating website evaluation, interviews with DMS stakeholders, and a three-round Delphi method to address the research objectives. The theoretical frameworks employed include Services-Dominant Logic (S-D Logic), Social Construction of Technology (SCOT), and Motivation-Opportunity-Ability (MOA). These frameworks provide the theoretical foundation for understanding the context in which the DMS operates and offer an analytical lens through which the findings are interpreted.

Findings reveal that although DMSs contain functions capable of fostering community participation, their primary focus remains on marketing, often overlooking the needs and engagement of local communities. This condition also characterises DMS adoption in Indonesia's regional destinations, where top-down development approaches, shaped by socio-political structures and limited discourse surrounding DMS and DMO concepts, constrain their potential.

To address these issues, the study proposes a community-focused DMS framework tailored to the Indonesian context, promoting a collaborative model that integrates local knowledge and encourages active participation from destination communities. Furthermore, it highlights the importance of applying internal marketing strategies within destination management to strengthen stakeholder involvement and community well-being.

Overall, this research contributes to academic discourse by expanding the understanding of DMS capabilities in supporting community engagement and provides practical guidance for policymakers and DMOs to optimise DMS functions for the benefit of local communities. Future research directions are recommended to refine the proposed framework and address barriers to effective community participation in Indonesia's tourism development.

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**Note:** All the figures and tables are created by the researcher base on the field data unless otherwise the sources are mentioned.

## List of Initialisms

AI	artificial intelligence
AR	augmented reality
CBT	community-based tourism
CI	community informatics
CMS	content management system
CSR	corporate social responsibility
DIS	destination information system
DMO	destination management organisation,
DMS	destination management system.
FGD	focus group discussion
GDP	gross domestic product
GIS	geographical information systems
GPS	global positioning systems
ICT	information and communication technology
IOIS	inter-organisational information system
IOT	Internet of Things
IQR	interquartile range
IS	information system
MICE	meeting incentives, conference and exhibitions
MOA	Motivation–Opportunity–Ability (framework)
NGO	non-governmental organisation
NRI	(the) Network Readiness Index
NTO	national tourism organisation
OTA	online travel agents
RTO	regional tourism organisation
SCODT	social construction of digital technologies (theory)
SCOT	social construction of technology (theory)
SDGs	(the United Nations) Sustainable Development Goals
S-D	service-dominant (logic)
SET	Social Exchange Theory
SME	small and medium enterprises
SMTE	small and medium tourism enterprises
UGC	user-generated content
UNWTO	United Nations World Tourism Organization
VC	venture capital
WOM	word of mouth

## **Attestation of Authorship**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

**Muhammad Dhaifan Akbar**

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*“For indeed, with hardship [will be] ease. Indeed, with hardship [will be] ease.”*

(QS, 94: 6-7).

## **Ethics Approval**

Because this research involved human participants, ethical approval was required from the Auckland University of Technology Ethics Committee (AUTEC). Approval was received on 30 June 2021: Approval number 21/189

# Chapter 1. Introduction

This chapter establishes the rationale for the primary issue addressed in this PhD research: The ongoing challenge of achieving more sustainable forms of tourism involves addressing community participation issues through all available means, including the utilisation of information communication technology (ICT) platforms. The DMS serves as a primary ICT platform adopted by Destination Management Organisations (DMOs) to facilitate their responsibilities in managing tourism destinations. However, while the role of DMOs has expanded to encompass broader management functions, including the promotion of sustainable tourism practices, the Destination Management System (DMS) remains predominantly focused on traditional marketing functions. This research, therefore, aims to explore the capacity of DMS in enabling community participation, contributing to the implementation of sustainable tourism. After outlining the main problem and research objectives, this chapter concludes with a description of the thesis structure.

## 1.1. Rationale

Prior to the onset of the COVID-19 pandemic, tourism was one of fast-growing industries of the global economy. Global Tourism experienced significant growth in terms of visitor arrivals, with an approximate 4% increase in 2019 over the previous year, reaching 1.5 billion arrivals. This was consistent with a notable upward trend observed in the years 2017 and 2018, which recorded exceptional growth rates of 7% and 6%, respectively (UNWTO, 2021). In 2018, worldwide tourism receipts contribution reached USD1.5 trillion (UNWTO, 2019), 7.8% higher than the previous year. However, the global tourism industry suffered a significant downturn due to the globally applied travel restrictions in response to the pandemic. In 2020, the lowest number of international arrivals recorded in years was 406 million, 72% lower than the previous year. However, global tourism has swiftly recovered since travel restriction was easing, in some cases exceeding pre-pandemic levels. According to the UNWTO, global tourist arrivals reached 1.3 billion by the end of 2023, about 88% of the level before the peak of the pandemic in 2019. Global tourism receipts reached USD1.4 trillion in 2023, 93% of the receipts recorded in 2019 (UNWTO, 2024). While tourism's stable growth in the pre-pandemic period and its swift recovery post the COVID-19 pandemic period shows tourism's prowess as an economic sector globally, the significant setback of tourism growth during the pandemic demonstrates the sector's vulnerability.

The tourism industry can benefit both regional and national development, particularly in generating stable economic growth (Benckendorff et al., 2019). The significant economic impact of tourism leads numerous countries, especially those in the Global South, to

continue viewing the tourism sector as a means to foster economic growth (Ali, 2022; Pan & Dossou, 2020), even considering the decline experienced during the COVID-19 pandemic. Many scholars argue that tourism plays a significant role in the conservation of environmental and socio-cultural aspects of a destination, as it relies heavily on the quality of the environment and distinctive cultural experiences as its offerings, thereby supporting the objectives of sustainable development. (Sharpley, 2009, 2020; Yfantidou & Matarazzo, 2017). However, tourism practices have often been less sustainable, resulting in negative impacts on destinations globally, such as exacerbating climate change (Benckendorff et al., 2019; Hall, 2019; Ruhanen et al., 2015; Scheyvens & Biddulph, 2018). Prior to the pandemic, numerous urban tourism hotspots, including Barcelona, Amsterdam, Dubrovnik and Hong Kong, experienced significant overcrowding due to an influx of tourists, which strained local infrastructure and negatively affected residents, leading to the issue referred to as *overtourism* (Mihalic, 2020). Conversely, the travel restrictions imposed during the pandemic resulted in a lack of visitors to tourism facilities and attractions (*under-tourism*), which severely impacted the economic stability of stakeholders reliant on the tourism sector for their livelihoods (Markwell, 2020). While many scholars have suggested that the pandemic exposed the vulnerabilities of tourism and highlighted the need for more sustainable practices within the industry, the recovery of tourism post-pandemic has shown limited progress in implementing more sustainable tourism (Milano et al., 2023; Mkono et al., 2022).

The tendency of tourism practices to affect the destination and the host population both positively and negatively is linked to the notion of sustainability. However, the development of tourism is often evaluated through the lens of economic growth. Many scholars contend that this emphasis on economic criteria significantly contributes to the negative impacts of tourism activities (Benjamin et al., 2020; Hall, 2019; Higgins-Desbiolles, 2018). Thus, sustainable tourism ought to become a fundamental paradigm in global tourism development to ensure tourism contributes to *the three pillars of sustainability*—economic, social, and environmental—and ultimately reduces its negative impacts over time (Fennell & Cooper, 2020; Ruhanen et al., 2015). Despite its recognition, many debates exist surrounding the sustainable tourism concept, particularly related to its practicality (Maxim, 2015). To implement the sustainability concept globally, the United Nations (UN) proposed *Sustainable Development Goals* (SDGs) as a framework to guide global sustainable agendas and these goals have been adopted in various industries, including tourism (Hall et al., 2022). However, the three pillars concept of sustainability is widely adopted around the world, as it provides a more neutral and balanced approach compared to frameworks such as weak and strong sustainability (Ruggiero, 2021) and degrowth (Higgins-Desbiolles, 2018; Ruggiero, 2021). It also offers a broader scope of application than more specialised models like the

circular economy (Velenturf & Purnell, 2021) and regenerative approaches (Konietzko et al., 2021). In the context of Indonesia, the three pillars framework, encompassing economic, social, and environmental dimensions, is recognised as the principal foundation for sustainable development and has been institutionalised within the national legal framework.

In relation to sustainability within tourism, scholars and policymakers have introduced various proposals for an alternative form of tourism that emphasises sustainable tourism practices in the destination, such as inclusive tourism, responsible tourism and, more recently, regenerative tourism (Fennell & Garrod, 2022; Scheyvens & Biddulph, 2018; Bellato et al., 2023). While proposals such as the SDGs and alternative forms of tourism were introduced as global solutions for sustainability issues in tourism, their application at the destination level is still problematic. The ineffectiveness of these sustainable tourism initiatives at the destination level highlights the inherent natural and socio-cultural disparities among different regions, raising diverse issues that serve as barriers to unified sustainability solutions (Fennell & Cooper, 2020). The triple bottom line concept offers a framework through which social, economic, and environmental dimensions can be addressed by prioritising the urgency of each sustainability pillar in accordance with local conditions. As these conditions vary across destinations and evolve over time, the effort of implementing sustainable tourism will be a continuous struggle to answer various sustainability issues rooted in each tourism destination and new challenges that will emerge over time.

The implementation of sustainable tourism can be more effective at the destination level if local perspectives of the three pillars of sustainability are acknowledged (Bramwell et al., 2017; Fennell & Cooper, 2020; Mesci et al., 2019). Community participation in tourism can provide an avenue to integrate local knowledge in tourism at the destination level including in addressing sustainability issues. The host community of a destination is recognised as the principal owner of the land where tourism activities take place (Saarinen, 2019) and thus holds a democratic right to determine the course of the development of their land, including in the implementation of tourism. Within the context of tourism development, the community is viewed in the literature as a key stakeholder, as the immediate positive and negative impacts of tourism directly influence their livelihoods (Wondirad & Ewnetu, 2019). Tourism relies heavily on the destination's natural and socio-cultural resources, which are closely tied to the local community (Yfantidou & Matarazzo, 2017). Consequently, the community plays a crucial role in creating value for the destination by sharing their environment and resources for tourism activities. Tourism development, in turn, must enhance the wellbeing of the local community, reflecting a reciprocal relationship between the two. Community participation offers an avenue for both tourism and the local community to benefit mutually. Thus, the

concept of community participation in tourism development entails two dimensions: community acquisition of tourism benefits and the community's involvement in the development process (Basile et al., 2021).

Community participation in tourism development ensures that local knowledge, as well as community values and aspirations, are embedded in tourism practices at the destination, participatory approach also champions inclusiveness and democracy (Basile et al., 2021; Eyisi et al., 2021; Murphy, 1985; Timothy & Tosun, 2003). Community participation not only contributes to creating tourism that representing local identity but also fostering value of tourism for the destination community. The idea of community participation initially emerged from the western ideology in which the infrastructure and sociocultural environment is more developed than those in Global South (Tosun, 2000). Thus, the implementation of the community participation in the developing countries over the years have faced a practical, cultural and structural constraints (Bello et al., 2018; Bello et al., 2017; Cole, 2006; Saufi et al., 2014; Tosun, 2000; Towner, 2016; Wondirad & Ewnetu, 2019). Several characteristics of developing countries, such as high population growth, inequal social structures, low level of social and human capital, centralistic governance, high levels of corruption and low levels of democratic process, are factors that contribute to creating the barriers to community participation (Bello et al., 2017).

In Indonesia's case, for example, centralistic tourism governance such as the development of "ten priority" and "five super priority" tourism destinations have caused many tourism development challenges including community's issues. The "10 new Balis" and "the super priority tourism destinations" aim to attract 26 million international tourist arrivals by 2024 (Ministry of National Development and Planning of Indonesia, 2019) thereby cultivating the commercial value of the tourism sector. Indonesia's priority and super priority destination programmes entail an accelerated tourism infrastructure development in the regions that have natural and cultural significant resources to attract high-spending tourists. This aggressive tourism development in those destinations has caused several challenges for local community livelihoods, such as displacement of residents to make way for tourism facilities development and subsequent environmental degradation (BBC NEWS Indonesia, 2023; Reuters, 2021; WALHI, 2022). These issues highlight the marginalisation of local communities in Indonesia's tourism planning and development, a concern widely discussed in the literature. For instance, Cole (2006) found that villagers in Ngadha were excluded from tourism planning, leaving them unaware of potential opportunities of tourism development in their region. Similarly, Saufi et al. (2014) noted the lack of government intervention in enforcing local recruitment in Lombok's tourism sector limiting community participation in tourism. Although national and regional governments host annual forums known as "Musrembang" to gather input,

these discussions often remain superficial, with decisions frequently overturned by local leaders (Cole, 2006). This reflects the tokenistic nature of community participation in Indonesia, a practice common in many developing countries (Bello et al., 2017; Wondirad & Ewnetu, 2019).

Reflecting on the Indonesia tourism development issues and the significant relationship of tourism with the host community, the implementation of community participation in tourism development is essential to foster tourism that holds value not only for the tourists but also for the community. Community participation practices in Indonesia demonstrate that a participatory approach must foster meaningful involvement of community in tourism development to get the expected outcome, otherwise the practice is merely symbolic. The examples of rapid tourism development in Indonesia show that tourism can negatively impact destination and its community if not planned properly. Therefore, the development of tourism must adhere to the *three pillars of sustainability* – environmental, social and economic – to maximise the benefits of tourism while minimising adverse impacts on the host destination. Innovative strategies are needed to foster meaningful community participation, including the adoption of ICT (Bello et al., 2018; Tosun, 2000).

The adoption of ICT has been pivotal to the development of tourism, given the industry's information-intensive nature. For decades, ICT has been integrated into the tourism industry to address practical challenges. ICT adoption in tourism practices has driven the digitalisation of various business processes, including online bookings and digital marketing (Buhalis, 2003; Benckendorff et al., 2019; Cai et al., 2019). This highlights the significance of ICT as a catalyst for innovation in tourism practices (Trunfio & Campana, 2019). At the same time, social factors such as the integration of local knowledge, leadership and governance determine the effective adoption of ICT in a destination, particularly in addressing local issues (Buhalis, 2020; Ivars-Baidal et al., 2019; Trunfio & Campana, 2019). Thus, given its role in fostering innovation in tourism development, the effective adoption of ICT offers an avenue to support implementation of sustainable tourism.

The use of ICT to support sustainable tourism has increasingly been discussed since the late 2000s (Benckendorff et al., 2019; Gössling, 2017; Ruhanen, 2008). Ali and Frew (2013) identified various ICT applications, including DMS, that could enhance sustainable tourism practices. Following this, scholars have provided empirical examples of ICT adoption in areas such as visitor management (Valls & Roca, 2021), collaborative tourism planning (Barandiaran et al., 2019; Milne et al., 2016), promoting sustainable tourism products (Gössling, 2017), and ensuring financial security (Erol et al., 2022). However, almost a decade after Ali and Frew's (2013) proposals, Gössling (2021)

contends that the potential of ICT applications within sustainable tourism practices remains inadequately explored. Consequently, there is a justified need for further research into ICT's capabilities and the optimal strategies for its adoption in supporting the implementation of sustainable tourism initiatives. The strategic adoption of ICT holds significant potential to enhance destination management practices in alignment with sustainability principles. According to Zainal-Abidin et al. (2023), DMOs can leverage ICT-enabled solutions to fulfil their management roles more effectively, particularly in facilitating collaboration among tourism stakeholders to create destination value.

Conceptually, DMOs serve as the governing bodies responsible for overseeing the planning, management and organisation of destination resources as tourism assets (Sheehan, et al., 2016). Unlike conventional corporations, DMOs do not own the resources within the destination; rather, the host community is regarded as the principal owner of tourism commodities. Therefore, the main responsibility of DMOs should focus on facilitating the sharing of the destination's resources through stakeholder collaboration. Despite this, DMOs have traditionally been associated with a marketing role and, in many instances, continue to be characterised as destination marketing organisations (Corak & Zivoder, 2017; Gartrell, 1994; Pike & Page, 2014). While the concept of DMOs is universal, in practice, DMOs can take various forms that resemble governing bodies within destinations.

In Indonesia, the role of the DMO at the regional level is typically assumed by regional government agency (*Dinas*). However, in the case of Indonesia's "ten priority destinations", the DMO role manifests in different models. For instance, Lake Toba, Borobudur Temple, and Labuan Bajo are managed by an extended national government agency under the Ministry of Tourism and Creative Economy, known as the Tourism Authoritative Body (*Badan Otorita Pariwisata*). In contrast, some destinations are managed by third-party corporations; for example, Morotai and Tanjung Lesung are overseen by private companies, while Mandalika is managed by a government-owned company. While the term DMO is not widely used in Indonesia, these examples demonstrate the variety of organisations responsible for managing destinations in Indonesia, these organisations categorically should embrace the DMO concept.

Both scholars and policymakers have called for DMOs to move beyond their traditional marketing focus and embrace a broader management role to ensure the sustainability of tourism systems at destinations. Such a role would mainly be related to the sustainable use of resources and fostering community welfare, while also building a competitive edge for the destination (Corak & Zivoder, 2017; Gretzel, 2022; Zainal-Abidin et al., 2023). To effectively fulfil its proposed management role, DMOs would benefit from a paradigm shift from the traditional demand-supply model to a conceptualisation of destination as

complex network ecosystem adopting the service dominant (S-D) logic (Vargo & Lusch, 2008) and a knowledge-based destination framework (Trunfio & Campana, 2019). Therefore, in adhering to its management responsibilities, the DMO is tasked with facilitating connections among tourism actors within the tourism ecosystem networks, enabling them to co-create destination value. Alongside its traditional marketing functions, the DMO is also responsible for ensuring inclusive destination management. This involves promoting community participation to enhance the well-being of local communities through tourism.

In this research, a DMS is considered a vital component of the ICT infrastructure employed by DMOs to fulfil their roles and responsibilities within a destination. DMSs were initially developed with a primary focus on marketing, supporting the DMO in promoting tourism products and destination (Benckendorff et al., 2019; Pike & Page, 2014; Sussman & Baker, 1996). As the roles and functions of DMOs have evolved, correspondingly DMS needs to advance beyond their traditional marketing purposes. Nevertheless, empirical studies on the adoption of DMSs globally indicate that DMSs are still very much focused on their marketing functions (Le et al., 2021; Zehrer et al., 2005). In Indonesia, the concept of a DMS is still relatively unfamiliar, even though destination websites, which resemble the front face of a DMS, have begun to emerge. Most destination websites are integrated into broader government service websites, where the content prioritises government programmes, such as local regulations, and government-managed event. However, stand-alone websites such as Wakatobi Tourism, Banyuwangi Tourism, and Visit Toraja are more advanced and reflective of DMS characteristics. Despite this progress, the few existing DMSs in Indonesia remain primarily focused on its traditional role as marketing platform.

Several scholars propose that DMS adoption should advance beyond traditional marketing functions to facilitate collaboration among tourism stakeholders (Estêvão et al., 2020a, 2020b; Gretzel, 2022; Zainal-Abidin et al., 2023; Zehrer et al., 2005). However, these proposals predominantly emphasise the commercial dimensions of the DMS by narrowly identifying destination stakeholders as local enterprises and DMOs, while marginalising other segments of the destination community such as the residents and informal businesses, which are integral components of the destination ecosystem particularly in Indonesia context. This narrow focus highlights a gap between the evolving role of DMOs and the existing adoptions of DMSs. Previous studies have suggested that the objectives of DMS adoption should include support for sustainable tourism practices (Ali & Frew, 2014b; Sourak, 2015) and the reinforcement of community participation within destinations (Trunfio & Della Lucia, 2019). Nonetheless, there is a notable deficiency in academic discourse concerning DMS provisions for integrating the community dimension into its functionalities. Therefore, this current research attempts to

investigate DMS adoption related to the management role of the DMO, with a particular focus on supporting community participation practices in the destination.

This doctoral research aims to extend and develop existing literature on the links between tourism, ICT and sustainable tourism development by providing an investigation into the role of the DMS in strengthening sustainable tourism outcomes with a focus on the critical dimension of community participation. Guided by the Motivation-Opportunity-Ability (MOA) framework introduced by Hung et al. (2011), this research evaluates the capacity and capability of DMSs and their application in fostering conditions conducive to community engagement, with a specific focus on Indonesia. The anticipated outcome of this research is a framework that positions the DMS not solely as a marketing platform, but as a strategic tool for destination management, aimed at facilitating community participation in tourism development.

## **1.2. Research Aim and Objectives**

This research focuses on exploring the potential of ICT to support the implementation of sustainable tourism practices specifically in supporting community participation practice. The potential of DMSs to contribute to sustainable tourism management at the destination level has been highlighted in numerous studies (Ali & Frew, 2013; Horan, 2010; Sourak, 2015). Nevertheless, the implementation of DMSs has largely remained restricted to its traditional role as a promotional tool employed by DMOs. Several scholars offer a critical perspective to the adoption of a DMS, particularly highlighting its underutilised capabilities in advancing strategic management for destinations, which encompasses the facilitation of stakeholder engagement within the destination ecosystem (Gössling, 2021; Inversini et al., 2022; Zainal-Abidin et al., 2023). Community participation is widely recognised as a significant concept in stakeholder management and sustainable tourism, yet its practical application remains challenging. While the barriers to community participation in tourism development, particularly in developing countries, have been extensively discussed in the literature, comprehensive solutions to overcome these barriers have not been sufficiently explored (Bello et al., 2018). The thesis of this research explores the potential of the DMS role in supporting the implementation of community participation in tourism particularly in Indonesia.

Tourism development in Indonesia faces several challenges related to community participation, particularly issues of displacement (BBC NEWS Indonesia, 2023; Reuters, 2021; WALHI, 2022) and restricted access to public spaces (Florespedia, 2019), which reflect the marginalisation of local communities from tourism. These challenges highlight the need for a more inclusive participatory approach in tourism development that ensures community involvement in tourism activities and sharing benefits. Thus, there is a need to explore the solution to improve community participation practices in Indonesia. The

emergence of ICT platforms in Indonesia such as DMS offer an avenue to address community participation issues in the country. While DMSs in Indonesia predominantly still adopt a traditional role as a marketing platform, their capabilities could be expanded to support community participation. This shift could help address community-related issues in tourism and extended the role of the DMS for strategic destination management.

This research seeks to explore how Destination Management System (DMS) can support the implementation of community participation in Indonesia's tourism development. The main question guiding this doctoral research is:

How can the DMS support the implementation of community participation in tourism development in Indonesia?

To answer the main research question, this doctoral research seeks to address three objectives to answer the main research question, which are:

- **To investigate how DMSs around the world facilitate community engagement with tourism.**

Although the DMS is primarily used as a marketing channel, it is essential to explore its adoption to acquire insights into its capability to support community participation. Examining how DMS adoption can influence community engagement with tourism development at the destination level offers valuable insights into its capacity to facilitate the participatory concept.

- **To examine the strategic implementation of DMSs in Indonesia's regional destinations, particularly in relation to strengthening community involvement in tourism development.**

An evaluation of regional destination websites in Indonesia will determine whether the development of a DMS prioritises the needs of the destination community. Accordingly, further investigation of the design of these regional DMSs will provide insights into the rationale behind the integration, or lack thereof, of community elements within DMS functions.

- **To develop a community-focused DMS framework for Indonesia.**

While the previous objectives provide an overview of the potential of DMS adoption to influence community participation practice through its functions, this objective focuses on optimising DMS potential to enhance community-focused functions by providing content and features that addressed community needs. Since DMSs have not traditionally addressed community needs, creating a community-focused DMS framework is essential for realising its role in supporting community participation. As

this research focuses on Indonesia's regional DMSs, the findings will be used to develop a community-focused DMS framework tailored to the Indonesian context. Consequently, the framework will primarily address the unique characteristics and needs of Indonesia's DMS development.

This thesis is organised according to the traditional thesis format. The systematic structure of this thesis is outlined in the section below.

### **1.3. Organisation of the Thesis**

Chapter 2 reviews the literature on the relationship between tourism ICT platforms, particularly DMS, and community participation in tourism. It begins by exploring sustainable tourism concepts and the essential role of community participation in tourism development, clarifying key terms and addressing challenges identified in existing literature. The chapter also examines the role of ICT, especially the DMS, in enabling sustainable tourism. It provides insights into DMOs and their strategic use of DMSs. Finally, the chapter positions service-dominant logic, social construction of technology (SCOT) theory, and the Motivation–Opportunity–Ability (MOA) framework as the theoretical frameworks guiding this research.

Chapter 3 outlines the research design of the study, beginning with an explanation of pragmatism as the philosophical framework guiding the research. It discusses the use of a sequential mixed methods approach, which shapes the overall research structure. The chapter elaborates on the chosen methods, focusing on utilising mainly qualitative approach and the Delphi method, and explains the case study approach centred on Indonesia. Additionally, it addresses the challenges, limitations and ethical considerations associated with the methods, before concluding with a reflection on the research's positioning and the application of these methods.

Chapter 4 presents the findings from the website evaluation of DMS functions that support community engagement in tourism development. The evaluation specifically explores how DMS functions facilitate community participation, guided by the MOA framework. The findings are structured around this framework, which serves as the overarching theme for presenting the results.

Chapter 5 presents the findings from the evaluation of Indonesia regional destination websites. The analysis focuses on three main aspects: the management of regional destinations in Indonesia, the application of DMS functionalities on the websites, and the adoption of DMS functions that can facilitate community participation. The evaluation uses DMS functions that can facilitate community participation identified in global cases as criteria to assess Indonesian regional destination websites.

Chapter 6 presents the findings from interviews with DMS stakeholders, focusing on the strategic rationale behind DMS adoption in Indonesia drawing from the examples of two regional DMSs. The chapter explores the development of regional DMSs and their role in supporting community participation practices. The findings are derived from stakeholder interviews of the Banyuwangi and Wakatobi DMSs as the case studies, providing insights into the motivations and objectives for DMS development and their impact on community engagement in tourism.

Chapter 7 details the findings from a three-round Delphi study used in the research, focusing on defining the DMS concept. This chapter presents findings related to the DMS concept, including its definition, purposes, functions, success criteria and main beneficiaries. Each element of the DMS terminology is presented according to the sequence of the Delphi rounds.

Chapter 8 presents findings from the Delphi study, focusing on how DMS can support sustainable tourism practices and facilitate community participation. The chapter starts by exploring how DMS can enhance sustainable tourism, then examines DMS-enabled community participation initiatives, detailing the functions that facilitate community engagement. It concludes with an overview of the challenges identified and offers recommendations for the future development of DMSs.

Chapter 9 provides a discussion on DMS capability in supporting community participation in tourism. The discussion in this chapter evaluates DMS functions supporting community engagement, using findings from the website evaluations and the Delphi study. The chapter begins with an overview of current DMS practices, addressing their role in supporting community participation and related adoption challenges. It concludes by highlighting an effective adoption strategy to optimise the potential of DMS functions to support community participation.

Chapter 10 provides a discourse related to DMS practices in Indonesia, particularly their role in enabling community participation in tourism. It begins by discussing the implementation of DMSs in Indonesian regional destinations, specifically Wakatobi and Banyuwangi. The analysis leads to the development of a proposed framework for DMS practices in Indonesia designed to enhance community engagement in tourism development. The chapter concludes with an exploration of the MOA framework in the context of DMSs.

Chapter 11 presents the conclusions of the research and the contributions it can make. The first part of the chapter explains the conclusions drawn from the research in relation to the research question. The chapter begins by outlining the research's contributions to extending academic discussions, particularly concerning the capability of DMS to

support community participation, as well as the roles of the MOA and internal marketing frameworks in realising this potential. It also describes the research's contributions to destination management practices, particularly in adopting DMSs with added functions that support sustainable tourism management. The chapter concludes with a reflection on the research, addressing its limitations and opportunities for future studies.

## Chapter 2. Literature Review

This chapter reviews the extant literature about the interrelationship between sustainable tourism and information community and technology (ICT) platforms, with a particular focus on destination management systems (DMSs) and community participation in tourism. This review informs the research direction and the underlying concepts that guide it.

The review commences with an exploration of sustainable tourism concepts and the pivotal role of the community in tourism development. The discourse examines the concept of community participation, highlighting its significance as one of the core elements for sustainable tourism practices. This discussion clarifies the terminology and related concepts of community participation, as well as addressing the challenges identified in the literature regarding its implementation specifically in developing countries.

This current research focuses on exploring DMS adoption and its role as an enabler of sustainable tourism practices. Thus, this chapter also discusses the role of ICT in supporting sustainable tourism, with a particular focus on DMSs. A discourse on the operations and responsibilities of destination management organisations (DMOs) provides insights into the strategic application of a DMSs. The definition of DMS adopted in this study is further clarified as the discussion turns to current patterns of adoption and roles. This chapter concludes with the review of service-dominant (S-D) logic, social construction of technology (SCOT) theory and the Motivation–Opportunity–Ability (MOA) framework which are positioned as the theoretical frameworks of this research.

### 2.1. Sustainability in Tourism

Following the release of the Brundtland Report in 1987, which popularised the notion of sustainable development, the idea of sustainability has garnered significant attention from tourism policymakers, industry stakeholders and academics alike (Hall, 2019). Several authors argue that tourism is a sector that can support sustainable development (Butler, 1999; Sharpley, 2000; Yfantidou & Matarazzo, 2017). This is attributed to tourism's capability to provide stable economic growth, particularly for the developing world (Pan & Dossou, 2020), and its potential to benefit environmental and socio-cultural conservation given the sector's dependency on the quality of the environment and authentic visitor experiences (Sharpley, 2000; Yfantidou & Matarazzo, 2017). However, even though many destinations include elements of sustainability in their branding and marketing, tourism practices over the years have been less than sustainable (Benckendorff et al., 2019; Hall, 2019; Higgins-Desbilles et al., 2022, Magnusson et al., 2024). As a response to unsustainable practices such as those that contribute to climate

change and environmental degradation, the notion of *sustainable tourism* was introduced to promote a form of tourism that puts less pressure on the environment, while also contributing to community wellbeing (Butler, 1999; Sharpley, 2000). Sustainable tourism has increasingly emerged as a central topic of discussion among scholars over the years (Arya et al., 2024; Hall, 2019), and the consistent number of publications on sustainability dimensions in tourism practices indicates the continuous interest and significance of the concept (Molina-Collado et al., 2022; Ruhanen et al., 2015).

Nevertheless, since it was first introduced, the concept of sustainable development has been a subject of conceptual debate (Sharpley, 2000; Zhang & Chan, 2020). Sustainable development from an etymological perspective can be regarded as an oxymoronic concept (Sharpley, 2000), as it combines two paradoxical notions of sustainability and development (Higgins-Desbiolles, 2018). On the one hand, *sustainability* represents an enduring and steady state, while on the other, *development* constitutes progress from the current situation to a supposedly better state (Wall, 2018). The Brundtland report (1987) initially explained sustainable development as human progression, which takes notice of the limited resources available. However, the concept of sustainability is too broad and fluid (Sharpley, 2000). By 1993, approximately 70 different definitions of the concept had emerged (Zhang & Chan, 2020). The concept's ambiguity has had many critics who argue that the notion of sustainable development carries a neoliberal agenda, supporting continuous human progression based on economic indicators (Higgins-Desbiolles, 2018). Though the *sustainable development* concept may have originated from a desire to use resources responsibly, many policymakers exploit its ambiguous nature to promote pro-growth policies. Sustainable tourism faces similar conceptual challenges, as its definition mirrors that of its parent notion (sustainable development) (Butler, 1999; Hall, 2019; Zhang & Chan, 2020).

The longstanding debate around the notion of sustainability in tourism focuses on the question of what needs to be sustained (Santos et al., 2022; Sharpley, 2020; Wall, 2018). There are two opposing views: the first regards sustainable tourism as the effort to withstand the viability of tourism activities for a foreseeable time, whereas the second posits sustainable tourism as one means to achieve a broader sustainability condition (Butler, 1999; Gössling, 2021). The latter view suggests that tourism, along with other industries, are the means for sustainable development. Both views carry practical implications for tourism. *Sustaining tourism* means upholding tourism as an economic activity, whereas focusing on broader sustainable development requires tourism activities to consider wider sustainability goals, such as environmental and community well-being. The root of sustainable tourism historically and conceptually suggests that tourism, if managed appropriately, is an industry that can contribute to the aim of sustainable development; that is, tourism can support in fostering the balance of

environmental sustainability and socio-economic development. Therefore, sustainable tourism should be considered part of sustainable development, which is also the view taken by this current research. Thus, this research sees sustainable tourism as a model of tourism that provides a means to reach a broader sustainable development objective which is eventually associated with human welfare.

Amid the conceptual division, most policymakers and academics adopt the United Nations World Tourism Organization's (UNWTO) definition of sustainable tourism as "tourism that takes full account of its current future economic, social and environmental impacts, addressing the need of visitors, the industry, the environment, and host communities" (UNEP & WTO, 2005, p.12). On the positive side, institutionalising the definition of sustainable tourism may mediate the polar view of sustainable tourism by providing a universally accepted interpretation of the concept. Despite its widely recognised value, the sustainable tourism concept is subject to considerable variation in its implementation. Both public and private institutions have exploited the ambiguous yet attractive nature of sustainable tourism, often leveraging its commercial value without adhering to its fundamental principles. One such practice, referred to as "greenwashing" (Pappagianakis et al., 2024; Lafferty, 2004), prioritises economic growth in tourism by focusing on increasing tourist numbers and financial gains over genuine sustainability efforts. In the global tourism context, the UNWTO, as a leading international tourism institution advocating for sustainable practices, inherently supports a pro-growth agenda (Higgins-Desbiolles, 2018). The characteristics of "development" endorsed by the UNWTO mainly present economic indicators such as the number of visitors, tourism receipts and exports, which reflects the body's neoliberal capitalist view (Hall, 2019). Consequently, numerous countries may interpret tourism development as synonymous with the growth of visitor numbers and the revenue generated from tourists at the destination.

In 2015, the United Nations launched 17 Sustainable Development Goals (SDGs) to guide the implementation of the sustainable development agenda, emphasising human rights, inclusiveness and environmental sustainability (Hall et al., 2022). Of the 17 goals, the UNWTO highlights three SDGs where the tourism sector is well placed to make a direct contribution. These are SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; SDG 12: Ensure responsible consumption and production patterns; and SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development (UNWTO, 2024). The UNWTO has also suggested that tourism can directly or indirectly contribute to achieving all the SDGs (Carius & Job, 2019). However, despite the UNWTO's efforts to unify the sustainability movement by providing a universal definition and shared goals, sustainable tourism practices have yet to be fully realised worldwide.

The complexity of implementing sustainability is significantly influenced by the unique characteristics of each destination as well as temporal variables, leading to diverse and multifaceted sustainability challenges in tourism (Magnusson et al., 2024; Santos et al., 2021). Several authors argue that efforts to implement sustainable tourism have reached a point of stagnation, requiring alternative approaches that embrace the locality of sustainability issues (Ali & Frew, 2014a; Benjamin et al., 2020; Magnusson et al., 2024). In developing contexts, for example, the rapid growth of tourism may weaken local supply chains and make tourism opportunities less equitable for host communities, as the industry is often dominated by large global corporations (Scheyvens & Biddulph, 2018). Scheyvens and Biddulph further suggest that the tourism industry is known to be exclusive to middle-upper class society and marginalises the role of those who are poor from the production and consumption of tourism. Community empowerment is a contested issue that arises from rapid tourism development in the Global South, particularly in Indonesia (Lukman et al., 2022), which risks disengaging local communities from tourism and its benefits. On a broader scale, the continuous expansion of tourism globally has led to significant socio-ecological impacts, such as economic inequality and excessive numbers of visitors to a destination (overtourism) (Bellato et al., 2023; Higgins-Desbiolles, 2018).

From an environmental perspective, climate change as an impact of tourism activities has become the focus of sustainable tourism literature in the past decade (Molina-Colado et al., 2022; Ruhanen et al., 2019). More recently, the COVID-19 pandemic has highlighted the tourism industry's vulnerability at a local destination level, particularly affecting the livelihoods of local communities when international travel is restricted (Benjamin et al., 2020). The COVID-19 pandemic provides a lesson on the importance of a collaborative approach among all stakeholders in destination management, highlighting how community members can support one another to enhance overall resilience (Haywood, 2020; Higgins-Desbiolles et al., 2022). This situation illustrates a clear indicator of insufficient implementation of the three sustainability principles within the sector, as tourism development has been marked by the prioritisation of economic growth over other critical considerations (Benjamin et al., 2020; Hall, 2019; Higgins-Desbiolles, 2018; Scheyvens & Biddulph, 2018; Sharpley, 2020).

The challenges associated with recent attempts to implement sustainable tourism on a global scale extend beyond mere definitions or shared objectives like the SDGs. A major concern is the continued prioritisation of the commercial aspects of tourism, driven by a neoliberal capitalist agenda (Hall, 2019). This approach has been shown to bring negative impacts in the past (Benjamin et al., 2020). While one may argue that the commercial value of tourism can be a solution for global issues such as poverty (Butcher,

2021), the reality is that large global corporations often try to monopolise the tourism market (Scheyvens & Biddulph, 2018), which represents the basic ideology of capitalism. Alternative forms of tourism have been proposed by scholars and policymakers to pull the sector's practices away from the pro-growth ideology and to integrate sustainability principles.

Various alternative forms of tourism, such as pro-poor tourism and ecotourism, have been introduced to counter the rise of mass tourism, which many see as an unsustainable tourism practice (Zang & Chan, 2019). However, the effectiveness of alternative forms of tourism have been questioned by many tourism scholars. Decades ago, Butler (1999) asserted that ecotourism that takes place in an often-vulnerable environment can be more unsustainable than mass tourism happening in a large city such as London, considering the capacity of the environment to withstand tourism impacts. Zhang and Chan (2020) also argue that mass tourism (which has often been associated with economic leakage and negative environmental and social impacts) should not be disregarded, as it has the potential to yield significant benefits when managed effectively. Zhang and Chan argue that ignoring mass tourism does not address sustainability challenges in tourism practices, as the sustainability principle is not bound to the scale of tourism – rather, every form of tourism should adhere to these principles. In more radical terms, the notion of *degrowth* has been offered to separate tourism from the growth perspective (Chassagne & Everingham, 2020; Higgins-Desbiolles, 2018). Degrowth serves as a counter-narrative to the growth paradigm, emphasising not just the economic impacts but also the social and biophysical costs of tourism development, with the aim of enhancing human well-being (Higgins-Desbiolles, 2018; Murray et al., 2023). However, such an extreme concept like degrowth may not be easily accepted by tourism stakeholders, as it challenges the conventional capitalist perspective that views tourism primarily as a vehicle for economic development.

Myriad terms have been introduced to describe more sustainable forms of tourism. In their review of sustainable tourism, Ruhanen et al. (2018) associate the concept with biodiversity conservation, human welfare and equity principles, and public participation. This is evidenced by the rise of *inclusive tourism* (Scheyvens & Biddulph, 2018) and *responsible tourism* (Fennell & Garrod, 2022). More recently, *regenerative tourism* has been introduced as an extended concept of sustainable tourism, which aims to provide positive net effects to the ecosystem through tourism activities (Bellato et al., 2023). These newly coined phrases to describe alternative types of tourism were obviously proposed with the good intention of continuing the battle to develop sustainable forms of tourism, each with a diverse focus to address different challenges. However, most of the ideals upheld by these new names for certain types of tourism are already embedded in the sustainable tourism concept, namely in its three pillars of sustainability: economic,

social and environmental. While the newly introduced alternative concepts of sustainable tourism hold benign value, the emergence of these concepts must avoid the risk of merely rebranding the old concept. This can be likened to the Javanese metaphor “*Kretek anyar, isine wedang lawas,*” which means drinking the same beverage using a new cup.

Tourism was initially perceived as a growth vehicle aligned with sustainable development values due to its relatively less-exploitative nature (Yfantidou & Matarazzo, 2017). It is also regarded as a social force capable of connecting communities and fostering well-being (Higgins-Desbiolles et al., 2022). If the tourism industry can be managed to benefit its sources and augment its social value within the destination community, sustainable tourism is more likely to be achieved, regardless of the forms of tourism adopted. The successful implementation of sustainable tourism must strive to balance environmental, social, and economic sustainability, adapted to the specific local context (Bramwell et al., 2017; Fennell & Cooper, 2020; Mesci et al., 2019). Thus, incorporating local knowledge is essential for effectively implementing sustainable tourism at the destination level. Considering tourism’s capability to serve as a regional development vehicle and social force, *tourism development* should be seen as a process in expanding the tourism industry at the destination to achieve broader development goals.

Unlike the economic growth-oriented development model as often promoted by UNWTO, the principles of *tourism development* based on the concept of sustainability emphasise the holistic well-being of the destination’s tourism system. Sustainable tourism aims to generate value for all tourism actors at the destination including local community. To achieve this, the objectives of sustainable tourism development must be collectively determined by all tourism actors. Consequently, tourism development entails comprehensive planning and the implementation of strategies that involve the active participation of all tourism actors, ensuring that development outcomes are inclusive and aligned with long-term sustainability goals. Achieving sustainable tourism locally represents a significant step towards global sustainability, reflecting the idea of addressing macro issues through micro solutions (Sharpley, 2020). The following section will discuss the role of community in sustainable tourism development particularly in providing local context to its implementation.

## **2.2. Community Participation in Tourism Development**

Tourism is as much a social and cultural phenomenon as it is a prominent economic sector. Tourism entails people’s movement from their home environment to a place of interest and interaction with the local population; thus, tourism relates to many community issues in the destination (Higgins-Desbiollers et al., 2022; Junaid et al., 2021). Host communities in the destination should be treated as primary stakeholders

as they are directly and indirectly involved in tourism development (Saarinen, 2019; Wondirad & Ewnetu, 2019). Saarinen (2019) suggests that due to the nature of the destination community's position as the inhabitant of where the tourism activities take place, residents are at the coalface of the social, economic, and environmental impacts of tourism activity. Therefore, the host community holds a significant stake in tourism and should have the opportunity to play a significant role, provide input and actively participate in the development of the industry while also benefiting from tourism.

### **2.2.1. The Role of Community in Sustainable Tourism**

Tourism attractions at the destination are mostly sourced from public commodities. The visitor experience at the destination depends a lot on the quality of the environment and locally authentic experiences (Sharpley, 2000; Yfantidou & Matarazzo, 2017). The source of tourism attractions, such as unique geological features and local traditions and cultures, are the commodities that are essential to local community livelihoods. The utilisation of those local commodities for tourism has an impact on the host communities' way of living. Therefore, successful tourism development must aim to contribute to creating a healthy and thriving local population (Blackstock, 2005). A mutual relationship between destination host and the tourism industry is needed to create tourism practices that contribute to the community's well-being.

In practice, host communities and tourism development share mutual needs as both can impact each other. Tourism can positively affect residents' livelihoods but can also negatively impact the destination if planned poorly (Jaafar et al., 2017). Positive socio-cultural impacts of tourism in the destination include improvements in public infrastructure and services such as electricity, roads and transportation, the opportunity to engage in cross-cultural communications with visitors, and the economic leverage of tourism, such as new employment and/or business opportunities that can improve resident quality of life. Conversely, if not carefully managed, tourism activities can also create social and ethical issues, including a rise in criminal activity and the transformation of social spaces within the destination for tourism purposes. From a different perspective, local community involvement in tourism is pivotal in enriching the experiential value of the tourists by facilitating meaningful interactions between visitors and residents (Basile et al., 2021; Cole, 2006). Furthermore, local culture has long been a significant resource for tourism products (Simmons, 1994). Thus, it is essential for local communities to play a significant role in the development of tourism to achieve the optimal outcomes of the interrelationship between community and tourism development.

Cole (2006) argues that community participation should serve as the foundation of local tourism development. Close engagement of the local community in tourism initiatives can generate mutual benefits for both the community and the industry. The need to

integrate the values, aspirations and perspectives of destination hosts into local tourism planning was promoted many years ago by Murphy (1985) and remains relevant today. Community participation in tourism planning ensures that the social, economic and environmental benefits of tourism initiatives link to the local community's needs (Cole, 2006). Eyisi et al. (2021) added that facilitating community participation in cultural tourism destinations can contribute to local community development, including poverty alleviation, depopulation prevention, conservation of culture and countering cultural degradation. However, the positive and desirable impacts of community participation can only be realised when genuine engagement between community and tourism development occurs. Unfortunately, many participatory projects globally, particularly in developing countries, are a mere formality. The community-based tourism (CBT) project in South Africa (De Lange & Bricker, 2024) and heritage tourism management in Thailand (Esichaikul & Chansawang, 2022) illustrate these shortcomings. De Lange and Bricker (2024) report that community participation in a CBT project in Stellenbosch, South Africa, remains low due to the geographical marginalisation of local neighbourhoods. Similarly, community involvement in the heritage tourism of Sukhothai Historical Park, Thailand, still follows a top-down approach, despite enabling residents to be involved in cultural events (Esichaikul & Chansawang, 2022). Tourism has long been seen as an exclusive industry, despite the increasing rhetoric surrounding inclusive tourism (Scheyvens & Biddulph, 2018).

Community participation in tourism is essential for the implementation of sustainability projects and is embedded in the UN's SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels (UNWTO, 2024). Practically, community participation supports the three principles of sustainable tourism, as a participatory approach emphasises local economic development and environmental conservation (Bello et al., 2017), while also fulfilling local democratic rights (Saufi et al., 2014). The participation of the host community in the planning process ensures that local knowledge is captured in tourism projects and helps ensure that such initiatives fit with local context and traditions (Timothy & Tosun, 2003). Several authors also contend that community involvement in the planning process increases community support for local sustainable tourism projects (Khalid et al., 2019) and brings the value of inclusiveness and democracy to local tourism practices (Basile et al., 2021; Eyisi et al., 2021). Therefore, community participation is seen as an essential concept to be applied in every development projects. However, reference to community participation is often little more than persuasive language (jargon) designed to gain recognition for development projects as socially ethical programmes that facilitate a bottom-up approach. Questions must be asked about the concept of community participation applied in many development

projects before confirming whether the participatory practice was in place and for the right individuals. These questions include: What is participation? In what situation can it be applied? What does the community constitute? The following section will clarify the concept of community participation that is used in this thesis.

### **2.2.2. Community Participation Terminology**

The term *community participation* in tourism is commonly used to illustrate the community's involvement in any type of tourism initiative. However, community participation as a term has a more complex meaning than just the involvement of destination communities. The principal concept of community participation is anchored on allowing marginalised people to control their well-being (Scheyvens, 2002). Defining community participation is not straightforward due to the complexity and multi-dimensional nature of the term (Bahaire & Elliot-White, 1999; Cheng et al., 2019; Cole, 2006; Wondirad & Ewnetu, 2019).

The participatory concept of community participation in tourism literature is mostly associated with community involvement in the planning and decision-making process (Bello et al., 2017; Bello et al., 2018; Xu et al., 2019; Kala & Bagri, 2018). Basile et al. (2021) offer a different view: *participation in tourism* appears in (1) decision-making, and (2) sharing tourism benefits. From a broader perspective, Tosun (1999) suggests that community participation in tourism development can apply in many forms and stages. In more detail, Saarinen (2019) indicates that participation entails community voluntary involvement in the decision-making process and the implementation of tourism development to exercise the community's rights and benefits from the opportunities that arise from tourism.

Defining community is another issue that needs to be clarified before community participation can be fully defined. Community commonly refers to a group of individuals characterised by a geographical area (Aas et al., 2005) and/or common goals and interests (Williams & Lawson, 2001). In the tourism context, the former classification mainly refers to residents who reside in the proximity of tourist destinations (Aas et al., 2005). Cheng et al. (2019) suggest that community members may be involved in tourism in different ways and with different degrees of commitment. In this respect, some residents may also be part of the business sector.

In developing countries, many residents are involved in the tourism economy by providing a service that is compatible with their skill set; for instance, fishing communities provide fishing and snorkelling tours in many coastal areas around the Southeast Asia region, particularly in Malaysia and Indonesia (Hampton et al., 2018). In a different setting, many urban residents try to benefit from tourism activities by operating an informal business, perhaps renting rooms in their homes to provide lodging for visitors

(Damayanti et al., 2017; Hampton, 2003). Studies show that citizens also contribute to tourism production by running informal sector activities such as providing pedicab (a small pedal-operated vehicle, serving as a taxi in some countries) services and operating as unlicensed food outlets (Damayanti et al., 2017). However, informal businesses have little access to government incentives and resources such as those that support them to acquire retail spaces as they are underrepresented by the government and the law (Damayanti et al., 2017; Hampton et al., 2018; Saufi et al., 2014).

This thesis adopts a broad concept of *participation* where participation accommodates extensive community involvement in tourism, including the co-production of tourism experiences by local stakeholders; for example, sharing local traditions or the initiation of conservation projects that may eventually contribute to more sustainable forms of tourism development. The extensive participatory approach adopted in this current research is also related to the action of the host community in claiming benefits from tourism activities in the destination. In this way, and for this doctoral research, *community* refers to residents and local tourism business owners, including the informal businesses and small and medium enterprises (SMEs) within a geographically defined area, which, in the context of this research, is a tourism destination.

This research sees community participation in tourism development as a tool to provide the community with the power to control their environment and enhance their livelihoods. The participatory concept adopted in the research is one of active participation in which destination communities' involvement in tourism destinations are self-initiated, representing the bottom-up approach to local tourism development. This participatory approach reflects Tosun's (1999) notion of *spontaneous participation*.

There are many forms and levels of community participation (Arnstein, 1971; Pretty, 1995; Tosun, 1999). Tosun (1999) divided community participation into three forms: pseudo, passive and spontaneous. *Pseudo community participation* represents the lowest level of participation, where community participation is seen as tokenism; for example, a small group from the community may provide a cultural performance in a hotel and the performance is not necessarily authentic. *Passive community participation* is described as minimal participation in which a local community may, for example, perform a given task with guidance from a tourism authority. *Spontaneous community participation* represents the highest level of participation, whereby the local community is actively seeking to be involved in local tourism development.

Arnstein's (1971) and Pretty's (1995) community participation levels, which is sometimes referred to as a ladder of participation, are two of the earliest frameworks used to describe the conditions of participatory practice in local or regional development. Tosun (1999) adopted these frameworks in the context of tourism development, and his

framework is still referred until today. Table 2.1 illustrates the interrelationships between Arnstein's (1971), Pretty's (1995) and Tosun's (1999) community participation forms. The table is arranged from the highest level of community participation to the lowest. In Table 2.1, the types of community participation from Arnstein's (1971), Pretty's (1995), and Tosun's (1999) frameworks are arranged to explain the levels of participation within each framework, highlighting their equivalence in meaning and themes, particularly in relation to the distribution of power to the community.

Several scholars have used the term community participation to refer to inequivalent concepts like collaboration and empowerment, or often described community participation as community-based tourism, which is inaccurate. Both participation and collaboration are common concepts used in tourism literature to illustrate the significant number of individuals working collectively on tourism initiatives. *Collaboration* entails multiple stakeholders working together to solve common issues by sharing resources, skills and knowledge (Park & Kohler, 2019; Robina-Ramirez et al., 2022; Tjilen et al., 2023). Eyisi et al. (2021) suggested that community participation is a component of stakeholder collaboration. *Community-based tourism* (CBT) is often used to describe a tourism activity that heavily involves the community and is equivalent to community participation. However, according to Basile et al.'s (2021) discussion on CBT, participation and empowerment, CBT is categorised as a managing organisation of a touristic place that embodies community participation practice to create a unique tourist experience. CBT provides an avenue for the implementation of community participation as one of CBT's goals is to ensure that benefits are shared among all community members (Khalid et al., 2019; Okazaki, 2008). In a nutshell, CBT is one of the commercial tourism initiatives that adopt the concept of community participation.

Empowerment and participatory concepts are closely related; however, they are different in meaning. Cole describes *empowerment* as "the capacity of individuals or groups to determine their affairs; it is a process to help people exert control over factors that affect their lives" (Cole, 2006, p. 631). Tosun (2000) suggests that empowerment is the goal of community participation, where the power and focus of tourism development initiatives are shifting to the local people of the destination. Therefore, empowerment terms can be associated with the top end of the participation ladder (based on Arnstein, 1971, and Pretty, 1995).

**Table 2.1. Community Participation Level**

Arnstein's (1971) Typologies of Community Participation		Pretty's (1995) Typologies of Community Participation	Tosun's (1999) Typologies of Community Participation in Tourism
<b>Degrees of citizen power</b>	<p><b><i>Citizen control</i></b> Residents are in full charge of policy and managerial aspects and can negotiate the conditions under which outsiders may change them.</p>	<p><b><i>Self-mobilisation</i></b> People participate by taking initiatives independently of external institutions to change systems.</p>	<p><b><i>Spontaneous participation</i></b> bottom-up active participation direct participation participation in decision-making authentic participation self-planning</p>
	<p><b><i>Delegated power</i></b> Officials give up at least some degree of control, management, decision-making authority or funding to citizens. Locals now have significant control and can ensure that plans suit them.</p>	<p><b><i>Interactive</i></b> People participate in joint analysis, development of action plans, and formation or strengthening of local institutions. Participation is seen as a right, not just the means to achieve project goals.</p>	
	<p><b><i>Partnership</i></b> Officials allow citizens to negotiate better deals, veto decisions, share funding or put forward requests that are at least partially fulfilled. However, such power is not voluntarily shared by public institutions but taken by the citizens through actions such as protests.</p>		

*(Table continued over the page)*

Arnstein's (1971) Typologies of Community Participation	Pretty's (1995) Typologies of Community Participation	Tosun's (1999) Typologies of Community Participation in Tourism	
<b>Degree of citizen tokenism</b>	<p><b>Placation</b></p> <p>Local people are granted a limited degree of influence in the decision-making process and can advise or offer alternative plans. However, authority representatives hold the right to change or reject their proposals.</p>	<p><b>Functional</b></p> <p>People may participate by forming groups to meet objectives related to the project which have already been determined by external agents. Participation is seen by external agencies to achieve project goals, especially reduced costs.</p>	<p><b>Induced Participation</b></p> <p>top-down passive formal mostly indirect degree of tokenism and manipulation pseudo-participation participation in the implementation and sharing benefits choice between proposed alternatives and feedback</p>
	<p><b>Consulting</b></p> <p>Participants are asked to provide feedback but there is no guarantee that their opinion will be considered or accepted. Such participation remains just a window-dressing ritual.</p>	<p><b>Material incentives</b></p> <p>People participate by contributing resources – for example, labour – in return for food, cash or other material incentives.</p>	
	<p><b>Informing</b></p> <p>There is a one-way flow of information from officials to citizens who simply accept the information with no channel provided for feedback and no power for negotiation.</p>	<p><b>Consultation</b></p> <p>People participate by being consulted or by answering questions. External agents define problems.</p>	

(Table continued over the page)

Arnstein's (1971) Typologies of Community Participation		Pretty's (1995) Typologies of Community Participation	Tosun's (1999) Typologies of Community Participation in Tourism
<b>Non-participation</b>	<p><b>Therapy</b></p> <p>Community participation initiatives are staged to appease the anger or frustration of local people (cure) but not to deal with the real problem or consider their perspectives</p>	<p><b>Passive</b></p> <p>People participate by being told what has been decided or has already happened.</p>	<p><b>Coercive participation</b></p> <p>top-down passive mostly indirect, formal participation in implementation, but not necessarily sharing benefits choice between proposed limited alternatives or no choice paternalism, nonparticipation, high degree of tokenism and manipulation.</p>
	<p><b>Manipulation</b></p> <p>Participation is merely the creation of community committees or associations that are used by those in power to "demonstrate" the use of citizen participation.</p>	<p><b>Manipulative</b></p> <p>Participation is simply a pretence, with 'people's representatives on official boards, but who are unelected and have no power</p>	

Sources: Arnstein, 1971; Pretty, 1995; Tosun, 1999.

### 2.2.3. Community Participation Practice in Tourism Development

The concept of community participation comes from neo-populist perspectives, which consider development as an empowerment tool for marginalised groups, providing them with a chance to control their own well-being (Scheyvens, 2002, p. 52). In the tourism context, community participation has been advocated since the 1980s as one of the primary concepts to foster sustainable tourism (Tosun, 2000). The idea of community participation emerged from Western ideology, in which the infrastructure and socio-cultural conditions were already in place to support participatory practice (Tosun, 2000). Consequently, in the early (1980s) introduction of the concept into tourism practice, community participation was mostly implanted in developed countries. Meanwhile, the application of community participation in developing countries is still problematic (Wondirad & Ewnetu, 2019).

Tosun (2000) suggests three types of limitations to the implementation of community participation in developing countries: practical, structural and cultural limitations. *Practical limitations* refer to the technical challenges that affect the daily practice of community participation in developing countries. For example, Cole's (2006) ethnographic study in Ngadha Village in Indonesia finds that limited access to information about tourism planning has limited villagers' participation in local tourism development. In line with Cole's (2006) finding, Bello et al.'s (2017) article on ecotourism development in Malawi suggests that poor coordination of local stakeholders and destination authorities' shortage of funding to facilitate participatory practice are among many factors that limited the ability of destination hosts to participate in tourism development. Another example of practical limitations for community participation in developing countries can be seen in Saufi et al.'s (2014) study on community participation in tourism development in Lombok, Indonesia. Saufi et al. report that inadequate infrastructure, such as hotels and roads, to support tourism activities has affected the host population's perception of their ability to participate in local tourism as they see very little opportunity to be involved in the industry, particularly in terms of jobs and investment.

*Structural limitations* for community participation in developing countries are related to the organisational stature, power structures, and economy and legislation systems (Tosun, 2000). The governance system is the main structural limitation for community participation in developing countries. For example, Bello et al. (2017) report that centralised tourism planning is one factor hindering community participation in ecotourism destinations in Malawi. The centralistic approach for tourism development, which is usually conducted at the national level, limits the destination community's contribution to the tourism planning process. Towner (2016) found that a lack of support for local tourism development and foreign ownership of most tourism businesses limited

community participation in tourism on Mentawai Island, Indonesia. And Saufi et al. (2014) highlight the lack of authorities' intervention in the form of incentives and regulations - for example, mandating a minimum number of local recruitments in the tourism industry - restrained the community's ability to gain tourism benefits in Lombok, Indonesia.

*Cultural limitations* for community participation in developing countries are associated with the socio-economic conditions of local communities in these destinations. Many scholars report that a lack of community knowledge about local tourism products and tourism development are the common challenges that hinder community participation in developing countries (Bello et al., 2017; Cole, 2006; Towner, 2016), which can be classified as cultural limitations. Saufi et al.'s (2014) study in Lombok, Indonesia, indicates that an unhealthy interaction between the community and tourists due to the unwelcome behaviour of visitors can also lead to a cultural limitation for community participation in tourism development.

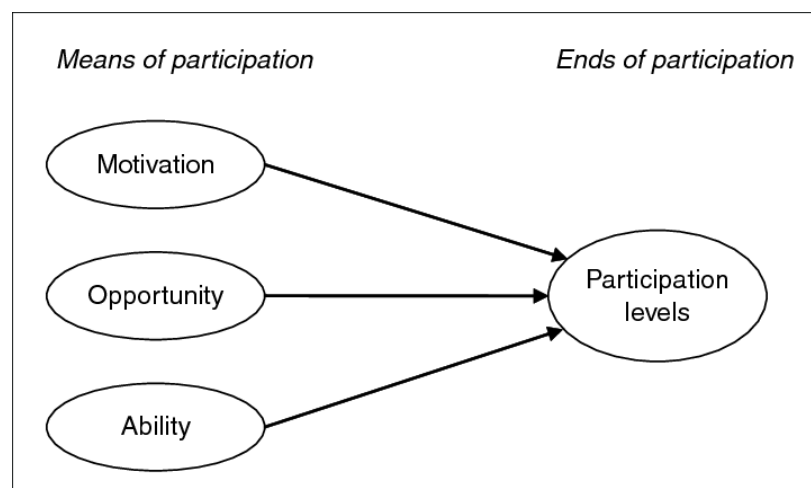
The discussion above provides empirical evidence of practical, structural and cultural limitations for community participation that have occurred in some less developed countries. According to Bello et al. (2017), the distinct characteristics of developing countries that contribute to limitations for community participation include high population growth, inequality in income and power structures, high unemployment, low-skilled human resources, lack of capital, centralised governance, high level of corruption and low levels of democratic process. Innovative strategies in tourism management are needed to address the challenges of implementing community participation that will eventually establish meaningful community participation in tourism, particularly in developing countries (Bello et al., 2018; Tosun, 2000) and take advantage of participatory practices for the benefit of tourism development and more importantly, for the benefit of local communities. Despite many efforts by tourism scholars to identify challenges to community participation practice, there is a paucity of research that provides a solution (Inversini et al., 2022; Zainal-Abidin et al., 2023).

#### **2.2.4. Enabling Community Participation**

Factors that enable community participation in tourism development and planning are primarily associated with the residents' perceptions of tourism activities in the destination (Khalid et al., 2019; Rasoolimanesh et al., 2015; Rasoolimanesh, Jaafar, et al., 2017). Most studies assessing the community's support for tourism apply Social Exchange Theory (SET) (Sharpley, 2014). In a nutshell, according to SET, if a community perceives tourism development positively, they are more likely to be actively involved in the process (Rasoolimanesh et al., 2015; Rasoolimanesh, Jaafar et al., 2017). At the same time, SET can explain the motivation of the community to participate in tourism. In practice, participating in tourism requires resources that can facilitate the participation process. In

developing contexts, the absence of information and inadequate facilities for coordinating local stakeholders, for example, are frequently regarded as obstacles that impede the community participation process. (Bello et al., 2017; Cole, 2006; Saufi et al., 2014), and these challenges are not related to local community perceptions of tourism development. Moreover, Rasoolimanesh, Jaafar, et al. (2017) argue that the SET framework is unable to account for the intangible elements that affect individuals engaged in tourism, such as their ability (capability, capacity and access) to participate in tourism. For instance, the discussion in the previous paragraph suggests that community lack of knowledge of local tourism products has been one of the most common challenges for community participation, particularly in developing countries (Bello et al., 2017; Cole, 2006; Towner, 2016).

Hung et al. (2011) proposed a holistic model to examine the process of community participation in tourism development. They stressed the importance of integrating the “means” and “ends” framework to understand the community participation process better. Means describes the condition or process that enables community participation, while ends is used to describe the state of community participation generated by the process, which is illustrated using the community participation typologies from the low level to the highest level of participation (see Table 2.1). Hung et al. introduced the Motivations–Opportunity–Ability (MOA) framework (Figure 2.1) to illustrate the factors or conditions that lead an individual to participate in tourism planning and development. In this model, community participation is seen as a decision-making process, and for the community to be able to participate in tourism, they must have motivation, opportunity, and ability.



**Figure 2.1. MOA Framework**

Source: Hung et al., 2011.

*Motivation* in this framework translates as a driving factor that reflects the readiness and interest of individuals to engage in tourism development and is mainly associated with the perceived benefit of tourism (Bettiga et al., 2018; Hung et al., 2011; Jepson et al., 2013). *Opportunity*, in the participation context, is a situation that enables the community to engage in the development process (Aas et al., 2005; Bahaire & Elliot-White, 1999). Put simply, opportunity is an event or tools that allow community to contribute directly to the local tourism development. Finally, *ability* is the community resources required to benefit from tourism (Bahaire & Elliot-White, 1999; Timothy, 2002). Ability is seen as a combination of community awareness, knowledge, experiences, skills, accessibility to information and financial resources (Jepson et al., 2014). In this current research, the MOA framework is adopted to not only explain factors that enable the community to participate in tourism but also to address limitations to community participation in developing countries using Tosun's (2000) three categories: practical, cultural and structural limitations. Providing insights into the motivation, opportunity and ability for destination community participation is significant to enable a participatory process. Further discussion of MOA framework and its application as an analytical framework in this research is explained in section 2.5.3. Importantly, this research explores an alternative approach to addressing challenges related to community participation; that is through the adoption of ICT applications, with a specific focus on DMSs.

## **2.3. ICT and Sustainable Tourism**

ICT development has revolutionised tourism practices within the visitor industry. The ability of ICT to remove communication barriers has helped create new forms of production, organisation and consumption of tourism products (Benckendorff et al., 2019; Buhalis, 2003, 2020; Trunfio & Campana, 2019). The continuous advancement of ICT will potentially increase its contribution to shaping future tourism practices, including supporting the application of sustainable tourism. The potential ability of ICT to support sustainable tourism has received much attention from academia (Ali, 2022; Ali & Frew, 2013; Benckendorff et al., 2019; Gössling, 2017). Thus, the discussion of the interrelationship between ICT and sustainable tourism has increasingly become the focus of scholarly attention.

### **2.3.1. ICT Adoption in Tourism**

*Information and communication technology* (ICT) has been defined as a combination of hardware, software, groupware, network and humanware, the latter creating the intellectual capacity to develop, programme and maintain the preceding four dimensions (Buhalis, 2003). In an organisational context, ICT often refers to information systems (IS) (Benckendorff et al., 2019). The description of ICT is progressing along with the advancement of ICT and its capabilities. From 2010s, ICT represented the “seamless

integration of computing, electronics, networking, and telecommunication resources into a unified and coherent system that allows them to be used significantly” (Song et al., 2016, p 19). The understanding of ICT has evolved following its improved ability and the way it is used. This current research defines ICT as the interconnection between the technological elements in hardware, software and humanware that synchronise continuously to create a seamless network that provides a digital environment for users to interact in. Put simply, ICT nowadays is associated with the tools that connect users to the global network known as the digital world.

Tourism is an information-intensive industry; therefore, adopting ICT is essential for tourism development (Buhalis, 2003; Benckendorff et al., 2019; Cai et al., 2019). Many tourism organisations and destinations use ICT innovations to shape their strategic management and marketing to refine the best operational practices (Buhalis, 2020). ICT has been a catalyst for tourism development; however, the establishment of the internet had a more significant influence on the tourism industry due to its function in creating integrated networks and enabling global dissemination of information (Benckendorff et al., 2019; Leiner et al., 2009), thus allowing tourism businesses to reach a larger market and provide more efficient services. Adoption of the internet in the tourism industry has driven innovations in tourism practices. The term *e-tourism* emerged in the late 1990s and early 2000s in academic literature to illustrate the digitalisation of various functions and value chains in the tourism industry, with discussion mainly focusing on the digitalisation of tourism products and services (Ali & Frew, 2014a; Buhalis, 2003; Shafiee et al., 2019). According to Buhalis (2020), the development of blogs and social media platforms have changed the pattern of communication in tourism businesses from a simple producer-to-consumer interaction to a more complex range of interactions that involves many stakeholders including online travel communities. This indicated a significant milestone for ICT adoption in tourism and was coined in the early 2000s known as the Web2.0 era.

More recently, evolutions in ICT, such as extensive data management supported by the advent of ICT devices like mobile technology, have moved technology adoption in tourism to the next milestone. The extensive network and greater interconnectivity between individuals (Buhalis & Amaranggana, 2013) and novel technologies such as big data and machine learning, which create new data processing mechanisms, have advanced ICT adoption in tourism from the traditional e-tourism concept to one of smart tourism (Gretzel, Sigala, et al., 2015). *Smart tourism* can be defined as the collaborative efforts in the destination to obtain information from both physical and digital sources, combined with the use of advanced technology to store the data and transform it into a tourism experience and business value proposition that emphasises efficiency, sustainability and experience enrichment (Gretzel, Sigala et al., 2015). Alternatively, a

smart tourism destination is illustrated as an ecosystem consisting of a plethora of tourism actors as entities that are interconnected in the digital environment through ICT tools (Boes et al., 2016; Gretzel, Werthner et al., 2015). Within an ideal smart tourism concept, all tourism actors consistently share information to co-produce the destination's value proposition to enhance tourists' experience and residents' quality of life, therefore supporting sustainable tourism development (Buhalis & Amaranggana, 2013; Gretzel, Sigala, et al., 2015).

Boes et al. (2016) contend that smart destination structures include a nontechnological dimension labelled "soft smartness", which complements the technological dimension in the concept. The soft smartness component includes open innovation, human and social capital, leadership and collaborative government. In an ideal world, the soft smartness factors enable tourism stakeholders to cultivate benefits from the knowledge circulated from the smart systems. While the concept of smart tourism captured the needs of tourism stakeholders' collaboration well in enhancing **sustainable** tourism destination development and marketing (Femenia-Serra & Ivars-Baidal, 2021), its application is still difficult to achieve, particularly in connecting community to the network.

In the literature, particularly in empirical evaluations of smart tourism, most implementations of smart systems in tourism destinations remain focused on enhancing tourist experiences through the adoption of various technologies. For instance, in Guangzhou, China, smart technologies are utilised to collect real-time data that enhance tourism services such as emergency responses and immersive experiences (Luo, 2025). Similarly, automation technologies such as chatbots are employed to improve real-time service delivery for tourists (Badouch et al., 2024). In Romania, smart tourism technologies are used to increase tourist satisfaction by providing new forms of digital experiences (Ionescu & Sârbu, 2024).

The literature on smart tourism also highlights the potential of smart systems to advance various aspects of tourism management. Gretzel's (2022) work suggests that the implementation of smart tourism can foster collaborative governance, while smart technologies are also widely applied to improve business efficiency (Ionescu & Sârbu, 2024). The interconnectivity of tourism actors, facilitated by smart technologies, is seen to encourage collaborative planning (Buhalis & Amaranggana, 2013; Gretzel, Sigala, et al., 2015) and strengthen place attachment (Singh et al., 2025). Meanwhile, Rodrigues et al. (2023) identify smart sustainable destinations as one of the most widely discussed themes in the smart tourism literature, alongside visitor experience and business solutions. However, they argue that the implementation of smart approaches often fails to align with their conceptual foundations, a concern similarly raised by Hernández et al. (2019). Although the smart tourism concept theoretically accommodates the needs of all

actors, including host communities, discussion of how these systems can effectively enable community participation and engagement remains limited. The challenge of integrating residents' collaboration within smart tourism initiatives persists (Lalicic & Önder, 2018). Addressing these shortcomings, Ye et al., (2021) identified six barriers to a smart tourism project in Hong Kong: infrastructure problems, software barriers, administrative issues, acceptance of the public, market issues, and social solutions. The barriers for the implementation of the smart tourism concept found in Hong Kong's smart destination project present both technological and non-technological challenges. Thus, it is fair to say that the smart tourism concept is still developing; it will take trial and error to be optimally implemented.

The discussion in this section suggests that technology has been a powerful driver of innovations in the tourism industry. The evolution of technology and its adoption in tourism have created greater opportunities for innovation in tourism practices, such as smart tourism, which can enhance the industry's ability to address persistent and emerging challenges. However, technology is not the only factor. Non-technological factors such as leadership (Buhalis, 2020; Spencer et al., 2012) and governance (Ivars-Baidal et al., 2019) also play a vital role that can decide the effectiveness of technology adoption in tourism practice. Trunfio and Campana (2019) suggest that integrating local knowledge in the destination can help drive innovation, including more effective ICT adoption in tourism practices. With this perspective, ICT does not constitute an innovation in tourism destinations (Trunfio & Campana, 2019), but it does play a significant role as an enabler of knowledge circulation and eventually becomes a catalyst for innovation in tourism (Ali & Frew, 2014a; Buhalis & Law, 2008). This implies that ICT adoption needs to be driven by the destination's unique social condition to provide effective solutions for local tourism issues, including addressing long-standing and pressing issues such as implementing sustainable tourism (Ali, 2022; Milne et al., 2005; Vidal-Serrano et al., 2022), among other factors. Therefore, the discussion of ICT's role in enabling sustainable tourism practices is justified.

### **2.3.2. ICT Enabled Sustainable Tourism**

The potential of ICT to support the implementation of sustainable tourism has been recognised for several decades. In Ruhanen's (2008) review of progress in the discussion of sustainable tourism in academic literature, she mentions that ICT can provide a solution to fill the gaps in sustainable tourism knowledge management. According to Benckendorff et al. (2019) and Gössling (2017), discussion of the interrelationship between ICT and sustainable tourism gained more attention in the 2010s. However, almost a decade after 2010s, Gössling's (2021) article implies that the potential of ICT application for sustainable tourism practices has not been optimised and

suggests that more research about the impacts of ICT on the sustainable management of tourism is needed. Despite increasing academic attention on the adoption of ICT platforms to support sustainable tourism, the progress of their implementation remains slow. More research is needed to develop practical frameworks for ICT adoption that effectively support sustainable tourism practices.

Ali and Frew (2013) focus on ICT as a solution that can contribute to the implementation of sustainable tourism and recommend several ICT-based platforms that they see as innovative drivers of sustainable tourism practice. These include computer simulations; geographical information systems (GIS); global positioning systems (GPS); intelligent traffic systems; weather, climate and ocean change forecasting software; environmental information management systems; economic impact analysis software; community informatics (CI); and destination management systems. Supporting Ali and Frew's (2013) proposal, Benckendorff et al. (2019) also suggest some sustainable tourism practices that ICT can support. ICT can contribute to enabling the management of tourism resource efficiently, ensuring environmental purity and physical integrity, conserving biological diversity, facilitating virtual substitute of travel experience, fostering social equity and community well-being, ensuring local control, promoting the cultural richness of host communities, fostering economic viability and local prosperity, and improving employment quality and capacity building. Although the prospects of the application of ICT in sustainable tourism practices addressed by Ali and Frew (2013) and Benckendorff et al. (2019) look promising, there is an obvious question mark on which technologies can contribute to which sustainable practices and, most importantly, the question on how ICT-enabled sustainable tourism practices can be successful. There is a need for more conceptual and empirical research to realise the potential of ICT as a significant enabler of sustainable tourism.

Several authors have focused on the adoption of ICT to support sustainable tourism practices (Barandiaran et al., 2019; Budeanu, 2013; Erol et al., 2022; Gössling, 2017; Valls & Roca, 2021). Valls and Roca (2021) investigate tourism hotspot mapping using social media and big data applications. The big data analysis tool is used to identify tourist attraction density at a particular time; this is achieved by processing shared images of tourist attractions published on social media. The authors conclude that tourism hotspot density can inform decision-making in the urban planning process, thus helping to ameliorate the negative impacts of having too many people in one place at one time. On a similar theme, Barandiaran et al. (2019) explore the application of a collaborative governance project named Etorikizuna Eraikiz in Gipuzkoa, Spain. Etorikizuna Eraikiz initiatives use ICT tools to operate a tourism observatory platform that aims to collect and disseminate information about tourism programmes to equip local tourism stakeholders with appropriate knowledge so they can better contribute to the

collaborative government initiative (Barandiaran et al., 2019). These studies (Barandiaran et al., 2019; Valls & Roca, 2021) provide a few examples of the contribution of ICT to sustainable tourism practices, particularly in facilitating collaborative decision-making. While ICT plays an essential role as a facilitator, the non-technological factors help cultivate the adoption of the technologies for collaborative planning. In Valls and Roca's (2021) case, the leadership of the urban planning agency plays a role in designing the application of ICT as tools to improve capabilities to collect and aggregate strategic information for the decision-making process, while Barandiaran et al. (2019) indicate that strong coordination between tourism actors in Gipuzkoa is a prerequisite for the success of the ICT-enabled collaborative planning initiative. Although ICT tools such as social media platforms, big data analysis, and web-based applications were not initially designed for planning purposes, their strategic adoption has proven effective in facilitating collaborative planning. This suggests that non-technological factors, such as the leadership of ICT operators and the relationships among tourism actors, are among the many determinants of successful ICT adoption in supporting sustainable tourism practices.

Other empirical assessments of ICT adoption in sustainable tourism management, however, indicate a less encouraging result. Gössling's (2017) research focuses on how social media or user-generated content (UGC) can support environmental, socio-cultural and economic sustainability practices. Gössling concluded that although there are some ways that technology, in this case social media, can help sustainable tourism practices, the relationship between ICT and sustainable tourism practices is still problematic and offers an example of the paradoxical impacts of social media on sustainable tourism. He suggests that social media can be used to increase demand for tourism products, including green (environmentally friendly) products, while on the flip side, promoting tourism also means encouraging travel and subsequently increasing the carbon footprint from tourists' aero mobility. In a similar vein, Budeanu's (2013) work observes TripAdvisor as a neutral space to initiate the conversation about more sustainable tourism products and found minimal dialogue related to sustainable tourism products on TripAdvisor even though many users of the platform labelled themselves as green businesses or tourists. Gössling's (2017) and Budeanu's (2013) studies show that even when ICT positioned as a facilitator of sustainable tourism, the result can sometimes be derailed from the original purpose. Accordingly, Gössling (2021) argues that a critical evaluation of ICT adoption in tourism must explore its strategic role in destination management, including its contribution to sustainable tourism practices, and that this critical evaluation is still scarce.

Another common theme in scholarly articles on the links between ICT and tourism is a proposal for the advent of technological utilisation in sustainability practices. Erol et al.

(2022) explore the possibility of blockchain system adoption in the tourism industry to aid the implementation of the sustainability principle. Blockchain adoption in tourism could help improve the safety, security and reliability of tourism products, which in turn could contribute to enhancing the local economy, regulating the food supply chain, improving tourist satisfaction, influencing sustainable tourist behaviour, and addressing sustainability awareness (Erol et al., 2022). Buhalis (2020) briefly mentions the ability of the metaverse (three-dimensional virtual worlds in which users represented by avatars interact) to enhance the tourist experience through its ability to, for example, relive a local cultural event digitally; this can provide a more authentic tourism experience while also supporting the documentation and conservation of local culture. The reoccurring challenge of the advent of technology used for sustainable tourism management is its impracticality, as the application of this technology is still in its infancy, and adjustments and improvements are needed to properly adopt such technology, especially in developing countries. Buhalis (2020) also highlights concerns about safety and security when adopting new types of technologies. For example, the safety and security issues in applying the metaverse includes privacy and consent concerns, which also relate to the commodification of culture within the digital ecosystem.

ICT discussions in tourism literature are heavily focused on the demand perspective, namely, visitors' needs (Law et al., 2019; Navío-Marco et al., 2018), and dominated by economic narratives (Gössling, 2021). Thus, despite the early attention from academics on the ICT and sustainable tourism nexus, the conversation has now stagnated. There remains a significant gap in the extant literature related to the connection between ICT and its contribution to the implementation of sustainable tourism, as mentioned at the start of this section. Gössling's (2017) and Budeanu's (2013) studies suggest that the ICT relationship is not straightforward and that the outcome of ICT adoption on sustainable tourism practices is not always as expected. Therefore, evaluation of the impacts of ICT on tourism management will illustrate the contribution (or lack of contribution) that technologies can bring to sustainable tourism practices. Moreover, a strategic adjustment in management and how ICT tools are used must be explored. The success story of ICT-enabled collaborative planning (Barandiaran et al., 2019; Valls & Roca, 2021) indicates that strategic adoption and management of ICT platforms is a prerequisite for sustainable tourism practices. This suggests that the non-technological factors behind the adoption of ICT is significant in determining the outcome of ICT adoption. Thus, evaluating and exploring the strategic adoption of ICT will provide insight on the connection between ICT platform operation and sustainable tourism practice outcomes. Finding the best combination of ICT platforms and their adoption will answer further questions on how ICT can contribute to sustainable tourism outcomes.

Sustainable tourism practices are associated closely with the destination management, which is also related to the areas of DMO responsibility.

## **2.4. Destination Management Organisations (DMOs) and Destination Management Systems (DMSs)**

Several authors argue that DMSs are among the ICT platforms that can aid sustainable tourism development (Ali & Frew, 2013; Ali & Frew, 2014a; Benckendorff et al., 2019; Estêvão et al., 2020a; Martins et al., 2021). Ali and Frew (2014b) reported that 32 of the 37 managers they interviewed believed that ICT could serve as a valuable tool in promoting sustainable tourism. These managers perceived ICT as either “very important” or “important” in enabling innovative practices for sustainable tourism. In their earlier work, Ali and Frew (2013) suggested that DMS functions could be expanded to support sustainable tourism by facilitating interaction between the destination community and tourists. This would allow the local population to participate in the formulation of tourism development plans and strategies. Additionally, DMSs could provide context-based information to tourists, helping them gain a better understanding of the destination and its cultural aspects. Lastly, DMSs could also encourage sustainable behaviours among local stakeholders. While DMS is essentially being used as a distribution and marketing tool for the destination by the DMO, the system has the potential to link all the destination stakeholders (Viglianisi & Rugolo, 2021). Some authors suggest that the DMS can assist a DMO to encourage cooperation and collaboration among destination stakeholders (Estêvão et al., 2020a, 2020b; Martins et al., 2021). While the promotion of cooperation and collaboration among destination stakeholders is crucial for sustainable practices, only a limited number of DMSs showcase content or **features** that demonstrates the DMO’s strong emphasis on utilising the DMS as a strategic tool for this purpose. This section examines the existing literature on the functions, concept, and application of DMSs. The review begins by introducing DMOs as the primary operators of the system. It then presents a comprehensive overview of the development of DMSs, starting from their initial introduction, and discusses their functionalities and adoption.

### **2.4.1. Destination Management Organisation (DMO)**

Sheehan, Vargas-Sanchez, Presenza, and Abatte (2016) define the *destination management organisation* (DMO) as a body that oversees planning, managing and organising destination resources, or in many destinations, the DMO is known simply as a tourism governance institution. A DMO can operate at all levels: national, sub-national, regional and local. This definition suggests that DMOs can be represented by various forms of organisation, such as national or regional government, a locally formed body,

and a public-private partnership, depending on the geographical scale or administrative level of the destination.

DMOs were originally characterised as destination marketing organisations, which encapsulated their function at that time as predominantly an organisation that coordinated the marketing activities of the tourism destination (Corak & Zivoder, 2017; Gartrell, 1994; Pike & Page, 2014). The need to transform the responsibilities of the DMO from marketing to broader management is driven by the growing challenges of sustainable development which require tourism management that focuses on the effective use of resources, ensuring community welfare, and maintaining the destination's competitive edge (Corak & Zivoder, 2017).

The concept of a *destination* is a crucial component of the DMO and its role in establishing the environment and framework within which DMOs function. From a global tourism system standpoint, a tourism destination is regarded as a noteworthy factor and is always associated with the geographical area where visitors experience tourism products (Viken, 2014). The term destination as a concept can be seen from various perspectives (Fletcher, 2018; Viken, 2014). From the demand perspective, the destination could be larger or smaller than a political and administrative area (Fletcher, 2018). Lake Toba in Indonesia, for example, is seen as a destination for tourists. At the same time, from the supply perspective, Lake Toba consists of eight regions with several tourism authorities and is perceived as more than one destination.

Boes et al. (2016) discuss the concept of a destination in terms of the smart tourism framework and argue that seeing the destination in service-dominant (S-D) logic is beneficial as the framework best describes the collaboration of tourism actors in the co-creation of destination value. In the S-D logic framework, the destination is described as a service ecosystem where tourism actors interactively link, dynamically integrating resources, and sharing and exchanging services to create value for themselves and the destination (Liang et al., 2023). In the same vein, Trunfio and Campana (2019) suggest the concept of a knowledge-based destination in which a destination is defined as a complex social network of competencies that coordinate all tourism actors and resource configurations to deliver and mediate the co-creation of tourist experiences through an innovative process that supports regional growth. These concepts (S-D logic-framed destination and knowledge-based destination) and the notion of an *ecosystem* emphasise that a destination is an intricate system where all the actors, including the demand and supply side as well as the host community, collaborate to generate destination value. This perspective offers a more holistic understanding of a destination compared with solely focusing on either the demand or supply aspect.

As DMOs move from a focus on destination marketing towards more destination management, the role and responsibilities of the DMO have expanded. Foris and Bivolaru (2022) conducted research in Brasov, Romania, and found that various tourism stakeholders, including academics, government administrators, travel guides and local business owners, perceive the DMO as having several key functions. These functions include coordinating between stakeholders including residents, spearheading the establishment and implementation of strategic sustainable development goals, facilitating stakeholder networks, and ensuring transparency and efficiency in destination management. In line with Foris and Bivolaru, 2022, Mahlangu (2021) highlight the significant role of DMOs in South Africa, with a particular emphasis on stakeholder coordination. As detailed by Mahlangu, DMOs in South Africa are responsible for the planning, monitoring, and evaluation of tourism activities to ensure effective destination management. In contrast, Idisonjaja et al. (2023) describe Indonesian DMOs as orchestrators with a more centralised authority, primarily focused on enhancing visitor satisfaction. Idisonjaja et al. assert that to successfully perform their role, Indonesian DMOs must demonstrate capabilities in resource management, marketing, and building strategic networks. Unlike South African and Romanian DMOs, which act more as facilitators, Indonesian DMOs possess the authority to direct resources and stakeholders, positioning them as pivotal players in the creation of visitor-centric value for the destination.

Recent advancements in the adoption of ICT in tourism development management stress the importance of DMOs embracing the smart destination approach (Gretzel, 2022). In order to effectively implement this approach, DMOs need to position themselves as intelligence agents that facilitate knowledge management and strategic decision-making (Sheehan et al., 2016). According to Gretzel (2022), a *smart destination DMO* should adopt six key functions – mobilising, matchmaking, managing, sensing, shapeshifting, and stewardship – to enable the collaboration of tourism actors and promote flexible value co-creation. Additionally, Zainal-Abidin et al. (2023) highlights the crucial leadership role of DMOs in establishing the governance structure of tourism destinations.

Despite the various concepts surrounding the role of DMOs, numerous obstacles hinder their ability to effectively carry out the suggested management role. Hristov and Zehrer (2019) indicate that the uncertain nature of political support and government funding is the main challenge for DMOs in the United Kingdom to operate sustainably. Likewise, Pike and Page (2014) warn that DMOs do not have the capacity to accommodate all tourism destination management functions without political and regulation support. Idodjanja et al. (2023) suggest that the tourism policies of a country play a pivotal role in shaping the structure, roles, and objectives of DMOs. In the case of Indonesia, the

nation's pro-growth tourism policy significantly influences DMOs to prioritise visitor satisfaction, often positioning economic growth and tourist experience as central to their operational focus. In the context of Croatian DMOs, Corak and Zivoder (2017) argue that human and financial capacity are the main challenges for DMOs to operate sustainably. *Management* from a business perspective entails various functions, from planning to evaluation; however, the DMO is not a corporate-like business entity. Therefore, its role in terms of a destination, which is a complex network system, is unlike managing a corporation. Reflecting the views of several scholars (Foris & Bivolaru, 2022; Corak & Zivoder, 2017; Gretzel, 2022; Sheehan et al., 2016; Zainal-Abidin et al., 2023), the DMO management role is related to *enabling* the tourism system in the destination to work sustainably; thus, the role entails leadership, facilitation, mediation and coordinating tourism actors' collaboration, while also realising its traditional marketing responsibility. Ultimately, the ongoing evolution of the role of the DMO is centred around prioritising and addressing sustainability challenges, as mentioned earlier.

#### **2.4.2. Destination Management System (DMS)**

The absence of a standardised definition makes it difficult to define a destination management system (DMS) (Horan, 2010; Sigala, 2014; Sourak, 2015). This lack of standardisation highlights the diverse ways in which DMSs are adopted in various contexts. It can also be challenging to determine which ICT platforms make up a DMS. However, the DMO web-based platform is commonly regarded as a DMS. Unfortunately, the absence of a universally agreed-upon definition for the system complicates matters. Sigala (2014) states that many DMS definitions describe the DMS as an inter-organisational system in which its operation involves more than one entity. In many discussions, the DMS is associated with specific tourism destinations on various scales (Benckendorff et al., 2019; Sussman & Baker; 1996). Many scholars point out that the DMS focuses on improving tourism destination competitiveness, particularly of small and medium tourism enterprises (SMTE) (Benckendorff et al., 2019; Horan, 2010; Sourak, 2015; Sigala, 2014). Sourak (2015) adopted the Delphi method in this study and based on discussion with experts and accommodating descriptions from previous studies, he offers the following definition:

... systems that consolidate and distribute a comprehensive range of tourism products through various channels and platforms, generally catering to a specific region and supporting the activities of a destination management organisation (DMO) within that region. Destination management systems attempt to utilise a customer-centric approach in order to manage and market a destination as a holistic entity, typically providing strong destination-related information, real-time reservations and destination management tools and paying particular attention to supporting small and independent tourism suppliers. (Sourak, 2015, p. 135)

Sourak's (2015) definition of DMS represents the most recent comprehensive attempt to conceptualise DMS within academic research. However, the definition continues to characterise DMS primarily as a marketing platform, enhanced by transactional systems. From a technical perspective, DMSs can be defined as web-based information systems operated by DMOs to represent the destination and tourism products as one entity to potential or actual visitors (Sigala, 2013). The front end of a DMS is commonly referred to as the destination website, and often incorporates the name of the country or region it represents. Examples include VisitSingapore.com for a national-level destination and Bournemouth.co.uk for a regional destination. In contrast, the back end of the system, which consists of data management and structure, underpins the front end or “shop window” seen by the users (Benckendorff et al., 2019). Horan (2010) argues that there are two standard models of DMS: 1) an information provision system, or 2) a fully transactional model. However, while the information provision system is widely adopted in many destinations, the fully transactional model remains less common, particularly in developing countries.

In this current research, DMS refers to the ICT application that represents a tourism destination, that is operated by the managing organisation of the destination (i.e., the DMO), and that focuses on providing various tourism-related information. Thus, for the purpose of the research, the destination ICT platform is referred to as a DMS. In so doing, this doctoral thesis adopts a broader definition of the DMS as one of the main focuses of this research is assessing various types of DMSs around the world. Framing the DMS from more general perspectives allows this research to get information from various types of DMSs adopted by different DMOs. The DMO-operated tourism destination websites are used as the entry point to enter and assess the DMS at each destination. Alternatively, if a destination does not have a DMO-operated website, a web-based ICT platform that provides more extensive information about the destination is seen as a DMS; for example, stayrajampat.com. An important focus of the empirical evidence gathered for this PhD research is to clarify DMS terminology, and so it is logical to have a broader definition of the DMS as a starting point.

The original function of the DMS is consistent with the initial focus of the DMO, i.e., the destination marketing organisation role (Pollock, 1995). This indicates that the functions of a DMS are a direct representation of the DMO's focus as the main operator of the system. As the roles and functions of DMOs have progressed over time, it is only natural that the function and purpose of DMSs should, correspondingly, have also grown and advanced. The following discussion delves into the evolution of the DMS concept to clarify how the term DMS is used within the framework of this research.

### 2.4.3. DMS Evolution

Sheldon (1993) introduces the term *destination information system* (DIS) to describe the ICT tools used by a national tourism organisation (NTO) or regional tourism organisation (RTO) to disseminate tourism information in the destination for promotion purposes. DIS functions focused on providing tourism-related information about the destination (Sheldon, 1993), mainly for travel advisors and tourists (Benckendorff et al., 2019). Pollock (1995) first coined the term “destination marketing system”, shortly after the emergence of the modern internet. Pollock’s work on the destination marketing system concept evolved from earlier descriptions of the DMO’s ICT infrastructure, such as the DIS described by Sheldon (1993).

Initially, DMS or destination marketing system were created with solid marketing functions for the destination (Ali & Frew, 2013; Pike & Page, 2014; Sussmann & Baker, 1996), aiming to improve national and regional tourism competitiveness (Benckendorff et al., 2019; Sussman & Baker, 1996). Pollock’s (1995) version of a destination marketing system had limited functionalities as the transactional and interactive functionalities had not yet developed. The functions of the DMS were a direct representation of the DMO’s focus as the main operator of the system. As destination marketing organisation have been encouraged to evolve and adopt broader management functions, there is a growing need for destination marketing system to support these management responsibilities. Consequently, the term “management” was incorporated into the system’s name, transforming the DMS from being a destination marketing system to a destination management system.

The significant difference between the DMS and its predecessors, the DIS and destination marketing systems, is the DMS’s inter-organisational approach to creating a link between tourism suppliers and demand (Estêvão et al., 2020a; Sigala, 2013). However, in practice, this distinction is often difficult to discern, as it is unclear whether the tourism supplier is contributing to the content within the system or if the website operator is primarily responsible for producing the information. Some DMSs have become digital intermediaries for the destination, with the aim of improving the competitiveness of the local SMTE in the destination (Benckendorff et al., 2019; Horan, 2010; Sigala, 2014; Sourak, 2015). However, many DMSs still focus on delivering information about a destination and offer minimal interactive functionalities (Benckendorff et al., 2019; Estêvão et al., 2020a; Zach et al., 2007). Benckendorff et al. (2019) also state that the distinct difference between the modern DMS and its predecessor is the dynamic nature of the information offered on the website, which takes advantage of interactive functionalities such as the content management system (CMS). Recent discussions in the literature on DMSs have increasingly shifted towards a focus on their

adoption and functions, such as content and application. This shift builds upon the foundational concepts and technical constructions of DMSs, as explored in the literature.

#### **2.4.4. DMS Functionalities**

The construction of DMS functionalities consists of information, communication, relationship, transaction and technological dimensions (Benckendorff et al., 2019; Estêvão et al., 2020a; Wang & Russo, 2007). These *functionalities* cultivate DMS abilities in producing content and feature, which is known as the *DMS functions*. In the literature, the information functionality pertains to the DMS's ability to effectively convey information to the website audience. Communication, relationship and transactional functionalities reflect the system's ability to provide tools that enable users to interactively engage with the platform. The technological dimension refers to the system's capacity to integrate advanced technologies into its operations.

The *information dimension* is the core functionality of a DMS as a representation of a tourism destination that must provide accurate and reliable destination information (Benckendorff et al., 2019; Wang & Russo, 2007). Additionally, Estêvão et al., (2020a) explain that DMO web platforms, including DMS information functionalities, seek to provide tourists with information about the attractions, services, access routes and other relevant aspects of the destination with various degrees of detail and forms. Estêvão et al., also notes that although the information dimension is a vital part of the DMS, there is little to separate a DMS from other platforms that seek to offer static tourism information, which resemble e-brochures. However, Benckendorff et al.'s (2019) explanation of the information dimension of the DMS includes an element of time in the information published on the system. Benckendorff et al. stress the importance of frequently updating DMS information to ensure accuracy. While Benckendorff et al. highlight time relevance when discussing the information accuracy of the DMS, accuracy also encompasses relevance to the actual conditions on the ground, where the local community often possesses better knowledge than the website operator. Benckendorff et al. describe the dynamic nature of information provided by a DMS, highlighting the distinction between a DMS and a traditional tourism website, which often functions like an e-brochure. Thus, the involvement of the community in content creation must also be considered as a key factor contributing to the dynamism of DMS information, further distinguishing DMS from older DMO ICT platforms.

The *communication dimension* in DMS functionalities refers to a two-way connection between users and the DMO (Benckendorff et al., 2019). It provides a way to build, organise and disseminate information (Wang & Russo, 2007). However, the early concept of a DMS suggests that the DMS should not only focus on facilitating communication between visitors and the DMO but also with other tourism actors,

particularly tourism businesses and service providers in the destination (Buhalis, 2003; Estêvão et al., 2020a). Regular communication among tourism actors strengthens relationships between them and enhances tourism's potential to benefit all participants in the tourism system (Zainal-Abidin et al., 2023). When viewing a tourism destination through an ecosystem lens, tourism actors are all those parties in the destination who can influence value co-creation, and/or are influenced by tourism; therefore, with this in mind it must be noted that tourism actors do indeed include the local community.

The *relationship dimension* of DMS functionalities entails functions that allow a marketer to understand many aspects of consumers through dynamic interactive communication with their customers (Benckendorff et al., 2019; Wang and Russo, 2007). Integrating customer relationship management (CRM) initiatives, such as email newsletters and loyalty programmes, is the most used example in providing a relationship dimension in a DMS (Buhalis, 2003; Benckendorff et al., 2019; Estêvão et al., 2020a; Wang & Russo, 2007). While the majority of studies about the relational aspects of the DMS are focused on consumers, the initial idea of the DMS implies its involvement in cultivating partnerships with stakeholders in the destination, fostering cooperation and enabling collaborative practices (Del Chiappa & Baggio, 2015; Estêvão et al., 2020a, 2020b; Martins et al., 2021; Sigala, 2014; Sigala & Marindis, 2010).

The *transaction dimension* of a DMS refers to the functionalities that allow direct bookings for many tourism products and services in the destination and provide secure transactional capability (Benckendorff et al., 2019). The provision of a secure online environment for consumer transactions can help build trust between consumers, suppliers and the DMO, leading to a better relationship (Wang & Russo, 2007). In the DMS context, the transaction dimension is not only a function that benefits consumers to facilitate their travel arrangements but also a tool that provides local tourism suppliers and service providers with an additional distribution channel to strengthen their business activities and increase profit (Ivars-Baidal et al., 2019). The transaction function within a DMS can offer a solution for destinations to reduce their reliance on external intermediaries, such as online travel agents (OTAs), thereby minimising economic leakage (Sigala, 2014). By incorporating transactional functionality, the DMS acts as a local intermediary, preventing commissions from OTAs like Expedia from flowing out of the local tourism economy and into global corporations. However, unlike OTAs, which have established credibility in their transactional systems with both customers and suppliers, DMS, along with DMOs as operators, particularly in developing countries, are not widely recognised for managing the online distribution of tourism products. Therefore, building trust with the market and tourism businesses at the destination is crucial for the successful adoption of transactional systems within DMS.

Benckendorff et al. (2019) include the *technological dimension* of DMS functionalities. This refers to the technological capabilities of the DMS that influence its performance in providing its services to the users. Some examples used by Benckendorff et al. in describing the DMS technological dimension are loading time, search application, site map, navigation and visual appearances. However, the standard elements of digital platforms have led to the assumption that the technological aspect of DMS functionalities is a given and so this dimension has not been explored extensively. The technological dimension functionalities are mainly used as a performance evaluation indicator of the DMS (Sigala, 2014).

DMSs stand out from other destination web-based platforms due to their wide range of functionalities that go beyond simply providing visitor information. These include communication, relationship and transactional functionalities, as highlighted by Estêvão et al. (2020a). Interestingly, Estêvão et al. also note that most DMSs offer limited access to these functionalities. Moreover, Estêvão et al. argue that DMSs that do provide communication, relationship and transactional functionalities focus on facilitating the connection between visitors and tourism suppliers. Only a few DMSs facilitate destination/local stakeholder collaboration, which focuses on connecting tourism suppliers in the destination, i.e., tourism businesses. The emphasis on DMS functionalities, as discussed in the preceding paragraphs, aligns with Zainal-Abidin et al. (2023), who raise concerns about DMO platforms' lack of focus on stakeholder management, prioritising instead the provision of destination and visitor information. DMS functionalities tend to concentrate on supporting the commercial aspects of destination management while neglecting strategic functions such as community engagement. This is consistent with Gössling's (2021) critique of tourism ICT adoption, which tends to prioritise boosting the visitor economy over more holistic destination management strategies.

#### **2.4.5. DMS Adoption and Community Participation**

The term 'destination management system' was initially introduced 30 years ago, but discourse about DMSs persists in scholarly literature, especially regarding the concept of DMS has been implemented in destination management practices throughout the years. Despite the forward-thinking notion of destination management and, consequently, the evolution of DMOs, DMS implementation remains predominantly centred on its marketing role. For example, Zehrer et al.'s (2005) study on a DMS in South Tyrol, Italy, highlights its emphasis on providing extensive information about tourism services within the destination, such as accommodation, attractions and restaurants. Additionally, the system offers a comment box for tourists to review tourism products, reinforcing its marketing-centric role. While Zehrer et al. suggest visitors'

reviews can help improve the quality of tourism products, the focus of such functions is to improve the commercial value of tourism products. It is also worth highlighting that the South Tyrol DMO has the authority to verify and publish content presented in the DMS (Zehrer et al., 2005), signifying a top-down approach in its operation. Estêvão et al.'s (2020a) study provides one of the more recent empirical assessments of some USA and European DMSs. Their study suggests that most DMSs have not yet fully utilised their interactive and transactional functionalities and heavily depend on the information dimension of the DMS to promote a destination and its tourism products. Regarding transactional functionalities, Estêvão et al. (2020a) argue that many DMSs are beginning to integrate third-party distribution systems, such as OTAs, to cater to potential visitor preferences, particularly for price comparisons across external platforms. This finding highlights another indication that most DMSs are primarily designed to meet visitor needs, often neglecting the challenges faced by local business owners in dealing with external distribution system and addressing the issue of visitor economy leakages at the destination.

Many scholars call for the extension of DMS marketing purposes particularly to facilitate the collaboration of local tourism stakeholders by optimising its functionalities specifically the communication, and transactional dimensions (Estêvão et al, 2020a; 2020b; Gretzel, 2022; Zainal-Abidin, et al., 2023; Zehrer, et al., 2005). Martins et al. (2021) argue that a DMS could facilitate stakeholder collaboration, particularly to co-produce marketing content, by applying an information distribution system, a transactional and booking system, and a module of customer relationship management. Estêvão et al. (2020a, 2020b) echo the DMS role in facilitating tourism services providers to foster cohesion of tourism products. Estêvão et al. (2020a) conclude that the DMS communication, relationship and transactional functionalities are essential tools to address the DMS role as a catalyst for stakeholder collaboration. However, the same study also found that the mentioned functionalities (communication, relationship and transactional) are seldom applied in many DMSs. Estêvão et al.'s study also suggests that although CMS were typically recognised for their interactive features within DMS, currently many DMSs operators have chosen to exclude these functionalities. This decision stems from the perception that web pages individually managed by local businesses on the DMS are often of poor quality. As a result, instead of enhancing the capabilities of businesses in creating content to promote their services on the DMS, operators tend to forgo the CMS, thereby missing the opportunity to incorporate valuable local knowledge into the DMS content.

Meanwhile, as an inter-organisational information system (IOIS), the success criteria of any DMS should also consider the outcomes of the DMS for local stakeholders and the performance of the DMS functionalities (Sigala, 2014). While these two variables

address the multi-stakeholder approach of the DMS concept, it is not clear how the measurement of the variables would be applied in practice. Le et al., (2022) evaluate the Vietnam national DMS and attribute what they argue is a failure of the destination Vietnam website, to the absence of a transaction system and inadequate tourism business database. Le et al. also propose that their ideal DMS is one where all tourism stakeholders, including tourism service providers and the local community, benefit from a visitor economy enabled by the system.

While DMSs were developed in the wake of the e-Tourism concept, some scholars suggest that DMS platforms are still relevant for destination management within smart tourism frameworks (Del Chiappa & Baggio, 2015; Gretzel, 2022; Ivars-Baidal., 2019). The role of the DMO to facilitate a network for all stakeholders is becoming more relevant in smart tourism as the concept requires a constant and dynamic interconnection between stakeholders through an ICT platform (Del Chiappa & Baggio, 2015). The operational activities of the DMO within the public-private sphere, its connection to stakeholder management, and its participation in destination policymaking have established the DMO as a distinct entity in the smart tourism destination, serving as the governing body of the system (Gretzel, 2022). The role of the DMO and their design and use of a DMS is pivotal in coordinating various actors and ICT applications, such as big data analytic and context-aware systems among others, in the destination to support knowledge management and the co-creation process in the smart tourism concept (Ivars-Baidal et al., 2019).

Collaboration among local destination stakeholders, facilitated by the DMS, aims to enhance the traditional marketing function of the DMS. Several authors contend that DMS-facilitated collaboration aims to involve community in creating a cohesive tourism product and marketing information about the destination (Estêvão et al., 2020a, 2020b; Le et al., 2022; Martins et al., 2021; Zehrer et al., 2005). However, some of the proposals on the collaborative functions of the DMS narrowly define destination stakeholders as tourism businesses and the destination authority and disregard the role of other stakeholder groups, at least as actors in the tourism system. In their study, Estêvão et al. (2020a) suggest that the DMS should facilitate collaboration between the stakeholders (i.e., tourism businesses) to create cohesive products, but the DMOs often exclude many of tourism actors involve in the value chain of the destinations. This suggestion contradicts the S-D logic framing of a destination as a complex ecosystem, where all the tourism actors, including residents, are involved in the value co-creation of the destination. Furthermore, the earlier discussion on the community mutual interrelationship with tourism highlights the significance of community involvement, not only to provide the community access to tourism benefits but also to have community support for tourism activities.

When considering the DMO's management role, it is necessary to bridge the gap between the DMO's role as an operator of the DMS, and the DMS as the primary ICT platform. The DMO's expanded destination management role may be supported by DMS functionalities. Therefore, to close the gap between DMO and DMS functions, a strategic evaluation of the application of DMS functionalities is required (Gössling, 2021). By examining how various DMS functions can support community participation in tourism development, this doctoral research offers a strategic evaluation of the DMS regarding its role in stakeholder management, specifically in promoting community participation.

As noted earlier, reference to community in this current research consists of residents in the host community and local tourism business owners, which include SME's and informal businesses. While much of the literature discusses DMS functions available to local businesses, particularly SMTEs (Benckendorff et al., 2019; Estêvão et al., 2014; 2020a; 2020b; Le et al., 2021; Martins et al., 2021; Sourak et al., 2015; Zainal Abidin et al., 2023; Zehrer et al., 2005), informal tourism businesses, such as homestay owners, pedicab riders and street food vendors, are rarely addressed. These informal businesses are an integral part of the destination value chain, especially in tourism destinations within developing countries.

*Tourism supply* is a term often used to describe the offerings of a destination that are marketed through a DMS. The term *tourism supply* can have multiple interpretations. For example, it can represent any businesses related to the tourism activities in the destination, or by extension, to the residents in the tourism area who, due to their role in creating "experience value" for tourists, can also be seen as part of tourism production (Basile et al., 2021). However, there is a paucity of discussions in extant literature about DMSs and the need to incorporate community dimensions in their functionalities. Only a small number of DMS related studies mention the need for DMS to provide services to host populations, i.e., to destination communities. Sigala's (2014) work views the DMS as an IOIS that should provide services for the totality of tourism stakeholders, including the local community, at least in fulfilling the information needs of both tourists and local stakeholders. Trunfio and Della Lucia (2019) assessed how Italy's regional DMOs engage with destination stakeholders in the digital era and found that some of the DMOs engage with the destination stakeholders, both offline and online, using destination websites. Trunfio and Della Lucia also suggest incorporating the framework of e-democracy into the function of the DMS to accommodate the stakeholder engagement function. Trunfio and Della Lucia classified three types of destination websites that can be accommodated by the DMS to facilitate different levels of local community participation:

- Level 1 – E-information

The website provides information about various issues of tourism development in the destination.

- Level 2 – E-commerce

The website provides essential tourism development information and e-commerce space and functionality for a range of tourism products in the destination.

- Level 3 – E-participative

The website allows the community to participate actively in destination value co-creation by allowing live polling and communication.

However, this framework focuses on simply measuring the level of community participation based on the functionalities provided by the website. The framework does not consider how these functions affect community decisions to participate in tourism, and it is unclear whether these functions will encourage community members to participate in tourism development. There remains a need to understand the factors that can encourage local community engagement with the functions provided in the DMS to support participatory practices. While this PhD research is not focusing on community perceptions of DMS functions, it is exploring the DMS functions that have the capability to foster a situation that can encourage community to engage in tourism development.

Integrating a community participatory framework within DMS functions is needed to enhance local support for tourism development and make tourism benefits more accessible to the community. Inspired by Pinch and Bijkers's (1987) SCOT theory, the creation of technological artefacts can be inspired by sociological needs. The application of SCOT theory to DMSs suggests that the future development of DMS platforms is likely to be influenced by the needs and requirements of social entities, who act as adopters of the technological artefacts. In the context of DMSs, this is particularly relevant to the need for effective destination management, with a strong emphasis on fostering community engagement. The SCOT theory is explained extensively as the theoretical framework of this research in section 2.5.

This current research explores how DMSs can evolve to accommodate the prerequisites for community involvement in tourism development to promote community participation. While, as explained in the discussion above, technology is a mere catalyst for innovation in tourism (Trunfio & Campana, 2019), providing a smart solution for tourism issues requires social elements like leadership, social capital and human capital (Boes et al., 2016). The DMS should always be seen as one of many tools that help strategic destination management approaches initiated by the DMO, in which the outcomes are related to the other tools or tourism initiatives applied in the destination. As a result, the DMS and its features in the research's outcome will not be viewed as the only way to address problems with community involvement, but rather as a component of those

solutions. Reflecting on Gössling's (2021) critique of ICT adoption in tourism, a scholarship-critical evaluation of ICT will be applied to the outcomes of this research. For a DMS to be a significant enabler, or supporter of the community participation, DMS evaluation requires a strong theoretical framework particularly related to the community participation process.

## **2.5. Theoretical and Analysis Framework**

This section outlines the theoretical frameworks underpinning this research. S-D Logic and SCOT establish the conceptual foundation for the study. In this doctoral research, S-D Logic serves as a framework that views tourism destinations as complex ecosystems of various tourism actors, a perspective crucial for understanding the evolving role of DMOs in destination management. Consequently, DMS must be adapted to reflect this ecosystem-oriented view of destinations.

Meanwhile, SCOT provides a foundation for reconfiguring the DMS architecture as a technological artefact, particularly in addressing the needs of tourism actors, including the local community, whose involvement was not fully considered during the early development of DMS. Finally, the MOA framework offers an analytical lens to assess the potential of DMS in supporting community participation within tourism practices.

### **2.5.1. S-D Logic framed Destination Ecosystem**

The underlying gap this research aims to address is the incongruence between DMS adoption in the literature and the management function of the DMO, particularly in its stakeholder management role, as outlined in section 2.4.5. The earlier discussion of DMOs highlighted that the transition of DMO responsibilities from solely marketing activities is driven by the growing demand for sustainable tourism management, which emphasises the effective use of resources and the well-being of the host community. The DMO functions identified in the literature include guiding, facilitating, mediating, and fostering collaboration among tourism stakeholders, all aimed at promoting the sustainability of the tourism system. These DMO functions are derived from the perspective of the destination as a complex ecosystem, which is underpinned by service-dominant (S-D) logic.

*Service-dominant logic* came from a marketing and economic study developed by Stephen Vargo and Robert Lusch in the 2000s. S-D logic was intended to provide a framework for marketing and economic thinking that was traditionally focused on tangible resources, output in the form of goods (firm-created value) and transactions, with an alternative focus that characterised a services industry (Vargo & Lusch, 2008). An S-D logic framework provides for marketing activities based on intangible, dynamic resources, inputs for co-created value, and relational economic and social processes

(Lusch & Vargo, 2006). S-D logic is relevant to tourism management because, unlike the manufacturing industry which has a product focus on tangible goods, the tourism industry seeks to provide intangible services that make up the visitor experience (Blazquez-Resino et al., 2015; Boes et al., 2016; Moliner-Tena et al., 2023). Tourism destinations are often referred to as an example of a service ecosystem due to the nature of their value co-creation across a wide range of services generated collaboratively by inter-firm networks (Boes et al., 2016; Moliner-Tena, 2023). In S-D logic, tourism experience value is always co-created between the value provider and the value beneficiaries, and is often focused on tourists (Boes et al., 2016). In this current research, the S-D logic framework is applied to address the community's role in the local tourism ecosystem, particularly in value co-production of the destination. S-D logic states that "all social and economic actors are resource integrators" (Vargo & Lusch, 2008, p.134), accepting social actors, such as destination residents, as value creators. S-D logic also posits that "all economies are service economies" (Vargo & Lusch, 2008, p.133), which see all industries as a service industry that offers specialised competence (unique knowledge and skill) to the co-production of value. This approach can be employed to highlight the role of informal businesses as essential actors within the destination ecosystem. From an ecosystem perspective, all tourism actors participating in the network by sharing resources to produce the value proposition aim to enhance both their own well-being and the overall well-being of the ecosystem in return (Vargo & Lusch, 2008).

S-D logic recognises institutions and institutional arrangements (logic) within the service ecosystem (Vargo & Lusch, 2016). *Institutions* refer to the rules, norms and beliefs that regulate actors' actions, while an *institutional arrangement* is the sum of interrelated institutions that are coherently assimilated to facilitate the coordination of activity in the service ecosystem (Moliner-Tena et al., 2023; Vargo & Lusch, 2016). Moliner-Tena et al. (2023) suggest that the DMO structure resembles a governance function that can coordinate institutional arrangements in the ecosystem. Moreover, institutional structures can take the form of formal and informal structures that direct and shape the value co-creation process of the ecosystem (Vargo & Lusch, 2016). The digital platform is one example of informal structures of institutional arrangements in S-D logic. In this research, the DMS is seen as an institutional arrangement structure formed by the DMO in a destination ecosystem. To do that, the DMS has to facilitate all actors in the value co-creation process in the destination ecosystem. However, analysis of extant literature of DMSs indicates that they provide very few functionalities for the host community to participate in tourism development. Thus, exploring how the DMS can facilitate community engagement in tourism will inform whether it can be classified as an institutional arrangement structure for the destination ecosystem.

## 2.5.2. Social Construction of Technology (SCOT) and Social Construction of Digital Technology (SCODT)

Current literature indicates that only a small number of DMSs facilitate community participation through their functionalities. There is a need to address the gap between the DMO role as a coordinator and facilitator of a local tourism system and the DMS functions as DMO's ICT platform, as discussed earlier in this chapter. The *social construction of technology* (SCOT) theory, introduced by Pinch and Bijker (1987), argues that: "It is people, not machines, that design, build and give meaning to technologies and ultimately decides which one to adopt and which ones to reject" (p.107). SCOT theory provides an alternative to the deterministic view in explaining technological interrelationships (van Baalen et al., 2016). In SCOT theory, technology is ambiguous; it is constantly developed and can be shaped and interpreted differently by the social groups involved (Prell, 2009). Relevant social groups can redefine technology artefacts to fit their needs. SCOT theory looks to reconstruct the alternative interpretations of the technology and connect them to the design of technological artefacts (Selwyn, 2012). SCOT theory suggests that technology development is not always linear; instead, artefact construction is a multi-directional process (Pinch & Bijkers, 1987). The redevelopment of technology artefacts in SCOT theory is a continuous process until it reaches the point of closure where alternative interpretations of technology diminish (Selwyn, 2012), or in other words, when technology artefacts cannot be altered based on materiality.

Although van Baalen et al. (2016) suggest that the SCOT theory is still relevant in the era of information technology, they have extended the theory to provide a framework for studying the further development of information technology, which they call a digital ecosystem, and so introduce a *social construction of digital technologies* (SCODT) theory. They argue that the SCOT theory focuses on integrating the interests of various stakeholders and social groups connected to the technology in revealing intersecting interpretations in designing digital ecosystems and system construction. Compared with the SCOT framework, SCODT focuses more on the narratives emerging from networked individuals (users) to redefine interaction between people and digital context. Put simply, SCOT is better used to explain the process of designing the information system tools, whereas SCODT focuses more on how the digital space derived from the technological tools is used. A typical example of the SCODT application is the use of social media for commercial exchanges. SCOT theory justifies exploring the definition of the DMS as a technological artefact and redefining it based on recent destination management needs, whereas SCODT theory explains the redefinition of the DMS based on the adoption of the system by the users. These two frameworks are used as an underlying theory in

explaining the needs of the technology artefact in DMS to support DMO management functions in facilitating community participation. Together, these two frameworks provide the theoretical foundation for understanding how the DMS, as a technological artefact, can support DMO management functions, particularly in facilitating community participation.

### **2.5.3. The MOA framework as means for community participation**

Community participation encompasses both local involvement in tourism planning and community access to tourism benefits. Initiatives designed to enhance community participation provide a means of empowerment by granting the community the authority to influence and determine their own well-being. Importantly, Tosun (1999) highlights three significant types of challenge to community participation in developing countries: practical, structural and cultural challenges. The DMS is seen to have the capabilities to facilitate participation and collaboration for tourism stakeholders, although few functions for the local community, particularly residents and informal businesses, have been found or discussed. This research aims to explore DMS functions that support community participation, particularly in the developing countries. Understanding the conditions (means) that enable the community to participate in tourism is essential to providing a framework for evaluating DMS functionalities. The MOA model (Hung et al., 2011) is used as an analytical framework to examine the antecedents of community participation provided by the DMS functionalities.

Hung et al. (2011) proposed a model to examine the “means” and “ends” of the community participation process. This PhD research uses the MOA framework and focuses on the means aspect of the model. Although examining the ends aspect of the MOA framework is significant to understanding the effectiveness of DMS functions in supporting the means for community participation, such a problem is beyond the scope of this research. Moreover, only a few DMSs have been documented that focus on supporting community participation, resulting in a scarcity of case studies. By concentrating on the means aspect of community participation, the discussion in this research can be expanded to enhance the relevance of MOA framework to DMS applications. Thus, the ‘end’ (level of community participation) elements of community participation process resulting from a DMS that prioritises community needs is identified as an important area for further research.

According to Hung et al. (2011), the MOA framework helps identify the antecedents for community participation. Hung et al. argue that motivation, opportunity and ability allow the community to participate in tourism. The MOA framework was adapted from MacInnis and Jaworsky’s (1989) brand information processing framework. According to MacInnis and Jaworsky, the process of brand information starts with “antecedents” and finishes

with “consequences”; the antecedents in MacInnis and Jaworsky’s framework are illustrated by motivation, opportunity and ability in the MOA model. The MOA framework has been adopted in various studies across several disciplines (see, for example, Batra & Ray, 1986; Rostchild, 1999; Wiggins, 2004) before being adopted in the tourism literature. The MOA framework in this research context is illustrated as a pull factor that encourages community participation in tourism. Conceptually, pull factors are considered motivations that attract individuals to engage in an activity (Noorhayati et al., 2016; Rathinan & Selamat, 2017; Unguren et al., 2021; Wang & Zhang, 2019). While push and pull factors are commonly used concepts in tourism literature to explain tourists’ purchasing decision, Noorhayati et al. (2016) applied this concept to examine community willingness to participate in tourism. In this study, the MOA framework is positioned as a set of values that can attract communities to engage in tourism development.

Following the introduction of the MOA framework in tourism literature by Hung et al. (2011), the model has been used in several studies to assess the factors influencing community participation in tourism. For example, Jepson et al. (2013) applied the MOA framework to assess factors that drove local engagement in community festivals in Veszprem, Hungary and concluded that the MOA framework can be applied to understand the antecedents of local community participation in tourism events. Sakitri (2018) also used the MOA framework to examine influential factors that drive communities to participate in a local cultural event in Indonesia. Sakitri's (2018) research applied the MOA model to guide the analysis of community-focused interview data and found that a lack of confidence and ability to organise an event deterred communities from active participation in tourism. Rasoolimanesh, Jaafar, Ahmad et al. (2017) used the MOA framework to examine the factors that empower the local community close to George Town, a UNESCO World Heritage Site in Penang, Malaysia, to participate in the conservation programme and tourism development of the site. The researchers established that each element of the MOA model has different degrees of impact on community participation levels.

The first element of the MOA framework is motivation. In the context of community participation, motivation is related to factors that encourage a community to participate in tourism development and is mainly associated with whether the residents believe that tourism is beneficial for their community (Hung et al., 2011). Motivations for a community to participate in tourism can be both extrinsic and intrinsic. An example of an extrinsic motivation is when residents see improved public infrastructure brought about by tourism, and hence improved lifestyles (Benedjma & Mahimoud, 2021), whereas residents’ attachment to the local environment is an example of an intrinsic motivation as is a desire to have tourist providers recognise their local culture (Bettiga et al., 2018; Benedjma & Mahmoud, 2021). Hence, motivational factors to explore include perceived

benefits from tourism, economic impacts of tourism, quality of life of residents, residents' attachment to the local environment and tourism's recognition of local culture. This current research explores how a DMS can convey the factors underpinned by the motivations dimension of the MOA framework.

The second element of the MOA framework is opportunity. Communities might want to participate in the development of tourism in their local area but are constrained from doing so through lack of opportunity to engage with tourism planners and destination authorities such as DMO. The solution, therefore, must be to seek ways that facilitate an individuals' engagement with tourism (Bettiga et al., 2018; Jepson et al., 2013). Such facilitation can be manifested in a variety of different forms; for example, by providing a communication channel for the local community to participate in the decision-making process, or through economic incentives such as financial support to reduce the cost of participation in conservation initiatives (Benedjma & Mahimoud, 2021; Latip et al., 2018; Sakitri, 2018). Therefore, this current research sees the DMS as a tool that can contribute to providing a solution to the practical challenge of community engagement with local tourism development. In this context, the medium that facilitates community participation is provided through DMS features.

The third element of the MOA model is ability. Ability refers to individuals' resources and capacities, which enable community members to participate in tourism (Bettiga et al., 2017; Benedjma & Mahimoud, 2021). Ability comprises complex factors that build community competencies to participate in tourism development; for example, awareness of tourism initiatives, the knowledge and skills of individual community members, and financial resources (Jepson et al., 2013; Latip et al., 2018). In this current research, the ability factors for community participation in tourism within and outside the digital ecosystem are those provided by the DMS via its content. Incorporating the MOA framework in the DMS functionalities will potentially create an environment that attracts local communities to proactively participate in tourism and that will eventually bring the benefits of tourism closer to the community. Thus, incorporating the MOA framework in the design of DMS functionalities has the potential to foster community participation.

The MOA framework has been widely employed in tourism studies to examine the means through which communities engage in tourism development (Hung et al., 2011; Jepson et al., 2013; Jepson et al., 2014; Rasoolimanesh et al., 2017; Sakitri, 2018). In much of this literature, the framework has primarily served a descriptive function, enabling researchers to interpret the factors that support participation. However, community participation in tourism is a dynamic process, shaped not only by enabling conditions but also by evolving challenges and constraints, often conceptualised as barriers to participation (Tosun, 2000). Consequently, the presence of MOA factors alone does not

guarantee participation. Instead, these factors may be better understood as the pull factors that encourage participation, while barriers represent the opposing constraints that restrict it. This dynamic and sometimes conflicting interaction suggests that the MOA framework and the barriers to participation should not be viewed solely as descriptive tools for understanding participation. Rather, they also hold prescriptive potential, providing a basis for identifying practical strategies to facilitate and strengthen community engagement in tourism development.

## **2.6. Summary**

Sustainable tourism must support the three pillars (environmental, social and economic) of sustainable development. Sustainable tourism practice is a continuous process involving innovation with advanced technology support, including ICT. One prominent and enabling sustainable tourism practice is community participation. If correctly implemented, community participation can create a mutually beneficial relationship among tourism stakeholders, including between the local community and tourists. In this research, the destination community comprises destination residents and local tourism businesses, including informal businesses. The community participation concept adopted in this research refers to active participation, whereby participation by the local community is self-initiated and the community is empowered to determine their aspirations for well-being. The discussion on community participation in the literature suggests that participatory practices face many challenges, particularly in developing countries, as the concept was brought from a Western country where infrastructure and social structures support the concept. Tosun (2000) classified the participatory challenges in developing countries as practical, cultural and structural limitations. Much empirical research suggests that participatory challenges still exist. However, very few studies have offered a solution. Tosun (2000) suggested that innovation in participation practice, including by adopting ICT, can provide an alternative solution to the participation challenges found in developing countries.

The DMS encapsulates a DMO's ICT platform. This research adopts the broader definition of a DMS, which refers to an ICT application that represents a tourism destination and that is operated by the managing organisation of the destination and focuses on providing various tourism-related information. A DMS is constructed of information, communication, relationships, transaction and technological functionalities (Benckendorff et al., 2019). As a DMO's main ICT platform, the DMS must support the DMO's role as a managing body of a tourism destination. This aligns to the notion of the destination as a complex ecosystem framed by S-D logic; the DMO role is related to leading, facilitating, mediating and coordinating tourism actors' collaboration to ensure tourism systems work sustainably. The literature suggests there is a gap between DMO

roles and the DMS functions, both conceptually and in practice. Most DMS functions focus on the marketing aspect of DMO responsibilities while overlooking other functions like stakeholder management (Zainal-Abidin et al., 2023), including supporting the community participation process. This current research attempts to address the issue of disparity between DMO roles particularly in stakeholder management and DMS functions. Therefore, this research aims to explore how the DMS can support community participation, particularly in developing countries such as Indonesia. The overview of Indonesia and its tourism development is explained in the next chapter to provide context of the case study.

In this research, the DMS is conceptualised as an ICT platform that supports community participation practices by providing functions that encourage community engagement in tourism. Building on Hung et al.'s (2011) concept of means and ends of participation, this research focuses on examining the role of the DMS in facilitating the means for community participation. Although DMS functions are not primarily designed with community participation in mind, the SCOT theory (Pinch & Bijker, 1987) suggests that technological artefacts, including ICT systems like a DMS, can be redefined to meet stakeholder needs. According to Hung et al.'s (2011) MOA framework, motivation, opportunity and ability are the precursors to community participation. Therefore, for a DMS to effectively contribute to community participation, it must leverage its functionalities to support and facilitate the MOA model.

## Chapter 3. Research Methodology

This chapter outlines the research design employed in the study, detailing the philosophical framework and methodology that underpin the overall research approach. It further elaborates on the research design, the specific methods used, and the rationale for selecting these methods. Additionally, the chapter justifies the choice of a case study approach focused on Indonesia and addresses the challenges, limitations and ethical considerations involved in the methods employed. The chapter concludes with a reflection on the positioning of the researcher towards this doctoral research.

### 3.1. Research Framework

The research framework explains the philosophical approach, methodology and the methods applied in this research.

#### 3.1.1. Research Paradigm

A paradigmatic approach is essential to guide an inquiry and respond to the research question: “How can the DMS support the implementation of community participation in tourism development in Indonesia?” A *research paradigm* refers to a set of beliefs that shape the researcher’s worldview and guide the selection of methodologies and methods used to address the inquiry, i.e., the research question (Jennings, 2010; Kaushik & Walsh, 2019; Morgan, 2007). In the social sciences, positivism and interpretivism have traditionally been regarded as dominant paradigms (Jennings, 2010; Morgan, 2007; Pansiri, 2006). The legitimacy of both paradigms has been the subject of ongoing debate within the social science community, but the merits of each are widely acknowledged (Baškarada & Koronios, 2018; Bryman, 2006). Pragmatism offers a perspective that advocates the use of both positivism and interpretivism approaches and value to address research problems (Bryman, 2006; Foster, 2024). The overarching principle of the *pragmatic paradigm* is that all methods have value, and the specific circumstances of the inquiry determine the most suitable approach (Foster, 2024). Pragmatism thus allows researchers to employ a variety of methods to navigate structural challenges, including addressing research questions and overcoming practical limitations during the inquiry process (Foster, 2024; Kaushik & Walsh, 2019). This research adopts the pragmatism paradigm to optimise its ability to address the main research question. The following discussion elaborates on the application of the pragmatic approach in this study and its relevance to the inquiry.

Every research paradigm encompasses ontological, epistemological and axiological perspectives to facilitate an understanding of the complex nature of the real world. Pragmatism, however, is not rigidly tied to the traditional ontological, epistemological and

axiological frameworks that underpin the interpretivist and positivist worldviews. If these views are to be clearly defined, this PhD research adopts Dewey's perspective on pragmatism. Dewey emphasises "experience" as a central concept in the inquiry of knowledge (Dixon, 2019; Kono, 2018; Tukiran et al., 2019). According to Dewey's definition, reality is viewed as the relationship between humans and the world, where the world accessible to the inquirer is shaped by their experiences (Kono, 2018). In this research, Dewey's conception of reality is interpreted as fluid, where both subjective and objective approaches to knowledge are acceptable if they align with the functional conditions of the inquiry. Kono's (2018) reflection on Dewey's ontology, adopted in this study, suggests that the pragmatic view of reality influences the formulation of the research problem and the selection of methods, based on practical limitations and the values guiding the inquiry.

The first crucial step in a pragmatic approach to inquiry is to clearly articulate the problematic situation; that is, the research question (Foster, 2024). This research was motivated by the researcher's prior observations of various tourism ICT platforms, such as destination websites, particularly in Indonesia, which predominantly focus on meeting visitor needs. As the researcher, I find this focus problematic, as both my observations and a review of the literature indicate that ICT holds significant potential to support sustainable tourism practices, particularly by enhancing community participation (Ali, 2022; Benckendorff et al., 2019; Gössling, 2021; Zainal-Abidin et al., 2023). Limited community participation in Indonesian tourism has contributed to various social issues within tourism development. Repositioning ICT adoption to strengthen community engagement could provide a viable solution for marginalised communities in tourism destinations across Indonesia. Several authors, as highlighted in the literature review, emphasise that DMS functions should include fostering collaboration among local stakeholders (Estêvão et al., 2020a, 2020b; Le et al., 2021; Martins et al., 2021; Zehrer et al., 2005). Therefore, a DMS should not merely cater to visitors but also address the needs of local stakeholders, particularly the community. Currently, DMS functions that encourage the host community to participate in local tourism development remain limited. This study looks to provide an alternative way in which the DMS can support community participation. Thus, the formulation of aims of the study and the research question aligns with a pragmatic approach, drawing upon the researcher's accumulated prior knowledge and practical observations.

The epistemological approach of this research adopts Dewey's theory of inquiry (Kaushik & Walsh, 2019). Dewey's theory suggests that the "known", or the outcome of the inquiry, is considered "satisfactory" or "appropriate" when it aligns with clearly defined research objectives and results from the continuous operational interaction of facts (Dixon, 2019).

Consequently, this research adheres to the belief that knowledge can be acquired through a rigorous and structured process. In this view, the actions taken to acquire knowledge consider the consequences of the methods employed. Thus, this research places significant value on the selection of methodological tools to answer the research question, while also acknowledging the practical challenges inherent in the research context. The rationale for each method used, as well as their contribution to navigating practical challenges such as the COVID-19 pandemic, is discussed in the subsequent sections on research design.

As a research paradigm, the axiology of pragmatism focuses on solving practical problems in the real world and is regarded as a method of inquiry for the practical-minded researcher (Kaushik & Walsh, 2019). Kono's (2018) reflection on the pragmatic approach highlights that the aim of the pragmatic researcher should not only be to focus on answering simple research questions but they should also be constantly searching for a solution and future actions needed to address a problematic situation. In line with this point of view, the PhD research does not merely seek to answer whether a DMS has the capability to support the process of community participation but also aims to explore how this can be achieved. The outcomes of this research are intended to propose an alternative approach for the DMS to enhance community engagement in tourism development, ultimately contributing to the progress of sustainable tourism.

### **3.1.2. Research Methodology**

The epistemological perspective adopted in this research recognises the importance of selecting methodologies and methods that effectively address the research questions and objectives. Consequently, this research focuses on solving problematic situations using the most suitable methodologies and methods for providing answers to these issues. The pragmatism paradigm is often associated with *mixed methods research*, which integrates both quantitative and qualitative data within a single study. However, pragmatism is not limited to mixed methods; it is compatible with purely qualitative or quantitative research approaches if they adequately address the research questions (Borges & Revez, 2019; Foster, 2024).

The methodology adopted in this research can be classified as a mixed method approach based on the variety of methods, traditions and the sequence applied throughout the project. Mixed method research is commonly defined as the integration of both quantitative and qualitative traditions, including the corresponding methods, analytical techniques and software tools (Truong et al., 2020). Although this research uses predominantly inductive methods such as thematic and content analysis, which are primarily associated with qualitative approaches, it also incorporates quantitative traditions, particularly through the use of descriptive statistical analysis within the Delphi

method. The research was conducted in distinct sequences, which will be detailed in section 3.2. Given the integration of both quantitative and qualitative methodologies and the structured sequence of analysis, the methodology employed in this study aligns with the criteria for a *sequential mixed methods approach* (Creswell, 2014; Truong et al., 2020).

The relatively *inductive approach* adopted in this research offers flexibility and open-ended exploration in addressing the research objectives. The *qualitative approach*, which is closely linked to the inductive process, allows the researcher to explore the data flexibly and uncover insights that may have been previously overlooked. This approach is particularly valuable for examining the adoption of a DMS in relation to community participation, a topic that has received limited attention in existing literature. By using qualitative methods to understand the *functions* of the DMS, this research aims to reveal the potential value of these functions for the community. DMS *functions* refer to the content and features applied in the DMS utilising the functionalities of the system across information, communication, relationship, transaction and technological elements. Moreover, as the DMS is considered an open concept, the terminology used by experts and practitioners, who serve as participants in this study, may vary. Therefore, the subjective and informed perspective of the researcher is essential in interpreting and decrypting the meanings emerging from interviews and open-ended survey responses. In contrast, the *quantitative approach* is employed in this research to determine consensual answers (as explained in section 3.2.4), supporting a more structured understanding of the data. A detailed explanation of the methods used in this research is outlined in section 3.2.

### **3.1.3. The Case Study Approach**

This research adopted a case study approach, focusing on regional and local DMSs in Indonesia. A *case study* is an empirical investigation of a phenomenon within certain geographical boundaries and time constraints (Jennings, 2010; Veal, 2018). Some commentators argue that the boundaries of phenomenon and context are not usually plainly evident (Yin, 2009). In other words, in a case study, the inquiry is not only about the product of the investigation but also about a specific occurrence (Stake, 2006). The researcher must experience the activities within the context related to the research aim. In this research context, the case study is not only framed by geographical elements but also a digital environment in DMS. Thus, the DMS is the unit of analysis in this research.

One of the most heavily discussed disadvantages associated with applying a case study method is the fact that each case is framed by the specific context being examined and provides little ability for generalisation (Creswell, 2014; Stake, 2006). However, an intensive investigation of one or more cases may shed light on the phenomenon in a

larger population (Veal, 2018). Case-based findings can modify general knowledge, which leads to “modified generalisation”. Research findings from a specific study case can be applied in another related case if they share similar contexts or adopt the same theory or policy that is the focus of the research (Veal, 2018). From a different perspective, a case study approach also provides a specific context for the researcher to have a deeper insight into interpreting the phenomenon being examined, which will enrich the findings of an inquiry. There are also different perspectives on the outcome of the inquiry in the studies where generalisation of the outcome is not the aim, and a deeper understanding of the specific phenomenon is expected, which is the case for this study.

The focus of this doctoral research is to examine destination management systems (DMSs) hosted by tourism destination management organisations (DMOs) within Indonesia. Specifically, this research investigation draws on examples from Wakatobi Regency and Banyuwangi Regency. Despite Indonesia’s vast geography, only a few of Indonesia regencies have developed a stand-alone destination website separated from the government services website. Therefore, Wakatobi and Banyuwangi were selected because of their advance destination website, which also exemplify the characteristics of DMS. The selection of these examples is integral to the research design, considering the website evaluation results, and the recommendations provided by the Delphi panel. While these destinations provide the geographical settings for the study, the boundaries of the subject, the DMS, are not confined to geographic considerations alone. As noted by Hancock and Algozzine (2017, p. 15), a “case” in case study research can refer to programmes, events, individuals, processes, institutions, social groups or other contemporary settings. In this research, Indonesia is set as the geographical context, while the DMSs of Wakatobi and Banyuwangi and their functions form the central focus of investigation. Therefore, the main units of analysis of this research are the DMSs of Wakatobi Regency and Banyuwangi Regency.

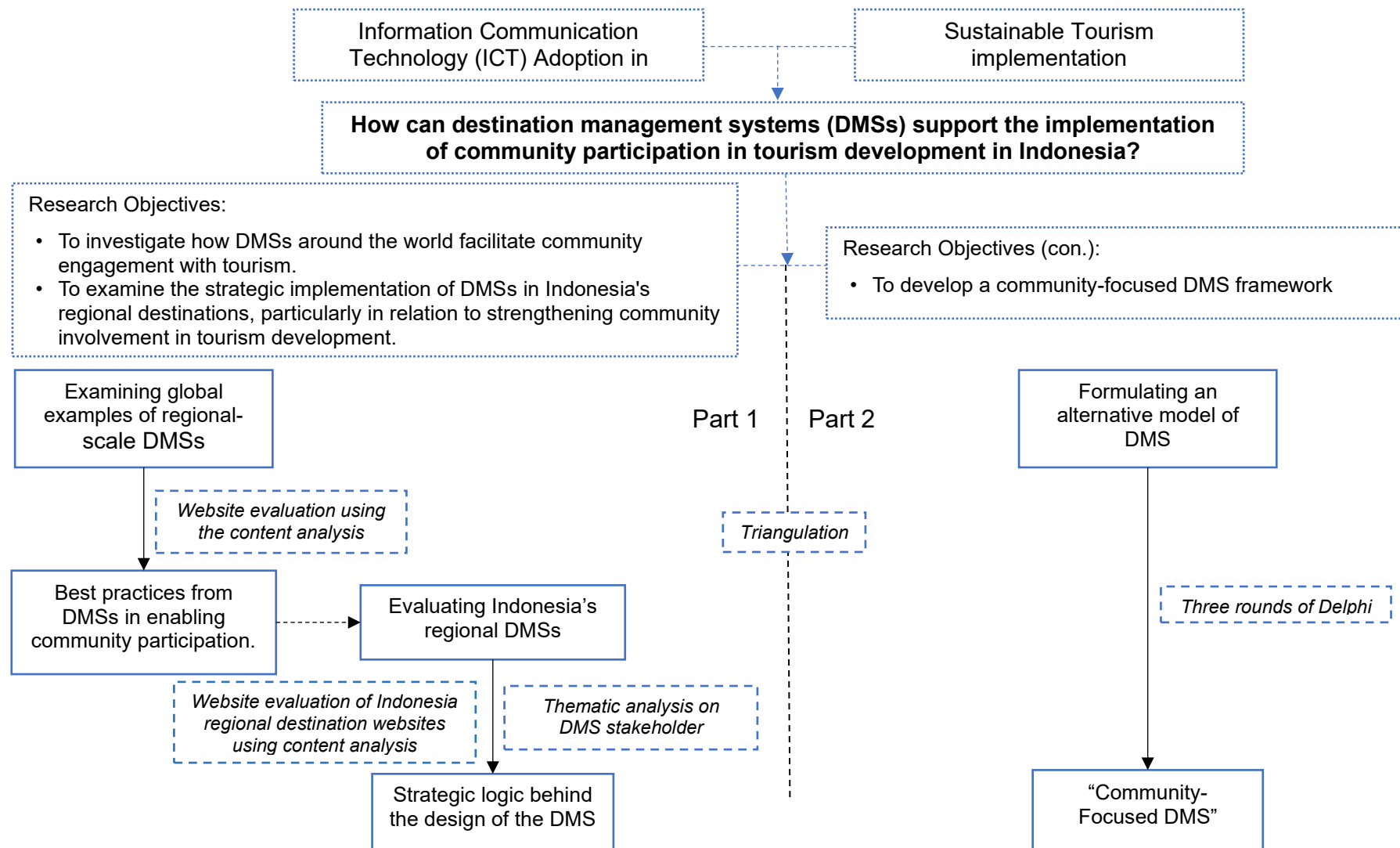
### **3.2. The Research Design**

The aim of this research is to explore how a DMS can effectively support host community engagement in tourism development, with a focus on Indonesia as a case study. To achieve this objective, the study is structured into two distinct components. The first part examines whether DMSs, particularly within the Indonesian context, are optimised to support community participation in tourism. This involves assessing the capabilities of existing DMS platforms and understanding the strategic rationale behind the integration of community-focused functions. The second component is dedicated to the development of a framework for DMS adoption tailored to Indonesian regional

destination management bodies. This framework is designed to support community engagement by incorporating functions that can facilitate local involvement in tourism.

The first part of this research comprises of three phases: a systematic evaluation of 52 DMS websites, encompassing national, sub-national, and regional destinations. The outcome of this process was the identification of DMS functions with the potential to support community participation. In the second phase, Indonesian regional DMSs were evaluated based on the occurrence of these functions, while also examining their operations and functionalities to provide an overview of current practices. This phase was followed by in-depth interviews with ten stakeholders engaged in the management and operation of DMSs within the Wakatobi and Banyuwangi regions. The website evaluation seeks to identify DMS functions that facilitate community participation, while the interviews aim to assess the strategic adoption of DMSs in Indonesia regional destinations, particularly regarding their capability to foster community engagement in regional tourism development.

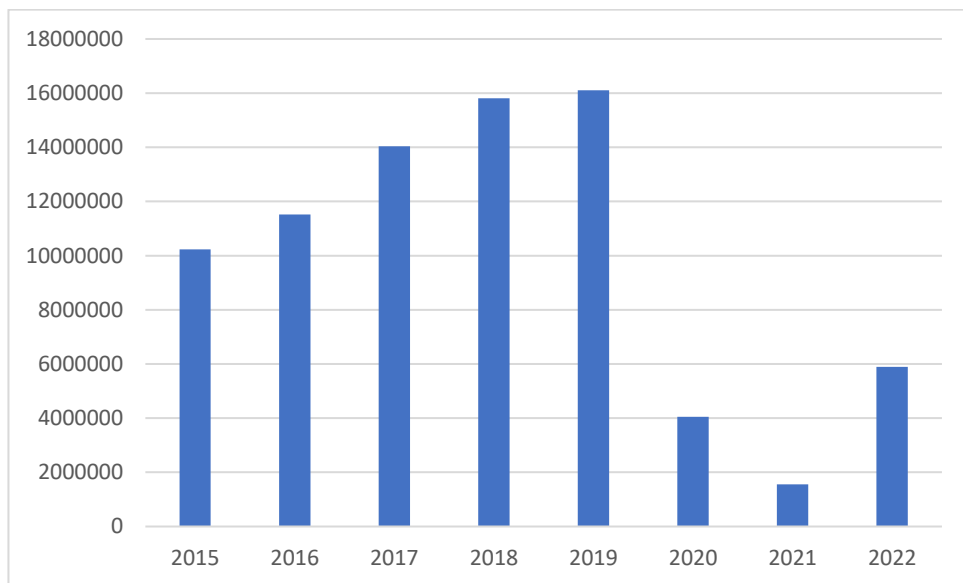
The second part of the research employs the Delphi method to develop a framework for a community-focused DMS within the Indonesian context. This method involves three iterative rounds with 14 participants to refine and validate the framework. Both components of the research were conducted concurrently and are integrated through triangulation to address the three research objectives. Specifically, the triangulation focused on aligning findings from the qualitative website evaluations with insights gained from the Delphi study regarding DMS functions that support community participation in tourism development. An overview of the research process, including the methods employed and their respective outcomes, is depicted in Figure 3.1, which provides a flowchart illustrating the study's methodology and expected results at each stage.



**Figure 3.1. Overview of The Research Design**

### 3.2.1. The Study Case Overview: Indonesia Tourism Outlook

In the five years prior to the COVID-19 pandemic period (2015–2019), the development of tourism has shown encouraging growth and has become one of the prominent sectors driving economic development in Indonesia. During this period, there was a steady improvement in international tourist arrivals and tourism’s contribution to the nation’s gross domestic product (GDP). Between 2015 and 2019, Indonesia recorded an 11.5% average annual growth in international tourist arrivals and the number of foreign tourist arrivals reached 16.11 million in 2019 (BPS–Statistics Indonesia, 2023). In terms of economic contributions, the Indonesian tourism sector contributed 4.8% of overall GDP in 2019, 0.3% higher than the previous year. Figure 3.2 illustrates the trends in international visitor arrivals to Indonesia from 2015 to 2022.



**Figure 3.2. International Tourism Arrivals to Indonesia 2015–2022**

Source: BPS–Statistics Indonesia, 2023.

Although international tourist arrivals to Indonesia saw constant growth until 2019, the number was still short of the target of 20 million international inbound tourists set by the national government for 2019 in the national tourism strategic plan (2015–2019). Due to global disruptions in travel due to COVID-19 it is extremely unlikely that the 2020–2024 target of 26 million international visitors will be achieved (Ministry of National Development and Planning of Indonesia, 2019). Foreign arrivals dropped significantly during the pandemic period due to the travel restriction to Indonesia from April 2020 and worsened when all foreign travel into Indonesia was banned in January 2021 (DetikNews, 2020). Foreign arrivals dropped to four million in 2020 as an impact of the global pandemic and further reduced by 62% in 2021, with only 1.5 million tourists (BPS–Statistics Indonesia, 2023). However, once international travel restrictions to Indonesia were lifted in 2022, the number of tourist arrivals surged to 5.47 million by the end of the

year (BPS–Statistics Indonesia, 2023; ET Travel World, 2023). The number of tourist arrivals in 2022 is more than three times higher than the previous year, which is a sign that the tourism industry in Indonesia is slowly recovering after the global pandemic.

Currently, tourism development in Indonesia is guided by the National Tourism Development Masterplan 2010–2025 (Indonesia Law No. 50/2011). This long-term plan emphasises the development of National Strategic Tourism Areas (KSPN). These are designated areas considered to make a significant contribution to national tourism development and/or possess notable natural and socio-cultural value for the surrounding region. The Masterplan formally identifies 87 National Strategic Tourism Areas, encompassing 119 cities and regencies across Indonesia. The full list of these areas, along with the respective cities and regencies included, is provided in appendix 18. These areas have been the primary focus of tourism development, with the national government providing incentives to regional governments for tourism-related infrastructure and facility development. However, since 2014, the national government has shifted its focus to the development of smaller key tourism areas, specifically the ten destinations branded as the “10 New Balis”.

The national government (2019–2024) has made tourism one of the key strategic sectors in its development plan (Ministry of National Development Planning, 2019). One of the projects in the development plan is to develop five “super priority destinations”. The Super Priority Destinations project is a follow-up programme to the 10 priority destinations development project, also known as the “10 New Balis” project, launched in 2016 (Menon & Kagda, 2020). The five destinations that were planned to be rapidly developed in the Super Priority Destinations project were Toba Lake in North Sumatera, Borobudur Temple in Central Java, Mandalika in West Nusa Tenggara, Labuan Bajo in East Nusa Tenggara, and Likupang in North Sulawesi (Ministry of Public Works and Housing of Indonesia, 2020). Unlike other regional or sub-regional destinations in Indonesia, the priority destinations are managed by entities directly established or appointed by the national government, operating under the supervision of the Ministry of Tourism and Creative Economy. In practice, however, this centralised approach has led to certain adverse effects, despite official claims of substantial infrastructure development within these areas. Nevertheless, under the newly appointed government as of October 2024, the priority destinations project is still set to proceed, albeit with revised targets.

The super priority destination development projects have pushed the government to build destinations aggressively. Despite good intentions, such rapid tourism development in Indonesia has negatively impacted some destinations. The heavy tourism infrastructure construction in the Komodo, Rinca and Padar islands has caused local ecosystem

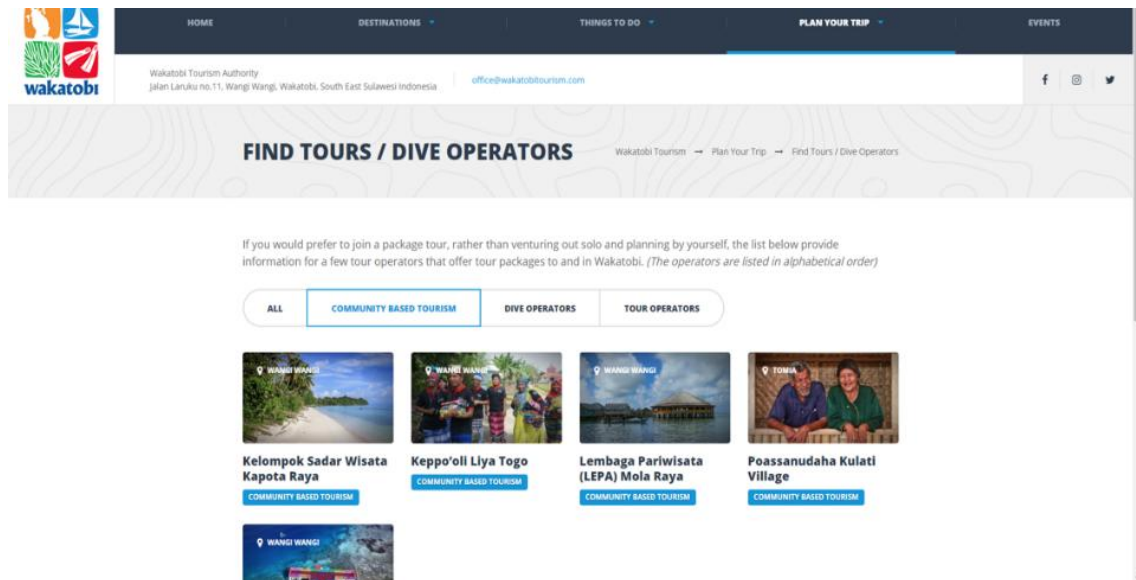
degradation, including a threat to the well-being of Komodo Dragons and the Indigenous people's livelihood (Ama, 2020; WALHI, 2022). In some areas, like Pede Beach, local community access to the beach as a public space is restricted as some hotels monopolise the space for their activities (Florespedia, 2019). A repressive and intimidating approach to Indigenous landowners has been reported in many tourism destination development projects authorised by the national government, such as in Manadlika (Reuters, 2021), Komodo Island (WALHI, 2022), and more recently, in Rempang Island (BBC NEWS Indonesia, 2023). These cases showcase the top-down, centralised approach to tourism development in Indonesia that has damaged environmental and community development in the destinations. In many cases of Indonesian tourism, local communities in the destinations have limited voice and power to influence local development, which will likely lead to poor access to tourism benefits. The effective use of ICT platforms in tourism can enhance the host community's ability to influence tourism development within the destination. Additionally, these tools can provide a platform (access) for the community to express their opinions, especially considering the level of internet engagement among the Indonesian population.

In addition to the destination development acceleration project, Indonesia's current government has established a National Medium-Term Development Plan (2019–2024) that focuses on developing human resources and digital technology infrastructure (Ministry of National Development and Planning of Indonesia, 2019). The future development of tourism should, the government argues, therefore embrace the use of ICT and have a community development focus. One of its priority programmes is the creation of the community group in each regional destination in Indonesia known as GenPI (*Generasi Pariwisata Indonesia*) to promote their region using their Instagram posts. Indonesia was in the 59th position out of the 131st countries reviewed on the Network Readiness Index (NRI) in 2022 (Portulans Institute, 2022). NRI is the leading index on the application and impact of ICT in economic sectors globally. The NRI is measured using four variables: technology, people, governance and impact. The NRI illustrates the potential of community engagement with digital networks, which needs to be facilitated by developing ICT functions. In terms of the internet penetration rate in Indonesia, the "Datareportal" digital trends report, which was produced in partnership with Meltwater and We Are Social (an online media monitoring company and a digital creative company, respectively), reported that the number of internet users in Indonesia had reached 212.9 million by the start of 2023, equivalent to 77% of the total population (Kemp, 2023). The report also suggests that the number of cellular SIM cards purchased now exceeds the Indonesian population – the population of Indonesia was approximately 276 million in January 2023, but GSMA Intelligence (cited in Kemp, 2023) reported 353.8 million cellular mobile connections (that is, unique SIM cards) at the start of the same

year. The report also recorded 167 million people in Indonesia as having an active social media account (Kemp, 2023).

Currently, destination websites are one of the leading ICT tools used to represent tourism destinations in Indonesia (Subandi & Putra, 2018). There are 31 destination websites found in and around the regional administrative areas of the ten priority tourism destination projects alone (Subandi & Putra, 2018). The websites mainly function as platforms to house marketing media for regional tourism destinations. In Subandi and Putra's (2018) evaluation of websites of regional tourism destinations within the ten priority destinations project areas, the most common information found from the websites was information about the culture and history of the region, while none of the websites provided live communication functions. Subandi and Putra also describe most destination-related websites in Indonesia as being established as one-way promotional tools with limited emphasis on facilitating visitor interaction with the community. However, only a few websites in Indonesia focus on representing tourism destinations; most of them are government websites that focus on sharing information about government programmes, including tourism-related initiatives.

Most of the "official" (government authorised) websites, created for various regions of Indonesia, including those designated as tourism destination sites, primarily adhere to the stipulations outlined in the public information law (Indonesia Law no. 14/2008) and the public services law (Indonesia Law no. 25/2009). These legal frameworks guide the websites to concentrate on regulations pertinent to the dissemination of public information. Consequently, much of the tourism related content for these regions is integrated within government websites. There are, however, some tourism-focused websites in Indonesia that are separated from government service portals. One such example is the Wakatobi Region's tourism website ([www.WakatobiTourism.com](http://www.WakatobiTourism.com)), which focuses specifically on destination marketing and providing tourism-related information for visitors. Figure 3.3 illustrates a preview of one of the promotional pages available on this website, showcasing its role in engaging potential tourists by promoting key attractions and tourism services within the region.



**Figure 3.3. Tours and Dive Operators Page on the Wakatobi Tourism Destination Website**

Source: [www.wakatobitourism.com](http://www.wakatobitourism.com), 2020.

Another notable example of a destination website in Indonesia that offers visitor information is the Nias Island tourism website ([www.VisitNiasIsland.com](http://www.VisitNiasIsland.com)). Unlike the Wakatobi tourism website, which is operated by the local government, the Nias Island website is managed by the Nias Heritage Foundation, an NGO. In developing and managing the site, the foundation collaborated with various stakeholders to ensure that tourists receive reliable and accurate visitor information. Figure 3.4 provides an overview of the website, displaying one of its pages that outlines the profile and operational structure of VisitNiasIsland.com, highlighting its efforts to promote sustainable tourism and cultural preservation.



Nias Heritage Museum



Tureloto



Gomo region



Wunga Island

### Working together

The *Visit Nias Island* project have worked with many tourism stakeholders to gather the information on this website. Local governments on Nias have assisted the project in a number of different ways. Many people from the private sector have helped us with the information and images necessary to provide accurate information for visitors. Local people throughout Nias have welcomed us into their homes and taken time out of their lives to guide us where we otherwise would have been lost. A heartfelt [Thank You](#) to everyone who have helped the *Visit Nias Island* project along the way!

### You can help Nias!

Every traveller to Nias brings much needed revenue to the Island. Everything you buy and every service you use gives locals an incentive to be part of the tourism economy. Guest houses, restaurants and drivers can't survive without regular customers. But more importantly your stay here shows local people that Nias is a special place and something to be proud of.

Please share your experiences (good or bad) with us as we very much appreciate comments and suggestions from visitors to Nias. We also welcome input from local community and tourism stakeholders.

We are constantly looking for great Nias photos for our Social Media stream and contributions are most welcome. All published photos will be captioned courtesy of the photographer.



*Visit Nias Island is not a travel agency or a tour operator. The project does not handle bookings or payments. We are a non-for-profit project and as such do not receive payments for anything published on our website or social media.*

### NIAS ON INSTAGRAM

**Figure 3.4. About Us Page on the Visit Nias Island Destination Website**

Source: [www.visitniasisland.com](http://www.visitniasisland.com), 2020.

The examples illustrate the variability in the adoption of destination websites across Indonesia. Although marketing-oriented destination websites are present within the country, there remains a limited number of websites that are independent of government portals.

### 3.2.2. Part One: Website Evaluation (Phase One)

The first part of this research focused on finding relevant examples of DMSs that embody and embrace community-engagement dimensions. The website evaluation examines functions (content and features) of DMSs worldwide and how they might influence the local community to participate in tourism development. In this process, DMSs as the subject to be studied are identified from academic and non-academic sources and draws examples from developed and developing country settings. Some DMS examples also come from the Delphi study of this PhD research. The evaluation of the DMSs uses the content analysis method and is guided by the MOA framework to achieve its outcome.

This research employs *qualitative content analysis* (CA) to examine the content and features of evaluated destination websites. As a qualitative descriptive research method, CA is used to identify recurring themes in the data, focusing on textual and latent content (Vaismoradi et al., 2016; Veal, 2018). CA involves categorising and quantifying occurrences of themes within the data (Van Rheenen et al., 2017). While CA incorporates quantitative aspects, such as counting word frequencies, its primary function in this study is qualitative; that is, to analyse the subject context, and variations within the data to identify meaningful themes (Graneheim et al., 2017). This research prioritises understanding the value of DMS functions rather than their frequency of adoption; for example, a function adopted by only one DMS may still be valuable in facilitating community participation. Therefore, the qualitative type of CA provides better value for this research.

The application of CA in contemporary tourism studies is evident in website evaluations (Hall & Valentin, 2005; Kwon & Jeong, 2015; Sun et al., 2017). Hall and Valentin (2005) reviewed CA's application in tourism research, highlighting its use across various subjects including marketing, policies, conceptual issues and website evaluation, though often from a quantitative perspective. Most website evaluation studies employing CA involve categorising information subjectively based on predefined parameters (Kwon & Jeong, 2015). For instance, Schmidt et al. (2008) employed CA to analyse hotel website features in Spain and Brazil using combined criteria that have been introduced in previous research such as *evaluation by phases*, *evaluation by characteristic* and *evaluation by characteristic and effectiveness*, aligning with a deductive, quantitative approach. While most website evaluation studies use a deductive approach to CA, this research adopts an inductive approach. Given the limited literature on ICT-enabled community participation, categories are identified as they emerge through analysis. This research aims to identify a set of functions from the website evaluations to address the scarcity of literature on ICT-enabled community engagement and to develop relevant DMS evaluation criteria specifically in supporting community participation. Additionally, the application of the MOA framework to ICT tools, particularly websites, remains underexplored.

Based on the procedure, CA can be categorised into three approaches (Graneheim et al., 2017; Humble & Mozelius, 2022). According to Graneheim et al. (2017), the three types of CA approaches are the inductive approach, deductive approach and abductive approach; these three approaches are elaborated upon in Table 3.1. Although Humble and Mozelius (2022) agree with the concept that CA can have three different approaches, they disagree with Graneheim et al.'s (2017) labels. Instead, Humble and Mozelius (2022) provide a more systematic explanation of the three approaches: in conventional CA, the codes are derived during data analysis; in directed CA, the codes are defined

before and during data analysis; and in summative CA, the keywords used to categorise the data are identified prior to and during data analysis. Table 3.1 presents an overview of the three CA approaches. As explained in the previous paragraph, this research seeks to identify DMS functions as they emerge from the evaluation of the tourism destination websites. Therefore, it applies a conventional (inductive) CA approach.

**Table 3.1. Type of Content Analysis**

<b>Type of CA</b>	<b>Study starts with</b>	<b>Timing of defining code or keywords</b>	<b>Source of codes or keywords</b>
<b>Conventional CA or inductive CA</b>	Observation	Codes are defined during data analysis	Codes are derived from data
<b>Directed CA or deductive CA</b>	Theory	Codes are defined before and during data analysis	Codes are derived from theory or relevant research findings
<b>Summative CA or abductive CA</b>	Keywords	Keywords are identified before and during data analysis	Keywords are derived from the interests of the researchers or from a review of the literature

*Source:* Graneheim et al., 2017; Humble and Mozelius, 2022.

In the CA employed for evaluating the destination websites, the MOA framework is utilised to assess the DMS functions' capacity to support community participation. The website data, being more general and less specific to the research questions, differs from the interview data. The content and features of the websites are predetermined and not directly aligned with the specific questions regarding the facilitation of community engagement in tourism development. Thus, the MOA model serves as a framework to systematically interrogate the features of the websites within the CA procedure.

#### ***a. Data Generation and Collection***

The website evaluation encompassed 52 DMSs, representing a diverse array of tourism destinations across different geographical locations and administrative scales. The DMSs were selected using a non-probability sampling approach, considering several factors to include and exclude global websites to be evaluated. The inclusion factors include representation of DMSs from all global regions: The Americas, Asia, Europe, Africa, Australia and the Pacific. The sample also considered representation of both developed and developing countries to ensure a broad range of perspectives. The variation in geographical size and administrative contexts of the DMS was another crucial inclusion factor in the selection process. This approach ensures comprehensive

representation of various types of DMSs and destinations worldwide. The selection excluded generic websites, such as those built using template-based platforms (e.g., hotels.com), as these do not reflect destination-specific management functions. Based on this criterion, 52 websites were selected for evaluation. The evaluated DMSs were organised according to their administrative geography, with the full list of the 52 DMSs presented in Table 3.2. The evaluation categorised these DMSs into four administrative scales.

The DMSs referenced in this research were sourced from both academic and non-academic channels, including recommendations from blogs of global tourism development consultants such as SolimarInternational.com and destination website developers like WebCitz.com, accessed via the internet. Some of the evaluated DMSs were informed by the Delphi panel in the other part of this research. Appendix 17 contains the evaluated list of DMSs along with a corresponding URL for each. As identified by Benckendorff et al. (2019), the destination website serves as the front end of the DMS, acting as the primary access point to the DMS. The publicly accessible content and features available on these websites are directly relevant to this study. Observations were made of the destination website content and features, which are identified as “functions” in this research, with notes systematically recorded using Microsoft Notepad.

The *content* observed is the textual information that can be accessed on the landing page and the linked pages of the destination website, whereas the *features* that were observed are the ones that can be publicly accessed and used through the destination website, such as chat or booking features. To ensure that the observation process was organised and that the notes taken were structured, the observation was guided by the functionalities of the DMS as outlined by Benckendorff et al. (2019). Thus, instead of randomly observing the content of the website, the observations and the note taking was divided into information, communication, relationship, transaction and technology functionalities of the website. The notes and the website information were treated as the data to be analysed. Data generation from the website evaluations took place over six months (July 2021 to January 2022). The data analysis of the website evaluations commenced following the data collection process. An example of the notes of website evaluations, which were taken in the Microsoft Notepad, is presented in Appendix 5.

**Table 3.2. The Evaluated DMSs**

Administrative Level	Evaluated DMS Locations
<b>Country</b>	Bermuda Cook Islands Jordan Palau Singapore Timor Leste Yap
<b>Region / Province/ State</b>	Apulia, Italy Azores, Portugal Bonaire, Netherland British Columbia, Canada Bundaberg Region, Australia Durham County, the UK Jeju Island, Republic of Korea Luang Prabang, Laos Malacca, Malaysia Oregon, United States Penang, Malaysia Perak, Malaysia Sabah, Malaysia Saskatchewan, Canada Vipavska dolina, Slovenia Yogyakarta, Indonesia
<b>Sub-Region</b>	Atauro Island, East Timor Banyuwangi, Indonesia Corn Islands, Nicaragua El Hierro, Canary Island, Spain Great Barrier Island, New Zealand Ha Long Bay, Vietnam Koh Yao, Thailand Lička Plješivica, Croatia Nara Prefecture, Japan Raja Ampat, Indonesia Sahara, Marocco The Catlins, New Zealand Toraja, Indonesia Wakatobi, Indonesia
<b>Urban Area / Metropolitan Area</b>	Ann Arbor, USA Campbell River, Canada Dubai, UAE El Nido, Palawan, Philippines Erfurt, Germany Ferne, Canada. Glasgow, the UK Hanoi, Vietnam Hanoi, Vietnam Itacare City, Brazil Kyoto, Kansai, Japan Pietermaritzburg, South Africa Saranda, Albania Toronto, Canada Wheeling, USA

## ***b. Data Analysis***

Data analysis for the website evaluations used an *inductive CA* approach (Graneheim et al., 2017), or what is also referred to as conventional CA (Humble & Mozelius, 2022). This method was employed to systematically analyse data collected in the form of notes, while simultaneously referring to the destination websites as the primary source of information. The analysis was structured using the MOA model (Hung et al., 2011) as a guiding framework to interrogate the data. For example, the motivation dimension of the MOA model was employed to investigate which DMS functions might foster motivation among community members to participate in tourism development. The researcher observed website functions in light of this guiding question. This approach to CA is distinctly characterised by a subjective lens, aligning with the principles of inductive CA. The qualitative data analysis software NVivo was used to assist in organising the textual data, facilitating the identification of key themes that emerged from the content.

The application of the CA in the analysis of website evaluations follows the four stages described in Bengtsson (2016): decontextualisation, recontextualisation, categorisation and compilation. In this research, decontextualisation was achieved along with the data collection process by making notes of an information pattern and features in Microsoft Notepad. The pattern of information taken into a note is classified based on the similarity in the semantic meaning and can be treated as the initial coding. The data in the notes with its original reference were then interrogated with the MOA model to formulate the categories from the initial codes. The process of analysing the data in the note, along with its original sources on the website, while interrogating it with the MOA model can be classified as the contextualisation phase. The follow-up categorisation of the data to create sub-themes is considered the categorisation phase. The decontextualisation, recontextualisation, and categorisation processes were done iteratively in several repetitions to achieve accurate coding, which is also suggested in Bengtsson (2016). An example of the categorisation and decontextualisation phase, facilitated by NVivo, is provided in Appendix 6.

In the compilation phase, the themes were given a meaning that aligned with the motivation, opportunity and ability factors the MOA factors as the main “questions” for the data. The results obtained from the evaluation of each website reveal the themes present in the content related to that destination, which can serve as a means through which community can participate in tourism. The illustration of the findings and refining sub-themes process from the adopted CA, which was facilitated by Nvivo, is presented the Appendix 7.

### **3.2.3. Part One: Website evaluation of Indonesia regional destination website using content analysis (Phase Two)**

Following the evaluation of global destination websites, which analysed the capacity of DMS functions to facilitate community participation, a closer examination was conducted of how regional DMSs in Indonesia operate, particularly in relation to their ability to support community participation. This stage of the research aimed to explore how the potential functions of DMSs in Indonesian regional destinations are utilised in practice to facilitate community engagement. The examination of Indonesian regional DMSs comprised two phases: an evaluation of regional destination websites (Phase Two) and interviews with DMS stakeholders (Phase Three).

The evaluation process was conducted systematically using a content analysis approach, consistent with the global website evaluation. While the global evaluation employed an inductive content analysis, the Indonesian website evaluation utilised a more deductive approach. The content analysis focused on identifying the occurrence of DMS functions with the potential to facilitate community participation, as established in the global evaluation. Accordingly, the themes and categories derived from the earlier phase were used as evaluation criteria, in line with the principles of deductive content analysis (Graneheim et al., 2017; Humble & Mozelius, 2022).

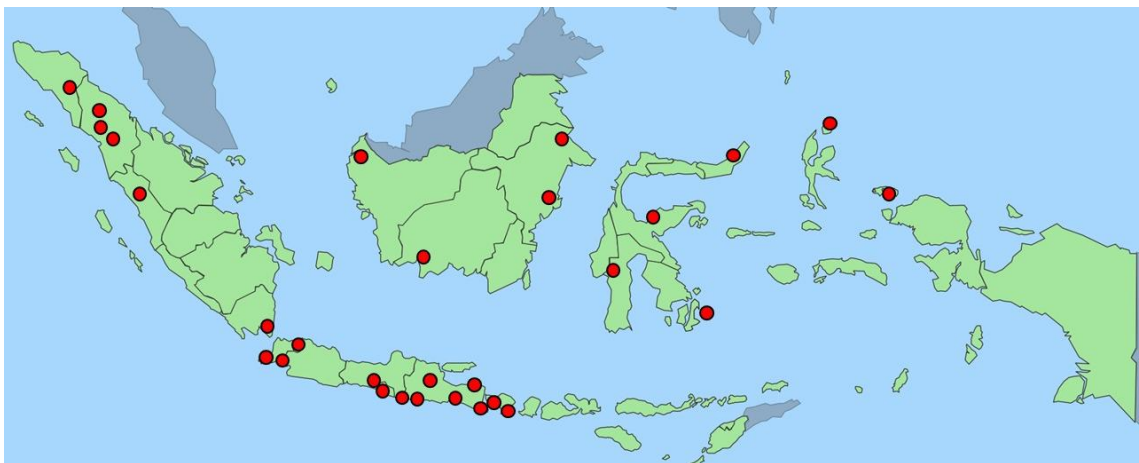
#### ***a. Data Generation and Collection***

This research identified 28 regional destination websites for evaluation in relation to their functional capacity to facilitate community participation. Indonesian regional destination websites were selected from regencies and cities designated as part of the National Strategic Tourism Areas, as outlined in the National Tourism Development Masterplan. As discussed in section 3.2.1, 119 regencies and cities are included in these National Strategic Tourism Areas. The websites affiliated with these 119 regions were systematically screened using predefined inclusion and exclusion criteria to obtain a representative sample of destination websites. It is important to note that some of these regions do not have a website related to government functions or tourism promotion.

Several criteria were applied to select Indonesian regional DMS websites for evaluation. The inclusion criteria focused on the nature of the tourism content: websites presenting the region as a tourism destination were included, while those primarily providing governance services, such as business permits or government activity updates, were excluded. The evaluated DMSs are independent ICT platforms that specifically manage and market the destination, detached from broader regional governance websites, such as the government services website for Banyuwangi Regency (<https://banyuwangikab.go.id/>). While the government website may include tourism-

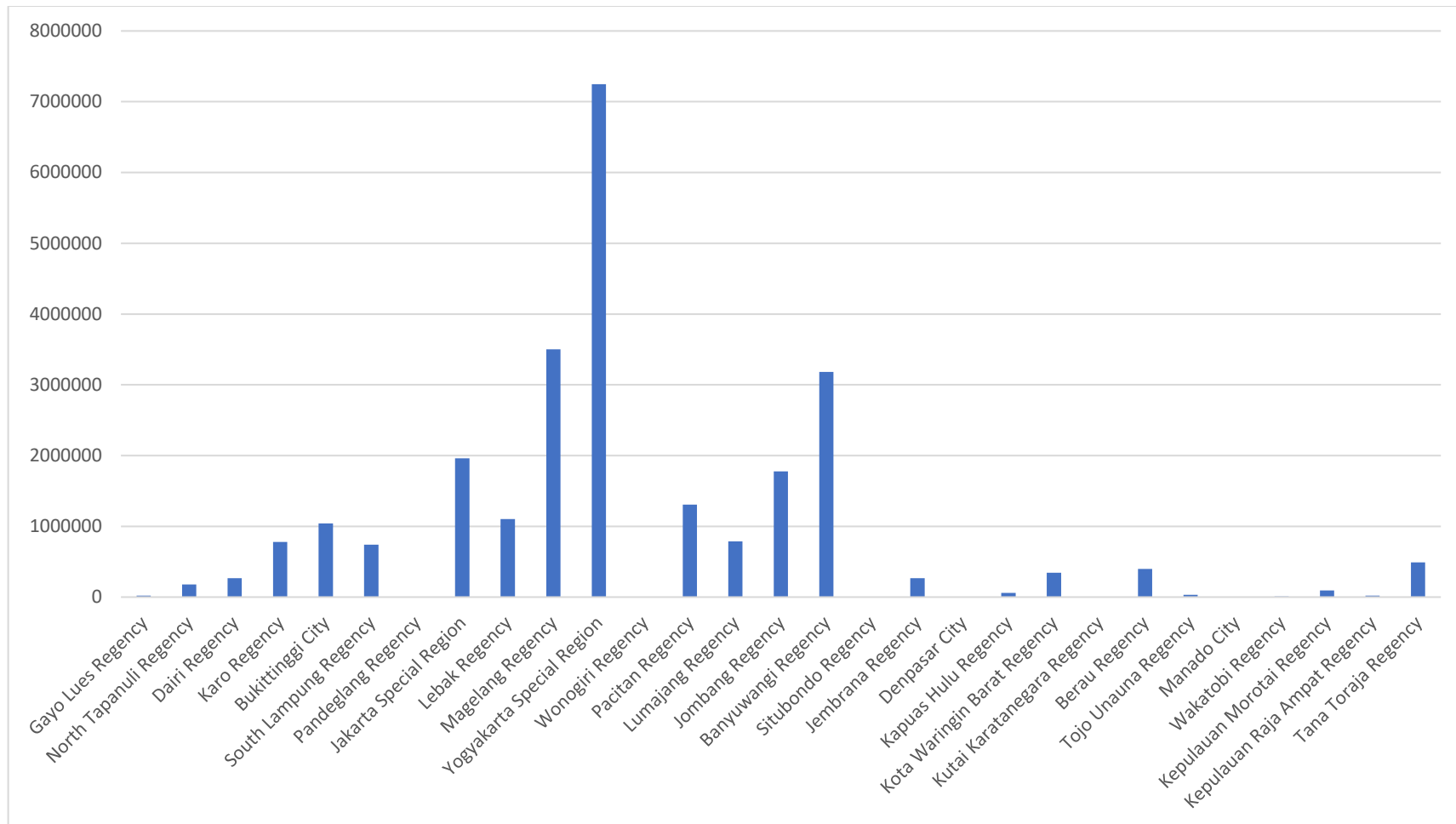
related information, such as business permit requirements and organisational structures, it is not classified as a DMS. A DMS focuses exclusively on conveying tourism information of the destination. Only websites accessible through a valid URL were considered; sites that redirected to other platforms or displayed error pages were excluded. In addition, the websites had to be searchable via Google and updated at least once since 2021. Using these criteria, 29 destination websites were selected for evaluation in this phase of the research. The selected websites and their corresponding regions are presented in Appendix 19.

The selected websites represent regions considered strategic tourism destinations across Indonesia. These 29 regions are geographically dispersed from west to east, as illustrated in Figure 3.5. The figure presents a map of Indonesia highlighting the locations of these regions. The host regions of the selected websites offer a diverse range of tourist attractions, including marine, national park, urban, and culture-based resources. The destinations also reflect varying stages of development, which can be observed through differences in visitor numbers. The visitor numbers for each destination associated with the evaluated DMSs are presented in Figure 3.6. The Figure presents data from 2023 for 23 of the 29 destinations hosting the evaluated DMSs.



**Figure 3.5. Location of Evaluated Indonesia Regional DMS Host Destination**

As in the global DMSs evaluation, qualitative data were generated from the textual content and features of the destination websites. Each DMS was accessed through its URL, beginning with the landing or home page. The content displayed on this page, as well as links and tabs leading to other webpages within the same domain, were systematically observed. Summaries of the available content and features were recorded in a Microsoft Notepad. Following the approach used in the previous phase of website evaluation, the observation and note-taking process was structured around the information, communication, and relationship functionalities of the website. These notes were then treated as qualitative data for analysis, with the websites themselves serving as the original point of reference.



**Figure 3.6. Number of Visitors to Indonesian Regional Destinations Hosting Evaluated DMS in 2023**

Source: Antara Megapolitan, 2025; Antara Sumut, 2025; ; Bantentoday, 2024; Dairi in Figures, 2024; Department of Youth, Sports, and Tourism of Jombang Regency, 2024; Gayo Lue in Figures, 2024; Jembrana in Figures, 2024; Kapuas Hulu in Figures, 2024; Lumajangkab.go.id, 2024; Mata, 2025; North Tapanuli in Figures, 2024; Pacitan in Figures, 2024; Pangaribowo & Rusiana, 2024; Satu Data Jakarta, 2025; South Lampung in Figures, 2024; Tana Toraja in Figures, 2024; Tojo Unauna, 2024; VOI, 2024; Wakatobi in Figures 2024; Waringin in Figures, 2024; Wulandari, 2025; Raja Ampat in Figures, 2024.

## ***b. Data Analysis***

The main aim of the evaluation of Indonesian regional destination websites is to examine their overall practices in relation to their capacity to facilitate community participation. To achieve this aim, the evaluation focuses on three key aspects: the sustainability of website operations, the availability of DMS functionalities, and the presence of functions that support community participation. Deductive content analysis was employed as the primary method for analysing the qualitative data. Consistent with the evaluation of global destination websites, the analysis followed the four stages outlined by Bengtsson (2016): decontextualisation, recontextualisation, categorisation, and compilation. Notes recorded in Microsoft Notepad served as the principal qualitative data, while the websites themselves were also consulted as original data sources to enhance validity, particularly during the processes of decontextualisation and recontextualisation. The management of qualitative data and the coding process were supported by NVivo software.

Whereas the global DMSs evaluation employed an inductive content analysis to identify themes emerging from the data, the evaluation of Indonesian regional destination websites applied a deductive approach guided by predefined criteria. For example, in assessing the continuity of website operations, two criteria were used. First, the website had to display updated content, with the most recent update occurring in 2024 or later. Second, the website had to be error-free, meaning that neither the landing page nor any internal pages generated error messages or were inaccessible. Websites that regularly updated content and error-free navigation were considered to be actively operated and well maintained. The issue of continuity emerged in both the Delphi and stakeholders interview as one of main concerns regarding DMS adoption in Indonesia. The criteria used to evaluate the continuity of Indonesia's destination websites are presented in Table 3.3.

**Table 3.3. Criteria for Evaluating DMS Operational Continuity**

<b>Analysis Output</b>	<b>Criteria</b>
<b>Continuity of the DMS operation</b>	Information was updated 2024 onwards
	Having no error or empty webpage

The occurrence of DMS functionalities on destination websites was assessed by identifying the content and features representing each functionality. For the evaluation of Indonesian regional destination websites, five dimensions were applied, information, communication, relationship, transactional, and technological, as outlined in section 2.4.4. The information functionality refers to textual and multimedia content provided on the website. Communication functionality is represented by features that enable interaction between users or with the website operator. Relationship functionality comprises features and content designed to establish long-term engagement between

the website and users, such as subscription systems or terms and conditions for use. Transactional functionality includes features that allow users to book or purchase services directly through the website. Finally, technological functionality refers to embedded ICT systems, such as GIS or CRM, that support website operations. The evaluation output consists of the occurrence of DMS functionalities, along with the types of content and features representing these functionalities on Indonesian regional destination websites. The detailed criteria used to evaluate the application of DMS functionalities in regional destination websites in Indonesia are presented in Table 3.4.

**Table 3.4. Evaluation Criteria for DMS Functionalities Adoption**

<b>Analysis Output</b>	<b>Criteria</b>
<b>Information Functionality</b>	<ul style="list-style-type: none"> <li>• Textual or multimedia-based information</li> </ul>
<b>Communication Functionality</b>	<ul style="list-style-type: none"> <li>• Message box feature</li> <li>• Comment box feature</li> <li>• Chat feature</li> </ul>
<b>Relationship Functionality</b>	<ul style="list-style-type: none"> <li>• Subscribe feature</li> <li>• Terms and Conditions or Privacy Policy to access the website</li> </ul>
<b>Transactional Functionality</b>	<ul style="list-style-type: none"> <li>• Booking system feature</li> <li>• Payment system feature</li> </ul>
<b>Technological Dimension</b>	<ul style="list-style-type: none"> <li>• Digital based system used on the website</li> </ul>

In assessing DMS functions with the capacity to facilitate community participation, the analysis of Indonesian regional destination websites employed the findings of the global DMSs evaluation as criteria. As explained in section 3.2.2, the global evaluation identified functions (content and features) that support community participation, underpinned by the MOA framework. These functions were then used as benchmarks to identify comparable functions within Indonesian regional destination websites. This approach aims to examine how functions with the potential to support community participation have been adopted in the Indonesian context. The detailed criteria used to evaluate regional destination websites in Indonesia in relation to the adoption of functions that facilitate the MOA framework will be presented in the subsequent findings chapter (Chapter 4), specifically within the themes and functional criteria that emerged from the global DMS evaluation.

### **3.2.4. Part One: DMS Stakeholders Interviews (Phase Three)**

The third phase of Part One involved conducting ten semi-structured interviews with stakeholders connected to two Indonesian regional DMSs that were evaluated in the review of Indonesian regional destination websites. The selection of the two DMS cases for in-depth examination was informed by recommendations from the Delphi study applied in part two of this research. Additional considerations, such as communication

and internet access challenges due to COVID-19 travel restrictions, were also factored in. Ultimately, the Banyuwangi Regency DMS ([www.banyuwangitourism.com](http://www.banyuwangitourism.com)) and the Wakatobi Regency DMS ([www.wakatobitourism.com](http://www.wakatobitourism.com)) were selected for further analysis. These cases are distinct in that the Banyuwangi DMS was organically developed by the local government, whereas the Wakatobi DMS was initiated by a foreign non-governmental organisation (NGO), providing diverse perspectives and insights.

The semi-structured interviews with DMS stakeholders were conducted to examine the adoption of DMSs and assess whether their functions are adopted to support community participation. Semi-structured interviews were chosen as the aim is to uncover the strategic rationale behind the establishment of these regional DMSs in Indonesia, alongside stakeholders' perspectives and expectations regarding their development. The data collected through the interviews were analysed using *thematic analysis* (TA), a branch of qualitative descriptive research design (Vaismoradi et al., 2016). TA is an analytic method designed to identify patterns and meanings within qualitative data, represented as themes (Finlay, 2021). According to Braun and Clarke (2019), a theme in qualitative data is not a straightforward summary but stems from a shared topic rather than shared meaning. The construction of themes often arises from recurring questions posed during data collection. Within TA, themes can emerge from both semantic (explicit) or latent (underlying) meanings (Braun & Clarke, 2019; Vaismoradi et al., 2016).

CA and TA share similarities, particularly in their process of developing 'themes,' which represent the primary goal of the analysis. However, TA adopts a more interpretive approach (Braun & Clarke, 2021a). A key distinction between TA and CA lies in the source of themes. TA derives themes from both semantic and latent content of textual data, allowing for a nuanced understanding of the data. In contrast, most of CA typically involves establishing a defined depth or level of focus in the qualitative data before analysis starts, whether the analysis stem from textual or latent content (Vaismoradi et al., 2016). This predetermined nature makes CA less flexible than TA, which offers a more in-depth interpretive analysis. Humbel and Mozelius (2022) highlight this practical difference, noting that while TA provides a richer analysis of qualitative data, CA has broader applicability. In this research, TA was chosen to analyse the DMS stakeholder interviews to gain a deeper understanding of the data. This choice was influenced by the participants' limited familiarity with the DMS concept and the researcher's ability to interpret the data within the specific language and communication context of Indonesian participants.

Qualitative research is commonly used in tourism research, with CA being used more frequently than TA as the preferred data analysis method (Walters, 2016). Most of the TA used in tourism literature is applied to analyse rich textual data from interview transcripts

or documents (Walters, 2016). Walters criticises the application of TA in tourism research that needs a more procedural explanation, which affects the credibility of TA in tourism research. Walters also suggests that TA can be applied to many types of textual data, such as online data and newspapers, and encourages the use of TA in various qualitative data. Recently, TA has been used in tourism literature to analyse a variety of textual data. For example, MacCarthy and Hang Rigney (2021) used a combination of netnography and reflexive TA supported by Leximancer analysis tools to analyse comments on TripAdvisor about the guest experience at the National ANZAC Centre in Western Australia,<sup>1</sup> while Mele et al. (2023) used quantitative CA and TA to analyse the marketing message from Paris and Milan DMOs' Instagram posts during the COVID-19 pandemic. In this latter study, CA was used to analyse the most engaging visual content from the Instagram posts, while TA was applied to examine the themes of the Instagram marketing content. The strength of the TA used in both studies (MacCarthy & Hang Rigney, 2021; Mele et al., 2023) is that this method of analysis can decipher the deeper meaning of qualitative data as it considers both latent and textual meaning in the analysis process.

This research approaches TA using the process described in Braun and Clarke (2006; 2019). While Braun and Clarke provide a procedural approach to TA, they suggest that the researcher's creative, subjective and reflexive viewpoint of the data is the strength of the (reflexive) TA. In the end, Braun and Clarke's approach to TA emphasises the story-telling approach of the data.

#### ***a. Data Generation and Collection***

A qualitative approach to the data collection from the DMS stakeholders was applied using ten semi-structured interviews. The participants were selected using *purposive sampling*, which focused on identifying stakeholders who could provide information about the design, development and operation of the DMS. The identified stakeholders are government officials involved in the creation and the daily operation of the DMS, or local business operators and representatives from community groups that feature on the DMS or are involved in the DMS operation. Ten participants were identified for this part of the research: six associated with the Banyuwangi Region DMS and four with the Wakatobi Region DMS. Data saturation was reached after ten interviews, assessed through the exhaustion of themes, whereby no new themes emerged from the data. This aligns with Braun and Clarke (2021b), who suggest that data saturation may be achieved with as few as six to sixteen interviews.

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<sup>1</sup> Leximancer is a software used to support the qualitative analysis used to present key concepts, themes and relationships based on frequency and cooccurrences.

The DMS stakeholders were identified through publicly accessible sources. For instance, the stakeholders of the Wakatobi Tourism website were identified through the published project report “WISATA, 2018” (Swisscontact, 2018) and through the community groups that are featured on the website, like the community-based tourism groups. In the case of the Banyuwangi Tourism website, the interview participants were identified from the website’s primary contacts list as the website is operated directly by the local government and businesses that feature on the website. Participants were recruited through email invitations, followed up by communication via WhatsApp. The email invitations were sent to personal email addresses, obtained from public sources such as destination and government service websites. A total of ten invitations were sent, and all invitees accepted the invitation to participate in this research. The research information sheet and the consent form that were sent to the participants along with the invitations are presented in Appendix 8 and Appendix 9, respectively.

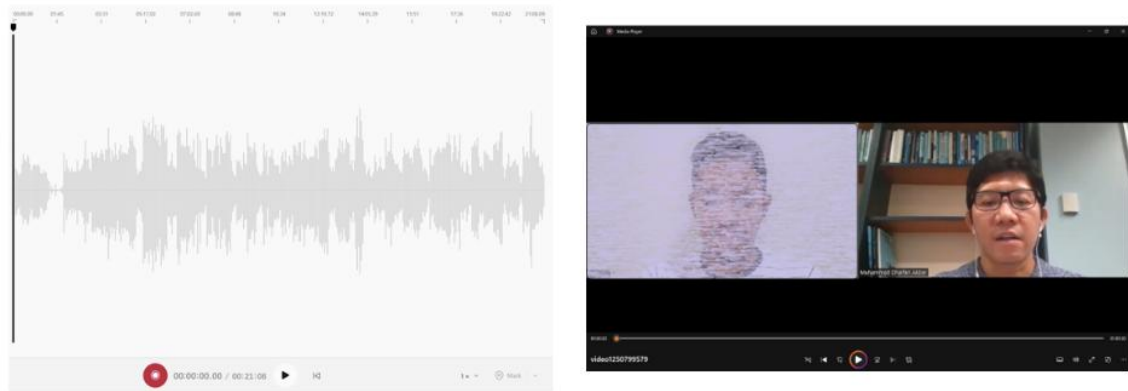
The data was collected through semi-structured interviews. The interview questions focused on the strategic reasons for the creation of the DMS or destination website, the development process, the evaluation of the current website operation, and the expectations for future development. Each interview lasted 30-40 minutes; the interviews were conducted in Bahasa Indonesia as all the participants and the researcher were native speakers of Bahasa Indonesia. The interview guidelines used for the semi-structured interviews can be seen in Appendix 10.

The initial plan for this part of the research was to conduct interviews remotely via digital communication platforms such as Zoom, due to Covid-19 restrictions in New Zealand and Indonesia. However, the implementation varied between cases. Interviews with Wakatobi DMS stakeholders were conducted online, while those with Banyuwangi DMS stakeholders were conducted in person. This divergence in method arose from several factors. For Banyuwangi, slower responses to the online invitations and the lifting of COVID-19 travel restrictions prompted the decision to conduct in-person interviews. The alternative scenario of conducting in-person interviews for both cases was not chosen due to logistic and funding constraints. The decision to change the initial plan of the interview process was considered carefully to benefit the outcome of the research, hence embracing the pragmatic approach of this research.

Both online and in-person interviews provided unique benefits under different circumstances. Online interviews during the pandemic were practical, adhering to health guidelines and travel restrictions. Conversely, in-person interviews offered deeper insights, as the researcher could observe and experience the local context of the DMS operations, enriching the qualitative analysis. For Banyuwangi, the researcher’s physical presence allowed for direct observation of daily operations, which added value to the

interview data. Although it was still possible to clarify issues that arose during the online interviews with follow-up questions, this remote form of interviewing did not offer the same observational benefits as the in-person interviews. The decision to adapt the interview approach reflects the pragmatic orientation of this research, accommodating situational constraints to optimise data collection outcomes.

Both the online and in-person interviews were recorded with the participant's permission and the data kept in audio files. For the online interviews, the data were recorded in video files as well as in the simpler audio format. The online interviews were recorded with the Zoom application, whereas the in-person interviews were recorded using the voice recorder app. The audio recordings of the interviews are stored in the researcher's computer, which can only be accessed by the researcher. The digital recordings were augmented with notetaking during the interview. The online interviews were conducted (from New Zealand) from June 2022 to October 2022, and the in-person interviews were conducted in Indonesia from July 2022 to August 2022. Figure 3.7 illustrates the example of Zoom-enabled interview and the recording data it generated.



**Figure 3.7. Preview of Video and Voice Recording of the DMS Stakeholders' Interview**

### ***b. Data Analysis***

The recorded interview data were transcribed using a partial transcription format, as recommended by King et al. (2019), rather than a verbatim or full transcription. Although Point and Baruch (2023) note that digital tools now allow for more direct coding of qualitative data, bypassing the traditional transcription process, they also acknowledge that transcription remains a valuable first step in qualitative analysis. This research opted for partial transcription to balance time efficiency with the benefits of familiarising oneself with the data, acknowledging that while full transcription can be more comprehensive, partial transcription still supports a thorough and efficient analysis process.

The interview transcriptions were analysed using reflexive TA (Braun & Clarke, 2006; 2019). The transcribed data (partial transcription) served as the primary source for analysis, with the original audio files also referenced to ensure accuracy. Following the

methodology outlined by Braun and Clarke (2006, 2019), this research adhered to six steps when conducting the TA: (1) familiarising oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. While these steps provide a structural framework, Braun and Clarke (2019) emphasise that TA should be flexible and creative, with the researcher taking an active role in guiding the analysis.

In this research, the transcription of interviews was approached as an initial step to become familiar with the qualitative data and to facilitate the analysis process, as suggested by Point and Baruch (2023). The partial transcripts were imported into NVivo, a qualitative management software, to assist with the coding and thematic analysis. NVivo facilitated the organisation of the coding process and the development of themes, which were refined iteratively until central themes were established. The findings from the website evaluations of Indonesian DMSs were referenced to contextualise the themes and validate the findings. For example, when discussing the business promotion function of a DMS, insights from the website evaluations were used to understand and interpret the participants' responses. An example of defining and naming themes process related to the purpose of destination websites can be seen in one participant's explanation:

“...introduce our region and change those images. It went from a city of witchcraft to a tourism and internet city (where information related to the region can be found on the internet). People can know us (the region better) from afar through the internet...”

This statement illustrates how the DMS is perceived primarily as a promotional tool, used to communicate and influence external perceptions of the region. In this case, the website is framed as a medium for rebranding the destination from being viewed as 'eerie' to being recognised as a contemporary and attractive place to visit. This reflects a promotional theme, in which the DMS is positioned as a digital platform for promoting the region as a tourism destination.

The qualitative data were analysed in Bahasa Indonesia (the official language of Indonesia), while the results were subsequently written up in English. In the presentation of the analysis, each quote is attributed to its source using a coded identifier to maintain confidentiality and ensure ease of reference. The codes for the interviewees and their descriptions are provided in Appendix 20.

### **3.2.5. Part Two: Delphi Study**

Jennings (2010) describes the Delphi method as an executive or knowledgeable panel judgment method. This method involves gathering and analysing information from a panel of experts over several rounds (Veal, 2018). The Delphi method has been used in various disciplines to solve complex problems (Donohue & Needham, 2009; Sobaih et

al., 2012). In many cases, the Delphi method is used as a forecasting procedure (von Bergner & Lohmann, 2014). In the case where there is not necessarily a “correct” answer to a particular question or problem, a discussion involving a panel of experts facilitated by Delphi method can be considered a means to provide an acceptable answer to the problem being discussed (Donohue & Needham, 2009; Garrod & Fyall, 2005).

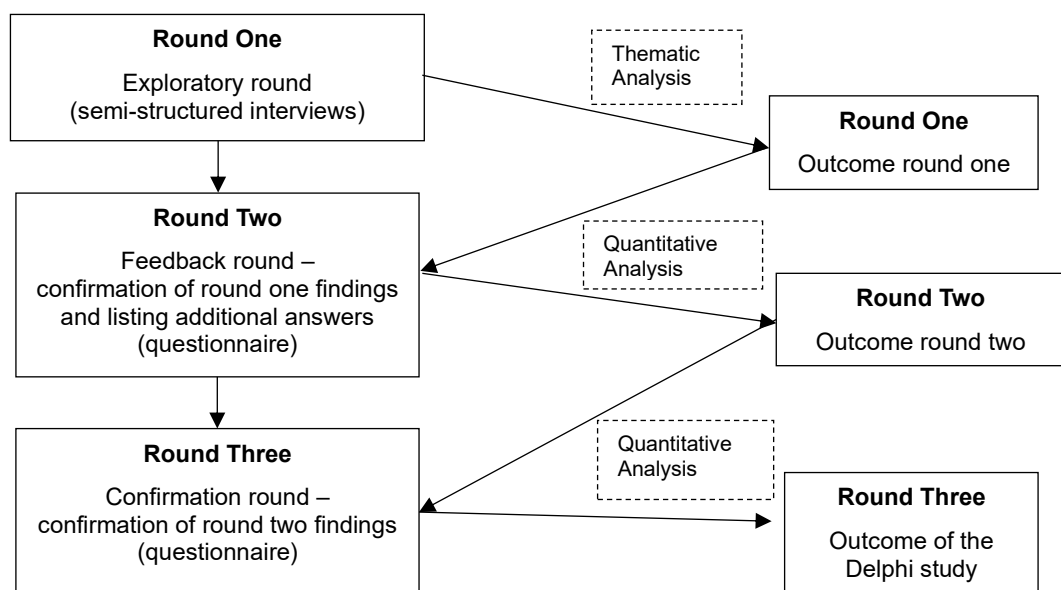
From the research framework perspective, there is no conclusion regarding the place of the Delphi method in the paradigmatic views often found in social sciences. Fink-Hafner et al. (2019) suggest that the Delphi method emerges from the divide between two traditional research paradigms (positivism and interpretivism). They also confirm that many Delphi studies have both qualitative and quantitative elements, which characterises the pragmatism view (Fink-Hafner et al., 2019). Conversely, Avella (2016) argues that the Delphi method is predominantly qualitative in nature; although it can have a quantitative element in its procedure, the complete Delphi process more aligns with in the interpretivist view. Although Avella's view is sensible, Fink-Hafner et al. (2019) found that quantitative approaches have been commonly used than qualitative approaches in Delphi studies. This current research applies the Delphi method as a mixed method approach, incorporating both quantitative and qualitative traditions. Specifically, the Delphi method used here predominantly employs an inductive approach, which facilitates the exploration of how a DMS can support community participation. The quantitative aspect is employed to achieve consensus, while the inductive approach supports a deeper investigation into the DMS functions in supporting community participation.

The strength of the Delphi method lies in its process (Garrod & Fyall, 2005). According to Garrod and Fyall (2005), the procedure allows the researcher to provide a solution for a particular problem or issue from knowledgeable sources in the expert panel, which may be spread geographically. The iterative process of the Delphi method also allows members of the panel to review, comment and make changes based on the findings from the previous round, which, in turn, improves the study's accuracy and adds validity to the result (Donohue & Needham, 2009). Another essential strength of the Delphi method is its ability to facilitate alternative methods from conventional approaches, such as reductionist and regression analysis, that face limitations when engaging with emerging issues and complex problems (Donohue & Needham, 2009). Sourak (2015) used the Delphi method to formulate evaluation criteria subject to the DMS's geographical context. The Delphi method allowed Sourak to cross-examine the findings with all the panel members rather than quickly eliminate answers based on quantitative analysis.

As the strength of the Delphi method is related to its well-planned process, a robust research design plan is essential for the successful implementation of the method. In

general, the Delphi method used in this research is designed to incorporate diverse perspectives from academics, practitioners, and policymakers, both within and beyond the context of the study area (Indonesia). The approach aims to gather comprehensive insights into the adoption of DMSs and their potential to support community participation. This research employed a Delphi study to develop a framework for an alternative DMS that puts greater emphasis on strengthening community participation practices in local tourism development. To do this, the Delphi study sought to address several objectives including defining what constitutes a DMS; exploring the capability of a DMS to support community participation in tourism practices through its functions; and exploring DMS development scenarios for the future, particularly in strengthening community participation in local tourism development.

The Delphi method in the part two of this research consisted of three rounds. The study's Delphi method design is presented in a flowchart form (Figure 3.8), which includes the description of each round, and the methods used to analyse the data generated in each round. A significant aspect of the Delphi method planning is the selection of panel members. There is no explicit quota found in the literature on the ideal number of participants for Delphi studies. Sobaih et al. (2012) reported that in many Delphi studies, the number of participants ranges from seven to fifteen, while 115 participants are the most recorded in any Delphi study. Garrod and Fyall (2005) suggest that 15 to 20 participants is a good number for the Delphi process. Avella (2016) indicates that the typical panel size for Delphi research is between 10 and 100 members. The Delphi method applied in this research consisted of three rounds and involved 14 participants as "the experts" panel.



**Figure 3.8. Delphi Study Design**

Determining the criteria for selecting “experts” to serve on the Delphi panel is a critical component of the Delphi study design. Donohue and Needham (2009) emphasise that experts must have extensive knowledge and a strong connection to the research issue, as this influences their capacity and willingness to participate. Lund (2020) defines experts as individuals with significant knowledge and experience in the research topic, often recognised for their contributions to the literature in the field. Practically, Sobaih et al. (2012) suggest that an academic profile is a key criterion for selecting experts, along with job roles and the judgment of the Delphi architect.

The criteria for selecting Delphi panel experts for this study included academic background, professional qualifications relevant to the research subject, and expertise in tourism development in Indonesia. Given the research's focus on the intersection of sustainable tourism and ICT, panel members were chosen based on their expertise in these areas. It was essential to include academics from both Indonesian and international contexts who have published relevant research. Additionally, destination managers, DMS developers, policymakers and community leaders from the two case study locations were included to provide practical insights. This approach aligns with Lund (2020) and Sobaih et al. (2012), who argue that job roles and professional experience are important criteria for selecting experts in Delphi studies.

Potential participants for the Delphi panel were approached by email. Email addresses were acquired from publicly available sources such as official profiles in professional institutions or through social media, in this case, from LinkedIn, a social network for professionals. Thirty-six people were approached and invited to become Delphi participants; 17 were international and 19 were Indonesian. Out of 36 invitations sent, 14 people agreed to be involved in the Delphi study. The final Delphi panel comprised six academics, two NGO members, three representatives from tourism authorities and three tourism development consultants; four were international participants and ten came from Indonesia. None of the Delphi panellists had been involved in part one of the research.

Some challenges in being involved in a Delphi study were mentioned by potential participants; one of these is the lengthy commitment required to be involved in such a project. This challenge has been well-documented in previous literature (Donohue & Needham, 2008; Garrod & Fyall, 2005; Sobaih et al., 2012). Another constraint mentioned was related to the impacts of COVID-19, as some of the invitees mentioned their anxiety about using too much technology in their daily activities and their need to relocate and take a break from professional activities during the peak period of the pandemic. Given the potential impact of COVID-19 on the Delphi Panel participants, interview arrangements and data collection were coordinated informally via WhatsApp,

LinkedIn and/or email. The data collection schedule was tailored to each participant's preferences, including considerations for their respective time zones. The information sheet and the consent form sent to the Delphi panel members are presented in Appendix 11 and Appendix 12, respectively.

Due to the importance of maintaining communication with all the panel members, after the invitee accepted the invitation, subsequent correspondence further explained the study's aim and objectives. This allowed each panel member to clarify any information or ask questions about the research. Channels of communication were not limited to email; Delphi members also communicated through online chat or other social media applications (e.g. LinkedIn and WhatsApp). Regular communication of this nature proved to be beneficial as it helped to build a relationship between the researcher and the participants and strengthened their commitment to be involved in this Delphi study. While attrition of the Delphi panel participants is a commonly recognised challenge among Delphi group practitioners (Donohue & Needham, 2009; Garrod & Fyall, 2005; Sobaih et al., 2012), this was not the case in this research because of the relationship built between the researcher and the participants through seamless communication. From a practical perspective, a Delphi study is also beneficial if there is a concern about the financial and geographical constraints of the research process, where relevant experts cannot be in direct communication with each other (Donohue & Needham, 2009). The main reason Delphi is cost-effective is that it does not require all participants to meet with others directly, and most communication with the panel can be done using any form of long-distance communication. Thus, a Delphi study was practically effective when facing the challenge of the COVID-19 pandemic restrictions.

Overall, the communication for the data collection in this third part of the research, the Delphi study, was conducted in Bahasa Indonesian or English. International members of the Delphi panel communicated in English, whereas Indonesian members were more comfortable communicating in Bahasa Indonesia. In the case where the data collection was conducted in Bahasa Indonesia, the researcher mediated the language translation. The researcher personally conducted all data collection for each round. To bridge Eastern and Western perspectives in data analysis, researchers must acknowledge their own cultural biases and integrate respectful, inclusive practices throughout the research process. The goal is to move beyond interpreting data through a single lens and to create a more nuanced, holistic understanding that reflects the full context of where the data was collected. To address any cross-cultural challenges, the researcher sought to bridge the gap between Western and Indonesian participants by conducting the data collection, generation, and analysis personally. The researcher's background, having been educated in both Western and Indonesian contexts, provided a valuable foundation for navigating cultural differences and interpreting the data across all participants. As the

researcher, I made certain to engage in analysis through the practice of reflexivity and self-awareness, acknowledging and reflecting on my own cultural perspective, which is influenced by my values, experiences, and assumptions. This approach allowed me to avoid interpreting situations, actions, or data solely through the lens of my own cultural standards.

The data analysis processes were supported with the qualitative data management software NVivo for qualitative analysis and analytical software SPSS for quantitative analysis. Additionally, online tools were used to mediate the communication between the researcher and the members amid COVID-19 restrictions. Digital communication provided a challenge, particularly concerning the response time and the dependency on the internet connection; nevertheless, this provided a safe communication alternative during the COVID-19 pandemic. In each round of data analysis, coded identification is applied to all participants being quoted. This approach maintains confidentiality and facilitates easy referencing. The codes assigned to each interviewee, along with their corresponding descriptions, are detailed in Appendix 21. The data collection and the data analysis processes will be explained in subsequent sections.

The Delphi method is also subject to the weaknesses that face other group data-gathering techniques, such as the focus group discussion (FGD). There are four weaknesses of group studies: error amplification, the cascade effect, the inability to get relevant knowledge, and group polarisation (Sunstein, 2006). Forming a panel with members from a wide array of backgrounds related to the research theme can help get critical information to address research questions (Donohue & Needham, 2009). Keeping the anonymity of panel members was helpful to ensure the independence of the answers provided and to prevent bias towards one answer (Garrord & Fyall, 2005). Planning the iterative process of the Delphi method, including deciding consensus standards, addressed any polarisation and potential errors in the answers provided (Donohue & Needham, 2009). The design of the Delphi panel in this research is formulated by considering the challenges mentioned in the literature.

#### ***a. Round One***

The first round of the Delphi study was the exploratory stage. To optimise an opportunity to explain the research project and the issue discussed in the Delphi study, this initial round was conducted using semi-structured interviews as a means to generate data. The interviews provided a chance for the researcher and the Delphi panel to have live interactive communication, which allowed the researcher to explain the research process and the participant's role in it. The first Delphi round discussed three main topics: (1) DMS terminology, (2) DMS interrelationship with sustainable tourism and community participation, and (3) DMS future development. The first topic aims to define DMS based

on its concept, purposes and technical construction. The second topic discusses the way a DMS can contribute to sustainable tourism practices, particularly in enabling community participation. The third topic explores the recommendations for future development of DMSs from a management and technical perspective.

The data collection method used in round one of this Delphi study was a semi-structured interview with each of the 14 participants. Before the first round of the Delphi study commenced, an email with an information sheet about the research was sent to the participants to inform them about the Delphi process and to start the conversation about the preferred communication mechanisms and time for the interview. From the initial communication, all the participants preferred to use the online communication app Zoom for the interview.

A set of questions were compiled to guide the interview. Prior to the interviews with the panellists, the questions were tested in pilot interviews, which involved two participants with the same profile as the Delphi panel members. The interviews conducted during the pilot phase were recorded with the consent of the participants. Feedback regarding the interview questions was solicited during these pilot interviews and was used to fine-tune the questions to be used for the round one interviews. The interview guide for the pilot interviews and for round one are presented in Appendix 13 and Appendix 14, respectively.

Fourteen semi-constructed interviews were conducted in the first round of the Delphi study. The interviews ranged from 40 to 50 minutes in duration. All the interviews were recorded and transcribed before being analysed; notes were also taken during the interviews. The recorded interviews were transcribed using partial transcription. The transcriptions of the interviews conducted in Bahasa Indonesia were translated into English for analysis purposes, and the findings were reported using English as the primary language. The interview recordings and transcriptions were saved as digital data and stored in a private computer that only the researcher could access.

The data generated from the interview were analysed using qualitative analysis methods (Braun & Clarke, 2006, 2019). The transcription and the translation process of the interview were conducted individually by the researcher and treated as part of the analysis procedure, as both processes can be considered as data familiarisation processes. The TA process of coding and finding a theme was a recurring process to shape the themes. The process of coding and formulating themes was supported with the qualitative analysis management software NVivo. The findings from round one were evaluated in the Delphi round two questionnaire.

## ***b. Round Two***

The Delphi panel were reminded that there would be further data collected, and subsequent communication, following the first round of the study. The data collection process in round two was conducted in the form of questionnaires that were sent to the 14 participants. Round two of the Delphi study focused on getting feedback from the panel on the round one findings as part of the iterative process. The questionnaire consisted of eleven closed and open-ended questions. The findings from the first round were presented as a list of statements. The participants were asked to indicate their agreement with the statements presented and invited to give feedback about each statement. The survey also included space for the panellists to add new answers via comment box below each question. Before the questionnaire was sent out, it was piloted with two individuals to test the clarity and validity of the questions. The feedback from the pilot survey was used to evaluate and revise the questionnaire before the data collection commenced. The Delphi round two questionnaire is presented in Appendix 15.

The questionnaire was sent to the panel members as a Microsoft Word document attached to an email, and they completed the questionnaire and returned their responses via email. The 14 questionnaires were emailed out on 21 November 2022 and the last completed questionnaire was returned on 14 December 2022. Of the 14 questionnaires that had been sent out to the panel members, 12 were completed and returned for analysis (a response rate of 86%). Although the questionnaire was in Microsoft Word format, a few participants reported that they had had technical difficulties filling out the form. Therefore, an alternative method of uploading the questionnaire – in the Qualtrics survey applications format – was created to accommodate those participants who were having trouble filling out the earlier questionnaire form. The completed questionnaire was retrieved from the email, downloaded to the researcher's personal computer, and saved in PDF format to add encryption to the survey result. The questionnaire responses retrieved from the Qualtrics format were downloaded in pdf format and stored in the researcher's personal computer. Thus, the completed questionnaires were stored in a device that was only accessible by the researcher.

The data retrieved from the completed questionnaires consist of responses to both close-ended and open questions. The closed-ended questions in the questionnaire were structured to have yes/no responses, designed to assess the participants' agreement with the findings from the first round of the Delphi study. These responses were transformed into quantitative data and analysed using quantitative analysis techniques using descriptive statistics supported by the SPSS quantitative analytical tools. These responses were transformed into quantitative data and analysed using quantitative analysis techniques, namely descriptive statistics supported by the SPSS quantitative

analytical tools. Drawing on Avella's (2016) recommendation on the criterion for "consensual answers", the statements that were agreed with by at least 70% (9) of the respondents were consensual answers. The outcome of the quantitative analysis is the first iteration of the consensual answers. Data from the open-ended questions were analysed, using TA, and added to the findings from the quantitative data analysis.

The findings from the second round of the Delphi method built upon and refined the findings from the first round. In this phase, the Delphi method employed a mixed method approach, using quantitative analysis to narrow down and prioritise the initial findings, and qualitative feedback to clarify and enhance these insights. The panel were invited to evaluate the statements and/or add further suggestions to the list; thus, there were two types of textual responses from the questionnaire. The evaluation comments were used to evaluate the themes, or the meaning of the themes, found from round one, while the additions comments were examined against the themes from round one to see whether these suggestions aligned with the recurring themes or established new themes. The enriched findings from round two were then further tested and validated in the third round of the Delphi method.

### ***c. Round Three***

Round three focused on finding the final consensual answer to the Delphi study based on the findings from the two previous rounds. The Delphi round three data was collected using a questionnaire, consisting of closed-ended questions, and a 5-point Likert scale that captured the participant's perceptions. The questions captured the extent to which the panellists' agreed with eleven statements, with a score of 1 being "strongly disagree" and a score of 5 being "strongly agree". The panellists were not given the option of adding open-ended responses in comment boxes. Once again, the questionnaire was tested in a pilot survey involving two participants for evaluation purposes. The questionnaire was evaluated and revised based on the feedback from the pilot survey before being distributed to the participants. The Delphi round three questionnaire survey form is presented in Appendix 16.

The answers that passed the quantitative criteria for consensual answers are considered the final findings of the Delphi study. The criterion for the final consensual answers uses two levels of threshold, the first is based on the proportion of participants who agreed with the findings, and the second is the interquartile range (IQR) of the 5-point Likert scales. Von der Gracht (2012) suggests that having an IQR value of less or equal to 1 is the most common consensus indicator for a 5-point Likert scale, while the median indicates the answers agreed. For instance, if the median for the responses on a statement is 4, which is equivalent to "agree", and the IQR is 1, this indicator suggests that the panel consensually agree to the said statement. Another indicator used for the

consensus criteria is having at least 90% of the responses agreeing with the statement. This means that a consensus on the statement is reached if at least 90% of the panel members either scored “agree” or “strongly agree” (points 4 or 5) or scored “strongly disagree” or “disagree” (points 1 or 2) on the Likert scale. The responses that fit with the IQR and the frequency proportion indicators (at least 90% agreement) are consensus answers. This consensus criterion is adopted in the Delphi method employed in this research.

The Delphi round three questionnaire was distributed to the Delphi panellists by email. Before round three of the Delphi study commenced, however, one member of the panel passed, leaving 13 panel members. The Delphi round three questionnaire was designed in two formats: in Microsoft Word and using the Qualtrics survey tools. The Qualtrics format was added as some of the panel had reported technical difficulties filling in the round two questionnaire, which was initially only in Microsoft Word form. The round three questionnaire was delivered to the 13 panellists through an attached email, which also provided a link to the electronic questionnaire, in Qualtrics form. The questionnaires were emailed out on 3 March 2023 and the last completed questionnaire was received on 28 March 2023. After approximately three weeks, 13 completed questionnaires were retrieved (a response rate of 100%).

The data retrieved from the round three survey were analysed using a quantitative analysis approach. The questionnaire responses were inputted in the SPSS and analysed using descriptive statistics to establish the frequency proportion, median and IQR of each answer. The responses that had both an IQR of less than or equal to 1 and least 90% agreement (that is, at least 90% of the panel members scoring either points 4 or 5 or points 1 or 2 on the Likert scale) are considered to be consensus answers.

### **3.3. Research Ethics**

This research involved human participants in the DMS interviews and the Delphi Method section, necessitating adherence to the ethical standards set by Auckland University of Technology (AUT). In compliance with these ethical norms, a research ethics form was submitted to the Auckland University of Technology Ethics Committee (AUTEC), and the research received approval on 30 June 2021. The ethics approval letter is provided in Appendix 1. The application of ethical principles in this research was rigorously enforced through AUTEC's procedures and evaluations.

The principal ethical considerations guiding this research included informed voluntary consent, confidentiality of participant profiles and information, risk minimisation, and data integrity, as outlined by AUTEC standards. Given that data collection involved human participants during the COVID-19 period, the research also prioritised participant well-

being, with a focus on building trust. Furthermore, in line with gender equality promotion, an equitable approach was adopted in participant recruitment, selecting participants based on merit without regard to gender, ensuring fairness and inclusivity throughout the research process.

This research approach prioritised ethical principles, particularly regarding human interactions, by fostering trust through open communication with participants. A personalised approach was used for each participant, allowing them to select the timing and communication medium, or face-to-face interview location. This flexibility was intended to enhance comfort, independence, and well-being, addressing both risk minimisation and participant well-being as central ethical considerations. Additionally, this approach reinforced the principle of voluntary consent by ensuring participants felt empowered to engage in the interviews or surveys on their own terms.

In addition to the social approach with participants, this research implemented its design in alignment with research ethics principles, guided by AUTECH standards. To uphold privacy and confidentiality, interview and questionnaire data were immediately converted into qualitative and quantitative formats and analysed solely by the researcher. All data were securely stored on a digital device accessible only to the researcher. Presentations or publications derived from the research will use aggregated data to ensure individual sources remain unidentifiable, reinforcing the principle of anonymity. Additionally, the information sheet guided participants on how to withdraw from the study, offering them a means to exit should they have felt uncomfortable, thus respecting the principle of voluntary consent and mitigating potential risks, including job-related or social vulnerabilities influenced by COVID-19.

As discussed in section 3.2, participant recruitment for this research was conducted using purposive sampling, with selection based on indicators specified in the research design. These predetermined indicators ensured that recruitment adhered to the principle of equity by applying specific, fair criteria. All participant data were collected from publicly accessible sources, including LinkedIn, the internet, and social media, thereby safeguarding privacy and respecting consent principles. The questions were crafted with careful consideration to enable participants to respond independently, mitigating any potential risks associated with their responses.

The Delphi method, requiring a sequential data collection process, and was designed to uphold ethical principles carefully. Each round of data collection was reviewed and registered with AUTECH as part of the ethical amendments process. Amendments to the original ethics approval were submitted for each subsequent data collection phase in the Delphi study, covering rounds two and three, which received AUTECH approval on 18 November 2022 and 2 March 2023, respectively. The ethics approval letters for the

Delphi round two and three surveys are provided in Appendix 3 and Appendix 4. Additionally, an amendment to shift data collection from online to in-person interviews was approved on 21 June 2022. The ethics approval for the face-to-face interviews is provided in Appendix 2. All AUTEK-approved procedures were meticulously adhered to, ensuring full compliance with ethical standards throughout the research.

### **3.4. Researcher Positioning and Reflexivity**

As the researcher, originating from Indonesia, the geographical focus of this study, I have a background working at the Tourism Research Centre at the Institute of Technology Bandung (ITB) in Indonesia prior to commencing this PhD research. My professional experience involved numerous tourism-related projects in both academic and policy-based research, predominantly within Indonesia. My primary interest in tourism development in Indonesia is centred on its potential to foster regional development and enhance local community well-being, areas in which tourism has yet to be fully realised in many regions.

I view Indonesia, my native country and the focus of my study, as a nation rich in natural resources, particularly mining commodities, forestry and agriculture. However, these resources are predominantly exploited for economic growth, often benefiting only a small segment of the population. Consequently, I believe that an industry such as tourism, which does not rely heavily on natural resource exploitation, could offer a more sustainable development model. By mitigating environmental degradation and distributing economic benefits more equitably, tourism has the potential to contribute positively to Indonesia's development.

This PhD research is inspired by the pursuit of sustainable tourism practices, aiming to address systemic challenges within Indonesian tourism development, particularly the issue of community participation. I believe that research, as a pursuit of knowledge, should not only analyse issues but also offer actionable solutions to practical problems. My research philosophy is guided by a positive outlook, where I prioritise identifying value over fault. I believe that academic methodologies, as tools for addressing problems, each hold unique value depending on the research context, such as the unit of analysis, relevant prior studies, case background, and data accessibility. This perspective has shaped my pragmatic approach in this research, allowing flexibility in selecting methods best suited to the specific conditions of the study.

The inspiration for this research arose from witnessing the impact of social media in mobilising community-led beaches clean-up initiatives in Bali, sparked by images of polluted beach. My research experience in Indonesia has shown that local communities in many destinations remain underinformed about tourism development, often

underestimating their potential influence in shaping outcomes and accessing benefits. This information gap represents a core issue in tourism, especially in enhancing community agency. I believe that strategically leveraging innovative technologies, such as ICT, could help address this gap. Despite my insights into Indonesian tourism, I approach this research as an outsider, having not been involved in practical decision-making processes like developing destination websites. Consequently, I lack prior knowledge of the underlying strategies behind these platforms.

My research background significantly influences this study. While I hold a perspective on how tourism in Indonesia should evolve, which could introduce potential biases, my philosophical commitment to seeking value helps mitigate this risk. I believe that understanding the perspectives of authorities involved in developing ICT platforms, such as DMS, is crucial before recommending valuable changes for their adoption. Furthermore, my experience in Indonesian tourism research has been advantageous, facilitating effective communication with stakeholders and providing valuable insights into the country's tourism landscape. Additionally, my proficiency in both Bahasa Indonesia and English allows me to independently manage qualitative data translation, though I find this process to be time-consuming and sometimes inefficient. However, I find the value in doing the translation and transcription manually as it helps me to become more familiar with the data. My educational journey across both the Global North and South has enabled me to understand views, concepts, and frameworks relevant to this research from both contexts, thereby allowing me to bridge potential cultural gaps arising within the study.

## Chapter 4. Global DMS in Enabling Community Participation

This chapter presents findings from Part One of the research, particularly related to the evaluation of DMSs from around the world focusing on functions that can support community participation in tourism development. *DMS functions* comprises the features and content of the DMS (Estêvão et al., 2020a), such as visitor information and a chat feature. Whereas *DMS functionalities* (as previously discussed in section 2.4.4) refers to the system element in producing output in terms of functions. Some scholars classify DMS functionalities into five dimensions: information, communication, relationship, transaction and technology (Benckendorff et al., 2019; Estêvão et al., 2020a). As mentioned in section 2.4.4, the destination website, as the front face of the DMS, is the main public access to the system, which is also the access used to analyse its function. Therefore, this chapter uses the term destination website and DMS interchangeably.

### 4.1. Global DMS and Community Participation

This section analyses how global DMS functions facilitate destination community participation in tourism development. The review is derived from the evaluation of 52 destination websites from around the world. The destination websites that were evaluated represent various destination contexts. The destinations that host the DMS are classified into four level categories: country level; regional, provincial or state level; sub-regional level; and urban and metropolitan level.

The management bodies behind the 52 evaluated DMSs can be classified into two main categories: government-affiliated organisations (37 DMSs), and non-government-related organisations (13 DMSs). The government-affiliated organisations include government structural bodies, such as the Corn Island Municipal Government (Nicaragua), and government-affiliated destination management organisations (DMOs), like Destination British Columbia (Canada). Non-government-related organisations comprise local tourism stakeholder groups such as the Destination Great Barrier Island Trust (New Zealand), private companies such as Easter Island Tourism, a website developer company, and private DMOs such as Destination Ann Arbor (Michigan, USA). Most of the DMSs that are not managed by a government body are hosted by smaller-scale destinations like Koh Yao (Thailand), Atauro Islands (East Timor), the Caitlins (New Zealand), Raja Ampat (Indonesia), the Sahara (Morocco, Chad, Algeria and Mauritania), and Halong Bay (Vietnam). Three of the 52 destination websites evaluated did not clearly describe their managing organisations. The detailed composition of the DMS management body found from the website evaluations is illustrated in Table 4.1.

**Table 4.1. DMO Management Bodies from the Evaluated DMSs**

	<b>DMS Management</b>	<b>Number of DMSs</b>
<b>Government-affiliated organisations</b>	Government structural bodies	24
	Government-affiliated DMOs	13
<b>Non-government-related organisations</b>	Local tourism stakeholders' groups	2
	Private companies	4
	Private DMOs	6
<b>Unknown</b>		3
	Total	52

The analysis of functionalities found in the 52 DMSs looks to explore how these functionalities are used to develop DMS functions that can accommodate the elements that encourage the community to participate in tourism based on the Motivation–Opportunity–Ability (MOA) framework (Hung et al., 2011) (see Figure 2.1). The three dimensions of the MOA framework, motivation, opportunity and ability, are the overarching themes that guide the analysis of the DMS functionalities. This chapter presents findings on how these functions align with MOA frameworks. The inclusion of frequency data on some functions aims to contextualise their commonality and assess its adoption related to enabling MOA frameworks.

#### **4.1.1. Motivation Dimension in DMS**

The *motivation* dimension is translated as the driving factors that factors that encourage a community to participate in tourism (Bettiga et al., 2018; Hung et al., 2011; Jepson et al., 2013). From the evaluation of DMS functionalities accessible through the website, three themes emerge related to the motivation dimension. Those themes are “Economic benefit”, “Information about potential tourism benefits” and “Community acknowledgement”. These three themes of the motivation dimension were made up of eleven DMS functions. The themes and functions under the motivation dimension that emerged from the website evaluations are listed in Table 4.2. These themes can provide motivation elements as the antecedents of community participation and are described in more detail below.

**Table 4.2. DMS Functions for the Motivation Dimension**

Dimension	Theme	DMS Functions
Motivation	Economic benefits	<ul style="list-style-type: none"> <li>(1) Promotion of local tourism businesses</li> <li>(2) Promotion of local events</li> <li>(3) Promotion of community-managed tourism businesses</li> <li>(4) Tourism services directory</li> <li>(5) Tourism-related job opportunities</li> </ul>
	Information about potential tourism benefits	<ul style="list-style-type: none"> <li>(1) Tourism and website traffic statistics</li> <li>(2) Information about tourism awards</li> </ul>
	Community acknowledgement	<ul style="list-style-type: none"> <li>(1) Information about local history</li> <li>(2) Information about local culture</li> <li>(3) Information about local traditions and etiquette</li> <li>(4) Information about community members and groups</li> </ul>

**Theme One: Economic benefits**

The economic benefits theme refers to the DMS functions that can provide the destination community with better access to the economic benefits of tourism. The economic benefits theme comprises of the following five DMS functions: (1) promotion of local tourism businesses, (2) promotion of local events, (3) promotion of community-managed tourism businesses, (4) tourism services directory and (5) tourism-related job opportunities. The most dominant functions identified from the website evaluations was the promotion of local businesses and events. Only one destination website was found offering tourism-related job opportunities. A detailed description of each DMS function that emerged under the economic benefit theme is given in the following paragraphs.

(1) Promotion of local tourism businesses

This function, which refers to a web page featuring local tourism businesses, is a common function of DMSs (found in 43 of the 52 evaluated websites). Local tourism businesses are defined as service providers that are not affiliated with global corporations, such as restaurant franchises. Information about local tourism businesses includes the services they provide, contact details (including phone numbers and email addresses), website addresses, social network links (including social media) and physical addresses. Of all the evaluated websites that had a local business promotional page, only a few offered communication, booking or transactional functionalities in the page. Other ICT tools, such as a digital map giving the location of the businesses or multimedia applications such as video content, were minimal within the evaluated websites. Tourism businesses that appeared on the DMS promotional pages mainly promoted three types of services: accommodation, food and beverages, and tourist

attractions. Some destination websites added other businesses that provide a service that is unique to the tourism destination; examples include a meeting organiser on the Visit Azores website, shops that sell traditional products to promote local products on the Campbell River Travel and Great Barrier Island websites and promoting individual travel guides on the Stay Raja Ampat website.

### (2) Promotion of local events

This function encompasses content that details events occurring at the destination, which serve to represent the destination identity and potentially attract tourists. Some examples of local events found on the evaluated websites were traditional pop-up markets and cultural festivals. Content to promote local events is one of the dominant types of information found, with almost two-thirds of the evaluated websites (34 of 52) publishing the information. The local event promotional information commonly provides details such as a description of the event, and information about the time and place where the event is held. The page is intended to promote events as an attraction for tourists.

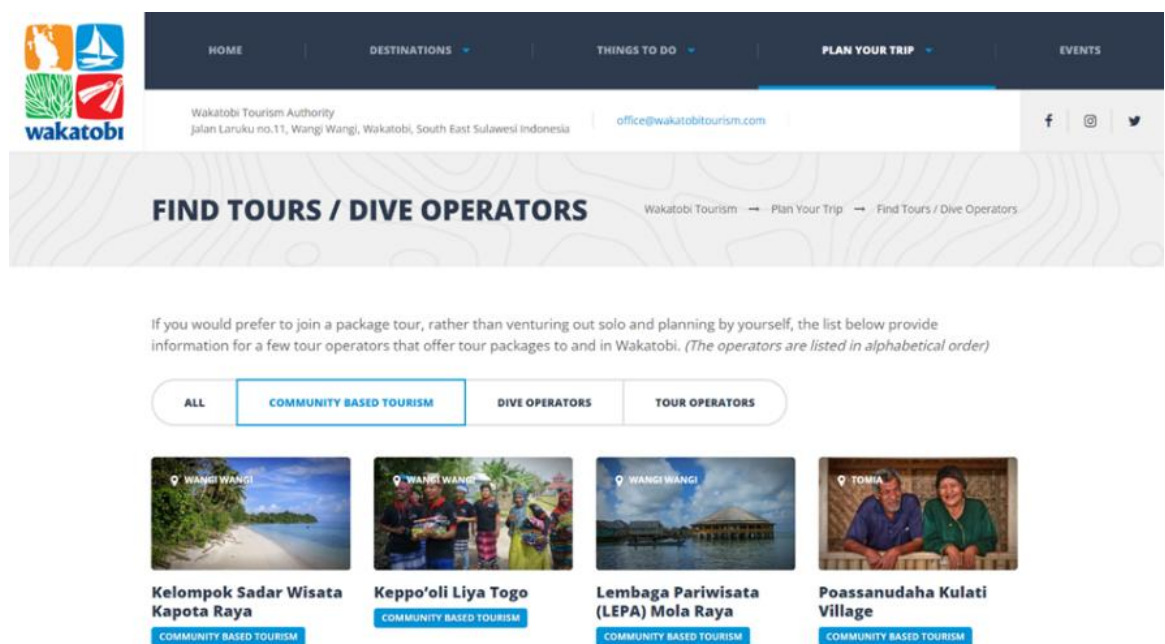
### (3) Promotion of community-managed tourism businesses

This function represents the promotional content for community or community group-owned tourism businesses. While locally owned businesses generally belong to an individual or family, community-managed tourism refers to businesses that are owned and operated by community groups, such as a local trust or equivalent, that provide tourism services. Only a handful (6 of 52) of the evaluated destination websites publish promotional content of tourism services or businesses that were operated by local community groups or that involved local community groups in their operation. The examples of promotional content of community-based tourism businesses found on the evaluated destination websites are the “Meaningful Trip” page of the Visit Jordan website, which promotes tourism activities that involve and intended to support local social enterprises; the Koh Yao website, which offers a tour that involves living with a local community which is also a Muslim minority community in Thailand; and the Wakatobi Tourism website, which provides an option of a tour package operated by rural community groups.

The Wakatobi Tourism website is an example of a website that promotes community-based tourism (CBT). Wakatobi is an islands region in Indonesia and part of Southeast Sulawesi Province. The Wakatobi Tourism website (<https://www.wakatobitourism.com>) provides a page (“Find Tours / Dive Operators”) that promotes tour operators and diving providers (see Figure 4.1). From this page, a page specifically for local CBT operators can be accessed via the “Community-Based Tourism” tab. The CBT page shows tour operators managed by the tourism community groups known as *Pokdarwis*, which are based in some villages in the region. Thus, the Wakatobi Tourism website provides a

specific page with a clear link (tab) that features CBT to distinguish community-based tourism operators from other tourism operators; this feature is one of the unique functions found among the evaluated websites.

A similar functionality can be found on the Sabah tourism website under the “Niche Market” category, which promotes meeting incentives, conference and exhibitions (MICE) operators and community-managed rural tourism packages. Each CBT initiative was provided with a promotional page that contained a range of tourism activities and services offerings, the CBT operator’s contact details (including phone numbers, social media and email addresses), a downloadable electronic brochure and a promotional video.



**Figure 4.1. Preview of Find Tours / Dive Operators Page on the Wakatobi Destination Website**

Source: [https://www.wakatobitourism.com/plan-trips/find-tours-dive-operators/#projects\\_widget-1-0-0-community-based-tourism](https://www.wakatobitourism.com/plan-trips/find-tours-dive-operators/#projects_widget-1-0-0-community-based-tourism), 2023.

#### (4) Tourism services directory

This category refers to the information on the destination website that informs the users about various services that support tourism activities. Unlike the local tourism businesses’ promotional pages, the directory is mostly simply a list of tourism services with only minimum information, such as a description of services offered and contact details. Services that are included in the directory include tourism businesses, tourist attractions and activities, and public services. Only seven of the evaluated 52 websites provide a tourism services directory. Visit Nara website’s travel directory page includes small-scale tourism-related businesses like homestays and local shopping markets, which are not often facilitated by DMSs with an individual promotional page. The tourism

services directory information mostly covers a greater variety of tourism services, whereas tourism businesses pages provide more detailed information on essential tourism businesses such as hotels, restaurants and tour operators.

#### (5) Tourism-related job opportunities

This final category under the economic benefits theme is related to the DMS functions that offer information about job vacancies from tourism businesses in the destination. A specific page for tourism-related job vacancies was found on only one of the 52 sites evaluated: the Destination Ann Arbor website. The “Job Listing” page, accessible via the “Workforce Development” category, offers current information regarding job openings in local businesses related to tourism. Additionally, the Destination Ann Arbor website featured a function on the Workforce Development page that allows users to apply for available job vacancies directly through the site by completing a form and uploading the necessary application materials. The Destination Ann Arbor website also offers “Job seeker” and “Employer Resources” pages on the Workforce Development page. The Job Seeker page publishes information on training and internship opportunities to help people improve their resumes, particularly in the tourism industry, while the Employer Resources page provides information about organisations that can help local employers with recruitment programmes, such as recruitment agencies or events and a pre-work mentorship consultant. Thus, Destination Ann Arbor is the sole website out of the 52 evaluated DMSs that has a particular focus on supporting the local tourism workforce and industry.

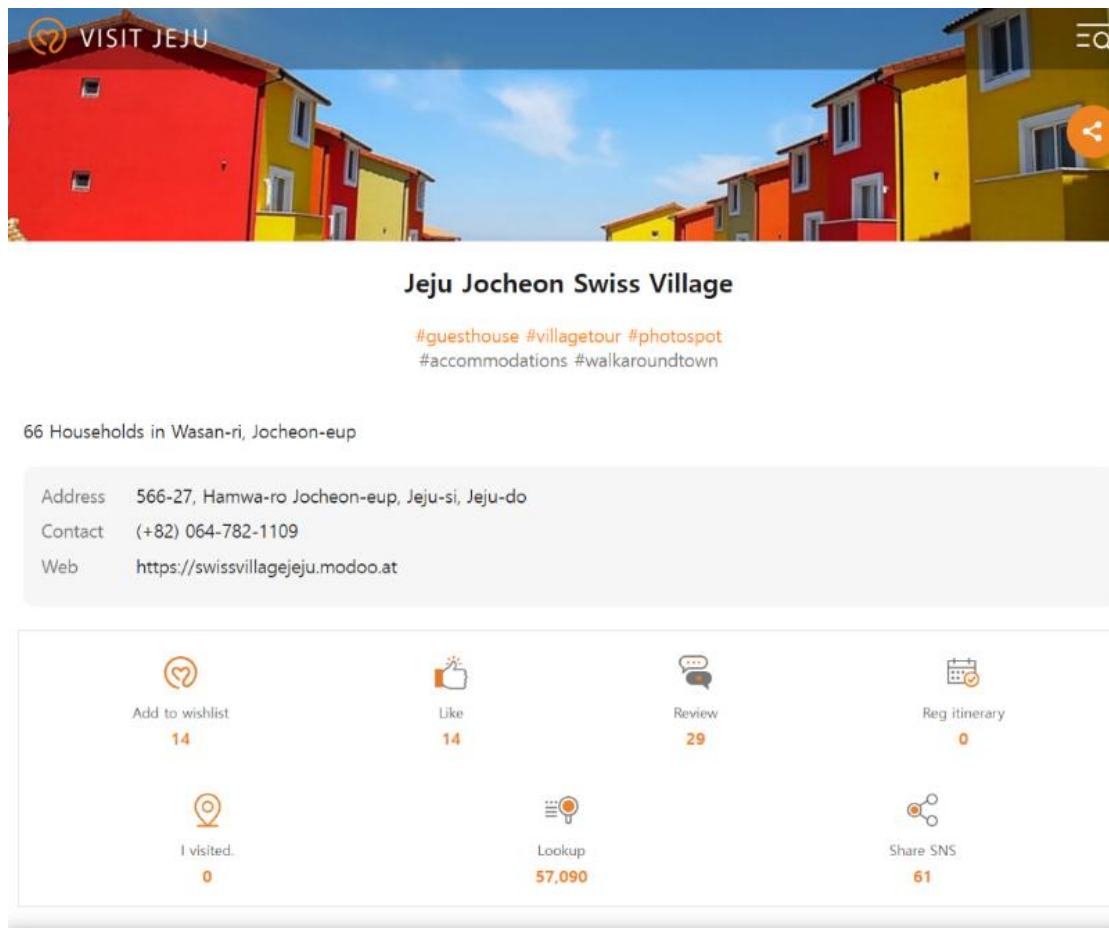
#### **Theme Two: Information about potential tourism benefits**

This theme refers to DMS information that demonstrates the positive impact of tourism on the destination (host) community. Tourism development is commonly associated with benefits such as economic growth, enhanced local infrastructure, and environmental conservation, although similar benefits may also arise from other sectors (Litheko & Potgieter, 2021). While these improvements benefit the local community, the contribution of tourism is sometimes underestimated. Hung et al. (2011) suggest that perceived tourism benefit is a strong motivator for community participation in tourism. Thus, bringing information about the positive benefits that tourism can contribute to destination development could encourage the local community to participate in tourism. Only six of the 52 evaluated websites, however, were found to be publishing information about tourism benefits. The website data found under this theme were grouped into two functions: (1) tourism and website traffic statistics, and (2) information on tourism awards. The two functions are explained in the following paragraphs.

### (1) Tourism and website traffic statistics

This category of DMS functions refers to the provision of tourism development statistics, which mostly contain an infographic of the number of visitors to the destination and traffic to the destination website. Tourism statistics provide information about the tourism industry at the destination mainly in the form of visitor numbers, length of stay and visitor expenditure. Only four of the 52 websites were providing information on tourism development statistics at the time of the evaluation.

Website traffic statistics, such as the number of visits to a website, is one indicator to measure the performance of the website. The website traffic statistics category of DMS functionalities was only evident on one destination website: Visit Jeju Island. The Visit Jeju Island destination website (<https://visitjeju.net/en/>) showcases an exemplary practice in providing information related to the website traffic statistics. Unlike other destination websites, the Jeju Island tourism website provides information on users' engagement with the pages that feature the tourism businesses promoted on the website in the form of the number of "look ups" (unique visits to each business's page on the website), user reviews, shares and "likes" on each business's page (see Figure 4.2). The Jeju Island website also provides a function to add the businesses featured on the website into the user's "wishlist" or "itinerary". The users can also add photos related to the tourism businesses featured on the page on their review. A user can also indicate that they have visited the tourism business in the destination.



**Figure 4.2. Jeju Jocheon Swiss Village Page on the Jeju Island Destination Website**

Source: [https://m.visitjeju.net/en/detail/view?contentsid=CNTS\\_000000000018464&menuId=DOM\\_700000000010779#](https://m.visitjeju.net/en/detail/view?contentsid=CNTS_000000000018464&menuId=DOM_700000000010779#), 2023.

The Jeju Island website demonstrates the use of website traffic statistics, whereas the Travel Oregon website (<https://www.traveloregon.com>) illustrates the function of disseminating information regarding the tourism industry’s impact on the destination’s economy. Overall tourism contribution information is presented on the “Travel Industry” page (<https://industry.traveloregon.com/>), which is part of the Travel Oregon website. Figure 4.3 shows aspects of the Travel Industry page that provide an overview of core tourism statistics (visitor expenditure, tax revenue and job creation). The detailed report on the economic impact of tourism in Oregon state to year-end 2022 is downloadable from the Travel Industry main page.



**Figure 4.3. Industry Page on the Travel Oregon Destination Website**

Source: <https://industry.traveloregon.com/>, 2023.

The Travel Industry page contains information to encourage Oregon tourism stakeholders to contribute to the development of the Oregon tourism industry through membership of the DMO. It presents critical statistics on the economic impact of tourism, highlighting its positive effects on Oregon's economy. This information aims to provide local tourism stakeholders with insights into the economic opportunities available in the region. Additionally, the page links to relevant strategies, plans and funding opportunities for stakeholders engaged in the DMO membership programme. This programme offers incentives to local stakeholders, enhancing their chances of benefiting from tourism development and acquiring a share of tourism-related advantages.

## (2) Information about tourism awards

This category refers to the DMS functions that relay information on recognised awards achieved by tourism stakeholders and/or the destination. Tourism awards signify the benefit of the local tourism industry to the destination by receiving appreciation from external groups for the destination or its stakeholders. The information about tourism awards showcases achievement given to the destination from major tourism bodies. At the time of the evaluation, only two of the 52 websites – the Visit Azores and Palau Visitor’s Authority destination websites – were providing a specific page or links to showcase the awards received by the destination.

### **Theme Three: Acknowledgement**

The acknowledgement theme, associated with the motivational component of the MOA model, pertains to website content that demonstrates the destination authority’s recognition and appreciation of the local community’s culture, traditions and values. This recognition is crucial for enhancing the destination’s value and fostering a positive connection with the community. Content related to this theme was found in just over half of the evaluated destination websites and is made up of four functions: (1) information about local history, (2) information about local culture, (3) information about local traditions and etiquette, and (4) information about community members and groups. The DMS function related to (4) information about community members and groups is the least adopted function of the evaluated destination website. The following paragraphs provide a detailed description of each of the four functions under the Acknowledgement theme identified on the 52 destination websites.

#### (1) Information about local history

This category refers to any information on the destination website about the geography and local history of the destination, particularly content related to the ethnicity of the local community or Indigenous culture, where applicable. Content about local history associated with the destination was found in half of the evaluated websites. The presentation of local history, particularly community or ethnic history, can contribute to creating a destination’s value by providing a unique identity to the region (Caprioli et al., 2021).

#### (2) Information about local culture

The second category under the Acknowledgement theme refers to DMS content that highlights local architecture, traditional attire, cuisine and ceremonial events. Culture is recognised as a distinct feature that adds value to a destination (Ma et al., 2021). This category focuses on material culture, which includes specific tools, processes and technologies passed down through generations (Ma et al., 2021). Twenty of the 52

websites evaluated provided information about local culture. This information was typically featured on the homepage or on a designated page introducing the destination.

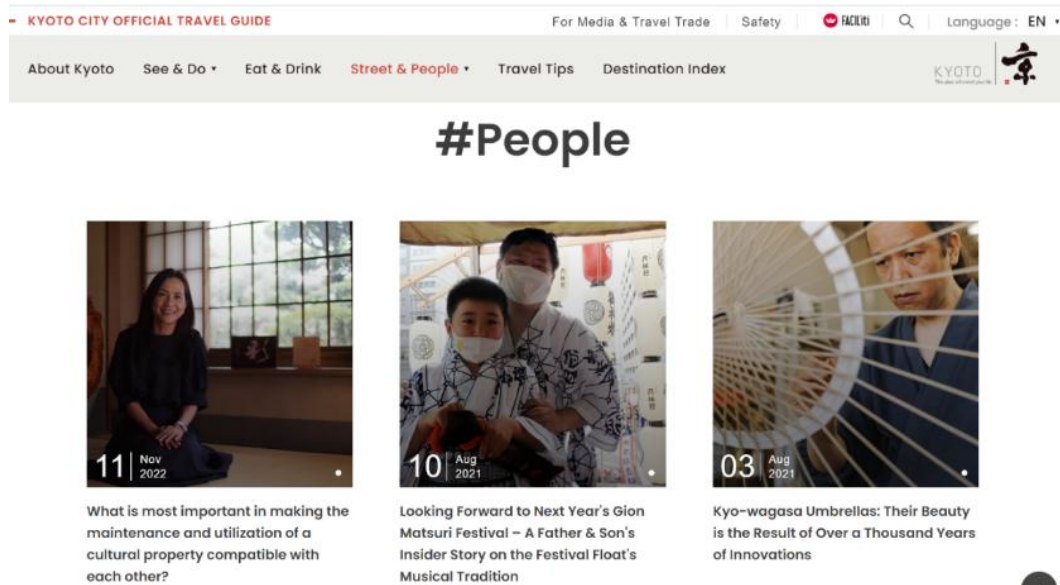
### (3) Information about local traditions and etiquette

The third category under the Acknowledgement theme refers to DMS functions that inform users about the unwritten rules, or “norms”, embedded in the local community’s daily activities. These include modes of expression, values, traditions and proper etiquette for interacting with locals and their environment. Traditions and etiquette foster an institutional and spiritual culture that is practised daily by local communities. On destination websites, information about local traditions and etiquette is often presented as “do’s” and “don’ts” for tourists. For example, the destination website for Luang Prabang (TourismLuangPrabang.org) publishes information about appropriate etiquette when entering a Buddhist temple and interacting with the monks. Likewise, the destination website for Ataúro Island contains information about local tourism traditions and etiquette on its “Sustainable Traveller Pledge” page(<https://ataurotourism.org/plan-your-trip/traveler-pledge/>). This page provides information on the code of conduct for tourists to follow when visiting Ataúro Island in the form of ten visitor pledges, which focus on respecting local people and their traditions, as well as local resources and the natural environment. The pledges allow the visitor to acknowledge and respect the local community tradition when engaging in tourism activities on Ataúro Island. However, content under this category was evident on less than a third (15 of 52) of the evaluated destination websites.

### (4) Information about local community members and groups

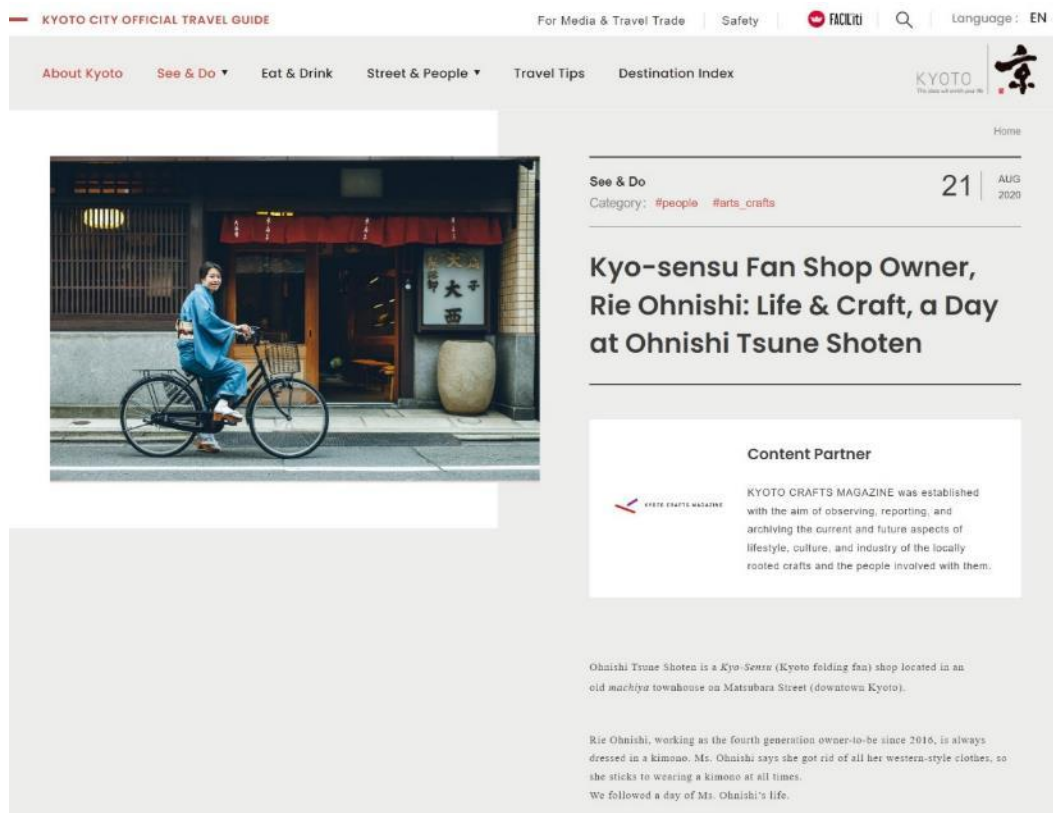
This category refers to content that presents information about local community members or highlights contributions by community groups to the development of tourism at the destination. This type of content demonstrates an appreciation from the DMS management body of the local community for their role in developing the local tourism industry. However, very few (just 3 out of 52) of the evaluated destination websites feature information about local community members and groups. The Kyoto City Official Travel Guide destination website (<https://kyoto.travel/en/>) is one of the websites that promotes its local community as a significant component of the tourism destination. The “People” page from the Kyoto website introduces vital members of the Kyoto community who contribute to fostering the city’s cultural identity and as a tourism destination (see Figure 4.4). The preview highlights the story of Rie Ohnishi, a fourth-generation owner of the Kyo-sensu Fan Shop. The content narrates her life story and dedication to preserving Kyoto’s traditional culture. Rie resigned from her previous career to focus on managing her family business and committed to wearing a kimono every day as part of

her efforts to foster a cultural atmosphere in the city. Figure 4.5 illustrates the preview of the web page on the Kyoto Official Travel Guide website that features Rie’s story.



**Figure 4.4. Preview of the People Page on the Kyoto City Official Travel Guide Destination Website**

Source: <https://kyoto.travel/en/>, 2023.



**Figure 4.5. Preview of the Kyo-sensu Fan Shop Owner Page on the Kyoto City Official Travel Guide Destination Website**

Source: <https://kyoto.travel/en/see-and-do/rieohnishi.html>, 2023.

A story on the destination website about a community member who contributes to the local development of tourism at the destination can be a way for the DMO to acknowledge local community members for their contribution to their community. In the case of the Kyu-sensu Fan Shop owner, if the website had not provided such information, the dedication of Rie Ohnisi would not be recognised, and she would likely receive very little appreciation from the community.

In summary, the evaluation of the 52 tourism destination websites identified several aspects of the DMS that can *motivate* community to participate in local tourism development. The emerging themes suggest that a DMS can provide motivational factors by promoting local businesses, services, events and job opportunities to bring economic benefits of tourism more accessible to the community, sharing information that demonstrates the positive benefits that tourism can bring to the local community, and by acknowledging the community's contributions to tourism at the destination. The website evaluations also found that the motivational elements of community participation antecedents in the MOA framework are primarily delivered through DMS information functionalities using one-way communication. Interactive communication functionalities, such as transactional features, are underutilised, limiting opportunities for more dynamic engagement.

#### **4.1.2. Opportunity Dimension in DMS**

The second dimension of the MOA framework is opportunity, which refers to a situation that enables the community to engage in the development process. In the DMS context, the *opportunity* element of community participation is seen as the channel or medium for the community to engage with and/or contribute to local tourism. The website evaluations identified four themes of DMS functions that have the capacity to enable opportunity elements for the local community to engage in tourism. Those themes are “Channels for the community to contribute to the DMS content creation”, “Communication channels between host communities and DMO”, “Information on tourism programmes for the community”, and “Communication tools to foster interaction between destination communities and potential tourists”. The most prevalent theme related to the opportunity dimension is channels for the community to contribute to the DMS content creation, which was found in 21 of the 52 evaluated destination websites. In contrast, only two websites applied communication tools to foster interaction between destination communities and potential tourists in their functions, making this the least adopted theme. The DMS functions, with their associated themes, that can enable the opportunity dimension are displayed in Table 4.3.

**Table 4.3. DMS Functions for the Opportunity Dimension**

Dimension	Themes	DMS Functions
<b>Opportunity</b>	Channels for the community to contribute to the DMS content creation	<ol style="list-style-type: none"> <li>(1) Social media promotional content</li> <li>(2) Community-authored promotional blog(s)</li> <li>(3) Function to add tourism events on the website</li> <li>(4) Function to add tourism businesses' information on the website</li> </ol>
	Communication channels between host communities and DMO	<ol style="list-style-type: none"> <li>(1) Messaging, chat and comment functions</li> </ol>
	Information on tourism programmes for the community	<ol style="list-style-type: none"> <li>(1) Information about tourism volunteering programmes</li> <li>(2) Tourism-related competitions</li> <li>(3) Donations for tourism development</li> <li>(4) Tourism destination ambassador programmes</li> </ol>
	Communication tools to foster interaction between destination communities and potential tourists	<ol style="list-style-type: none"> <li>(1) Discussion forum for communication between tourists and community members.</li> </ol>

**Theme One: Channels for the community to contribute to the DMS content creation**

This theme refers to the website functions that provide a tool for the community to engage and contribute directly to the content production of destination website, providing an avenue for the community to participate in tourism in the destination. The channel for the community to contribute to visitor information presented through the DMS comprises four DMS functions: (1) social media promotional content, (2) community authored promotional blog(s) (3) function to add tourism events on the website, and (4) function to add tourism business information on the website. Of the four functions, social media promotional content, and promotional blogs authored by community members are the most common, being found in 13 and 12 of the evaluated destination websites, respectively. Conversely, a function to add tourism business information on the website category of DMS was found on only two of the 52 evaluated destination websites. A detailed description of each function that emerged under the channel for the community to contribute to the DMS content creation theme is given in the following paragraphs.

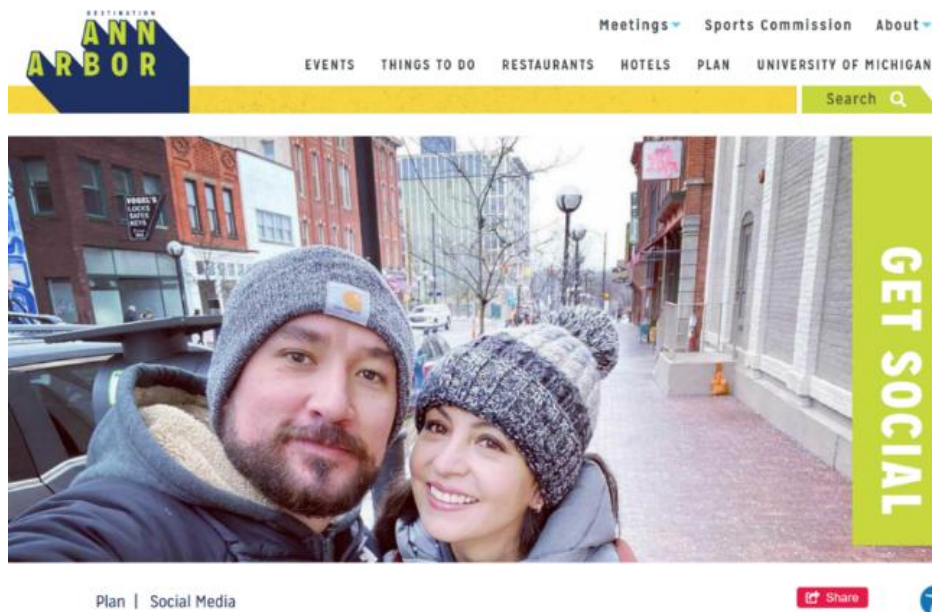
(1) Social media promotional content

This category refers to the promotional content on the destination website sourced from DMS users' social media content that is broadcasted through the website. The content of the social media posts includes tourism activities and destination-related photos and their captions. Social media users usually have to include a hashtag in the social media

post for it to be considered to appear on the destination website. The social media promotion function provides an avenue for tourism stakeholders, including the host community, to be involved in the marketing operation of the DMS.

Embedding community social media content for tourism marketing involves several DMS functionalities, including information and relationship functionalities. Unlike the relationship functionalities that focus on prospective tourists as the main users, as discussed by Benckendorff et al. (2019) and Estêvão et al. (2020a), in social media-embedded promotional content, the relationship dimension concentrates on building engagement with broader tourism stakeholders including local communities. The guidelines regulating the process of contributing content to the website via social media are similar to the terms and conditions that characterises the relationship dimension of DMS functionality. In this context, the use of hashtags serves as an implicit agreement for individuals who consent to have their social media posts featured on the DMS page. These guidelines, or terms and conditions, are generally outlined on the same DMS page.

The Destination Ann Arbor website (<https://www.annarbor.org/>) provides an example of the adoption of the social media promotional content category. The Destination Ann Arbor website provides a page for social media promotional content (see Figure 4.6). The main content on the social media page of the Ann Arbor tourism website is the thumbnails of social media posts of the local community and visitors. Unlike other websites that presented social media promotional content, the Ann Arbor website clearly asserts that the source of social media posts is visitors and the local community. The page also provides information and a link to the website users who want to participate in providing social media content to be published on the social media page.



**Figure 4.6. Preview of The Social Media Page on the Ann Arbor Destination Website**

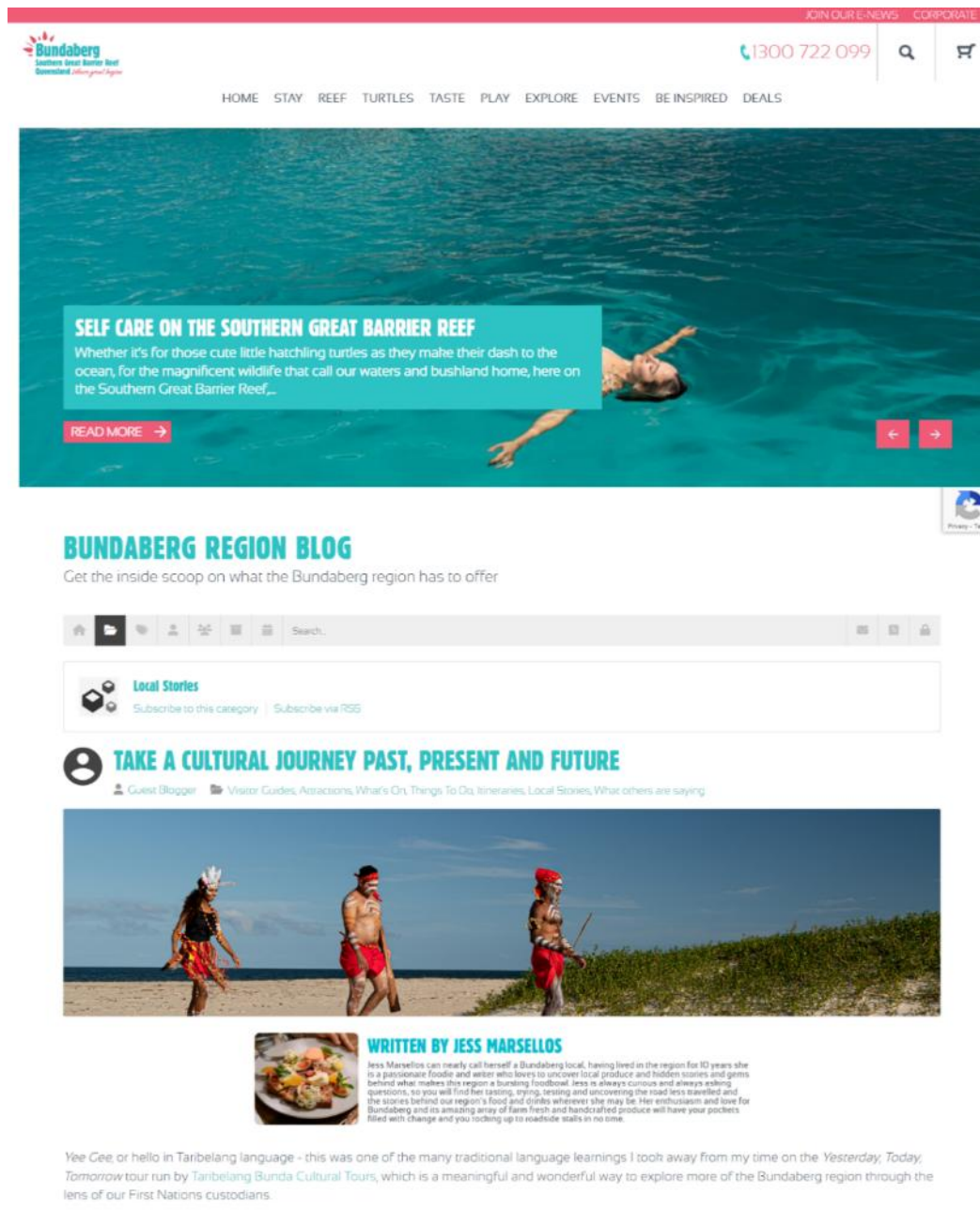
Source: <https://www.annarbor.org/plan/social/>, 2023.

(2) Promotional blogs authored by community members

This second category represents promotional content created by local community members in the form of informal blog-style writings. However, only a small number (12 out of 52) of the evaluated destination websites provide opportunities for the local community to contribute to DMS content. In many cases, DMS platforms invite community members to submit blogs, which are then assessed by the DMS operator

before being selected for publication. Consequently, only a limited number of community members can see their blogs featured on the website. Despite this, the DMS functions in this category provide a pathway for local community participation in DMS operations.

One example is found in the Bundaberg Region destination website (<https://www.bundabergregion.org/>). The “Be Inspired” tab on the homepage links to a Bundaberg region blog webpage. The blogs hosted on the page were written by various authors, including Bundaberg Tourism (the DMO), a local media partner and a guest blogger. Bundaberg tourism blog content presents visitor guides, information about sustainable tourism projects, and Bundaberg tourism products and services, including activities, culinary and attractions. An example of a community-produced blog featured on the Bundaberg destination blog webpage is illustrated in Figure 4.7. This blog, authored by Jess Marsellos, a Bundaberg resident and passionate foodie, explores the Taribelang language, which is a significant aspect of the local cultural heritage.



**Figure 4.7. Preview of the Bundaberg Region Blog Page on the Bundaberg Region Website**

Source: <https://www.bundabergregion.org/stories/local-stories>, 2023.

### (3) Function to add tourism events on the website

The third category refers to the function on the website that enable users to suggest local events to feature on the destination website. Local events often become a feature that can attract tourists to a destination. However, destination websites mostly only capture hallmark annual events such as a region's anniversary festival while many small local events, such as the traditional celebrations of agricultural harvests, are not prominently observed. Traditional events embody local wisdom, reflecting the collective knowledge ingrained within the community. Consequently, engaging the community in promoting

these traditional events at the destination is essential. Four of the 52 evaluated tourism destination websites provide a function that enables the website users, including the local community, to recommend tourism-related local events information to feature on the website.

#### (4) Function to add tourism business information on the website

The final category refers to the function of the DMS that allow locally owned businesses to register and be featured on the website. Providing an opportunity for tourism businesses to have a presence on destination websites helps them access the economic benefits of tourism; however, in many cases, the information for businesses to register and appear on destination websites is limited. A couple of the evaluated destination websites provide an online form or detailed information for a local tourism business to apply to have their tourism services feature on the destination website.

### **Theme Two: Communication channels between host communities and DMO**

This theme refers to the destination website's functions that allows the local community to communicate interactively with the website operator, which is often also the authoritative body of the destination area. This function is applied through the traditional message-based or real-time communication tool embedded on the website. Only one functional category emerged from the evaluation of this theme: messaging, chat and comment. Communication channels that enabled messaging, chat and comment were found on 16 of the 52 evaluated destination websites.

#### (1) Messaging, chat and comment

This is the only category under the communication channels between host communities and DMO theme and refers to the DMS function that provide website users with embedded communication channels on the website to communicate interactively with its operator. Most of the websites have a contact page with information on how to contact the managing organisation of the DMS, with an address, email and phone numbers provided on the website. However, some websites have a direct communication tool on the website, like a messaging form, live chat and/or a comment box. This tool enables website users to submit their queries to the destination authority via the website. This direct communication tool addresses one of the leading tourism participation challenges: communication between tourism stakeholders, particularly between the local community and the destination authority. The website evaluation process captured some of websites that provide a tool that facilitates communication between website users and the DMO. The Visit Jeju Island website (<https://www.visitjeju.net/en>) is notable because it is the only one of the 52 evaluated websites that has an online chat function. This online chat function provides direct synchronised communication to the Jeju Tourist Information

Centre. However, the online chat function is only active during the information centre's opening hours, and so is not always available.

### **Theme Three: Information on tourism programmes for the community**

The third theme under the opportunity dimension encompasses content on destination websites that informs the local community about tourism activities in which they can participate. Such information facilitates community access to opportunities for involvement in local tourism programmes. Although some tourism activities presented on a destination website may primarily target visitors, local community members can also access this information and participate in tourism activities. DMS functions under this theme were adopted by nine of the 52 evaluated websites. This theme comprises four functions: (1) information about tourism volunteering programmes, (2) tourism-related competitions, (3) donations for tourism development, and (4) tourism destination ambassador programmes. Information about tourism volunteering programmes is the most prevalent of the four functions, featuring on six of the 52 evaluated websites. The following paragraphs provide a detailed description of each category within this theme.

#### (1) Information about tourism volunteering programmes

This category refers to the DMS content that promotes tourism-related volunteering programmes, which destination website users, including the community, can access. Some volunteer programmes found on the evaluated website are the press trip for social media influencer, organising cultural events and conservation volunteer programme. The information about volunteer programmes published on the website can significantly facilitate community involvement in local tourism activities by publicising volunteer opportunities. This information is also accessible to other users, such as tourists, making it challenging to distinguish the intended target audience. However, the nature of the volunteer programmes can provide some differentiation; for instance, programmes focused on organising cultural events are more likely to involve local community members rather than visitors.

#### (2) Tourism-related competitions

The second category represents content on the destination website that promotes tourism-related competitions that DMS users can participate in. While most of the information on destination websites focuses on providing visitors with information about tourism-related services and products in the destination, a few of the evaluated websites also published some information related to the local community; for example, notification of a competition arranged by the tourism authority. Ensuring the community has information about tourism programmes means the community can engage in local tourism development by being directly involved in tourism activities such as local tourism-

related competitions. The Fernie British Columbia destination website is one of the evaluated websites that publishes content on tourism-related competitions. The “Contests” page of the Fernie website (<https://tourismfernie.com/contest>) provides information about available tourism-related competitions that the users can access. The Contests page also provides a function to share information about the page through the user’s social media account.

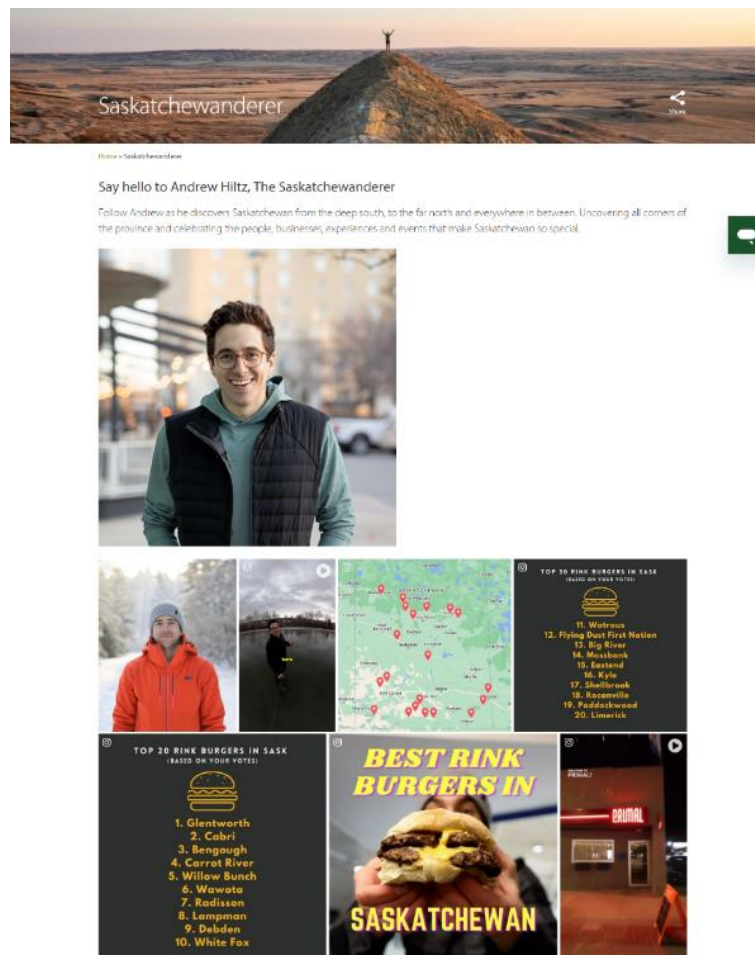
### (3) Donations for tourism development

The donations category refers to the information published by the DMS about opportunities to donate and fund DMO operations. In rare cases, the authoritative body of the tourism destination raises a donation from tourism stakeholders to fund their operation. The website’s information on donations for tourism development allows local tourism stakeholders, including the community, to be better informed about the donation programmes and have a channel to contribute financially to local tourism development.

### (4) Tourism destination ambassador programmes

This last category relates to DMO programmes that collaborate with the local community to promote the region as a tourism destination. In the destination ambassador programme, the destination authority offers a chance for the community to promote their home region as a tourism destination. In rare cases, the DMO invites the community to become involved in the tourism ambassadors programme by informing them of the recruitment process for the programme through the destination website, ensuring the programme is publicised.

As an example, the Tourism Saskatchewan destination website (<https://www.tourismsaskatchewan.com/>) provides a webpage for an ambassador programme labelled “the Saskatchewanderer”. Figure 4.8 shows a preview of the “Saskatchewanderer” page, which displays the tourism ambassador and a thumbnail of his activities, which are sourced from the ambassador’s social media. The page also provides links to the ambassador’s social media accounts.



**Figure 4.8. Preview of the Saskatchewanwanderer Page on the Tourism Saskatchewan Destination Website**

Source: <https://www.tourismsaskatchewan.com/saskatchewanwanderer>, 2023.

#### **Theme Four: Communication tools to foster interaction between destination communities and potential tourists**

The fourth and final theme relates to the DMS functions that facilitate tourists and local community communication. A community can participate in tourism by positively engaging with the tourists. Two destination websites provide a function for the community to communicate and help answer potential tourists' enquiries about the destination. Communication tools to foster interaction between destination communities and potential tourists is adopted in the DMS as a discussion forum for tourists and community members.

##### **(1) Discussion forum for communication between tourists and community members**

The discussion forum category is the only category under the communication tools to foster interaction between destination communities and potential tourists. It refers to the DMS function that provide an interactive communication channel for community members and potential tourists. Only a few of the evaluated websites provide a function

for the community to communicate directly with potential tourists. In the rare case where the function is provided, the local community engages with tourists by providing a recommendation on the activities around the destination area, often related to information that is not mentioned on the website, like contact person for certain services, local transportation schedule, or even recommended tourism services.

Travel Oregon (<https://www.traveloregon.com>) provides a forum for communication between tourists and community members. Travel Oregon's website facilitates tourists and local community communication on the "Ask Oregon" page as part of the trip planning section of the site (the "Plan Your Trip" tab), as illustrated in Figure 4.9. This example consists of an online form where tourists can ask questions, and members of the local community can respond. The page also shows some examples of the answers provided by Oregon's community to address the tourists' questions. However, from the examples of the community's responses shown on the page, only selected community members who can actively respond to the tourist inquiry can be identified. This indicates that only some members of the community are allowed to participate in this communication forum.

The Opportunity dimension in the MOA framework can be seen as a tool to address the practical challenges of community participation, particularly identified in developing countries. Thus, the DMS functions associated with the opportunity dimension are heavily related to the facilitation of the local community to participate in local tourism development. While opportunity-related functions offer or promote a medium for local community to participate in tourism, the ability dimension help community capability in taking advantage of the opportunity functions.



# ASK OREGON

You have questions, Oregonians will answer.

Oregon is one of a kind: a place where you can hike to a scenic vista, then eat a farm-to-table meal; a place filled with scenic bikeways and Wild and Scenic Rivers; a place we're lucky to call home. To help you have an authentic Oregon experience, we're here to help answer your questions.

## BROWSE ASK OREGON Q&AS

VIEW

### Do we need 4WD for our visit to Central Oregon in February?

I would suggest renting a 4-wheel- or all-wheel-drive vehicle because Central Oregon usually gets quite a bit of snow. One good thing is that the roads will usually be either snow covered (which isn't difficult to drive in if you take your time) or completely clear because they de-ice and plow pretty frequently. Here is...



**Erin O'Connor**  
General Travel Expert

### What remote areas of Oregon should we explore?

Have you spent any time east of Bend or in the Oregon Outback area? These are some of my favorite places in the state. The China Hat/Four Corners area south and east of Bend is terrific for dirt bike riding, etc. Some amazing views out there of the high desert and the Cascade Range. Bend...



**Kim Cooper Findling**  
Central Oregon Expert

### For our honeymoon in Bend, where should we visit?

## ASK A QUESTION

You can also pose questions to Ask Oregon on [Facebook](#) or [Twitter](#) (use the hashtag #askOR)

Name

Email

Interest Area

What's your question?

CAPTCHA

Figure 4.9. Preview of the Ask Oregon Page on the Travel Oregon Destination Website

Source: [https://traveloregon.com/plan-your-trip/ask-oregon/?ask\\_oregon\\_topic=12](https://traveloregon.com/plan-your-trip/ask-oregon/?ask_oregon_topic=12), 2023.

### 4.1.3. Ability Dimension in DMS

The third dimension of the MOA framework is ability, which pertains to the resources necessary for the community to participate in tourism and effectively access its benefits (Timothy, 2002; Bahaire & Elliott-White, 1999). In the context of community participation, *ability* encompasses community awareness of local tourism development, knowledge, experience, skills, accessibility to information and financial resources (Jepson et al., 2014). The website evaluation process identified three themes of DMS functions that facilitate the ability dimension of community participation in tourism development: “Awareness of local tourism development”, “Community capacity building”, and “Certification”. Of these, awareness of tourism development theme was the most prevalent theme, being found in 29 of the 52 evaluated websites. In contrast, the themes related to community capacity building and certification were only found in six and three websites, respectively. Table 4.4 presents the themes and DMS functions under the ability dimension that emerged from the website evaluations.

**Table 4.4. DMS Functions for the Ability Dimension**

Dimension	Themes	DMS Functions
<b>Ability</b>	Awareness of local tourism development	(1) Local tourism-related news (2) Information about sustainable tourism projects (3) Information about tourism destination development strategies and programmes (4) Online reviews
	Community capacity building	(1) Tourism-related training and workshops (2) Membership benefits (3) Guidelines to write promotional content
	Certification	(1) Tourism product certification

#### **Theme One: Awareness of Local Tourism Development**

The first theme under the ability dimension refers to the website functions that provide the local community with information about local tourism issues and development. Information related to local tourism development and issues, either positive or negative, gives the local community an insight that allows them to understand the state of tourism development in the destination. The community can use this insight to participate in tourism in a more effective way. Knowledge of tourism development in the ability dimension is one of the resources that enables community to be involved in local tourism management, including in the planning phase. The content identified from the website evaluations that related to the awareness of local tourism development theme falls under

four DMS functions: (1) local tourism-related news, (2) information about sustainable tourism projects, (3) information about tourism destination development strategies and programmes, and (4) online reviews. Of the four DMS functions identified from the website evaluations, local tourism-related news was the most prevalent, being found on 22 of the 52 destination websites. Conversely, an online reviews function was found on only one destination website, making this the least prevalent category under the awareness of local tourism development theme. A detailed description of each of the DMS functions that emerged from the website evaluations under the awareness of local tourism development theme is given in the following paragraphs.

(1) Local tourism-related news

This function refers to the information about the latest situations and issues around local tourism development on the destination website, sourced from local tourism authorities and the press. Information related to the local tourism-related news category focuses on the coverage around the latest situation in the destination area that affects local tourism activity and local tourism issues raised by tourism stakeholders, which are reported by the media and, in some cases, by the destination authority as a press release. The information on local tourism development, particularly local tourism issues, provides the local community with the resources to raise their concerns about tourism planning and the opportunity to access tourism benefits.

(2) Information about sustainable tourism projects

This second function represents the publication of information about local sustainable tourism projects, including strategies and initiatives. Content under this category includes information on various sustainable tourism projects and programmes in which tourists and the local community could participate. Thirteen of the 52 evaluated websites had information about sustainable tourism projects. A sustainable tourism campaign can raise the awareness of both tourists and the local community about destination sustainability and contribute to local tourism sustainable projects.

The Caitlins destination website (<https://www.caitlins.org.nz/>) is an example of how to provide information about sustainable tourism projects. The website provides a downloadable electronic brochure titled “Care Code” on its home page. Figure 4.10 is the DMO’s suggested code of conduct for tourists to travel responsibly in the Caitlins. The e-brochure contains information on wildlife and nature conservation, responsible camping and travel, including driving, and waste management practices. The Care Code can help guide tourists to engage responsibly with tourism activities in the Caitlins. A responsible tourism code such as this can also encourage the local community to be aware of the local sustainability issues and help endorse the DMO’s practices,

particularly in conserving wildlife and the environment, and imposing responsible camping and waste management practices.



**Figure 4.10. Preview of The Car Code E-brochure on The Caitlins Destination Website**

Source: <https://www.caitlins.org.nz/assets/Uploads/FINAL-30-10-23-Caitlins-Coast-Inc-Care-Code.pdf>, 2023.

The Caitlins destination website also has a “Community” tab. This tab links to a page that hosts information about “Our Stories” (local community history), as well as local essential services, locally owned businesses, and a newsletter that inform users about recent local issues and events such as social sports schedules. The community page of the Caitlins website is noteworthy because it provides information that addresses both community and visitor needs.

### (3) Information about tourism destination development strategies and programmes

The third function refers to the content published by a destination website that covers general tourism strategies and programmes, including ad hoc programmes to address the latest issues in the destination, such as hazards and disasters that can disrupt local activities, including tourism. Eight of the 52 evaluated destination websites had published content related to information about tourism destination development strategies and programmes. Content is commonly focused on providing information about the vision and mission of tourism development in the destination, tourism programmes such as conservation projects, marketing programmes, and (at the time of the evaluation) COVID-19 response initiatives. The content about tourism development strategies and programmes provides the local community with information that enable them to be effectively involved in tourism planning by formulating, monitoring and evaluating tourism

programmes. For communities that are actively involved in tourism, including tourism businesses and service providers, information about tourism programmes and policies like COVID-19 response initiatives can guide them on how to operate responsibly and in alignment with local tourism programmes.

#### (4) Online reviews

The final function refers to content on the DMS website that shows tourists' feedback on tourism services and facilities in the destination. The Jeju Island Tourism website was the only one of the 52 evaluated websites that provides users with a function to write their feedback on tourism services. The Jeju Island Tourism website is made visible to both tourists and service providers, for purchasing and evaluating purposes, respectively. Although Jeju Island Tourism was the only website with an online visitor review function, some of the other evaluated websites host a link to a third-party website that has a function for posting online reviews of the destination tourism services. The reviews posted by tourists for tourism services in the destination provide tourism businesses with customer views on the services they use, and those views are a source of information that can be used to improve the competitiveness of services provided.

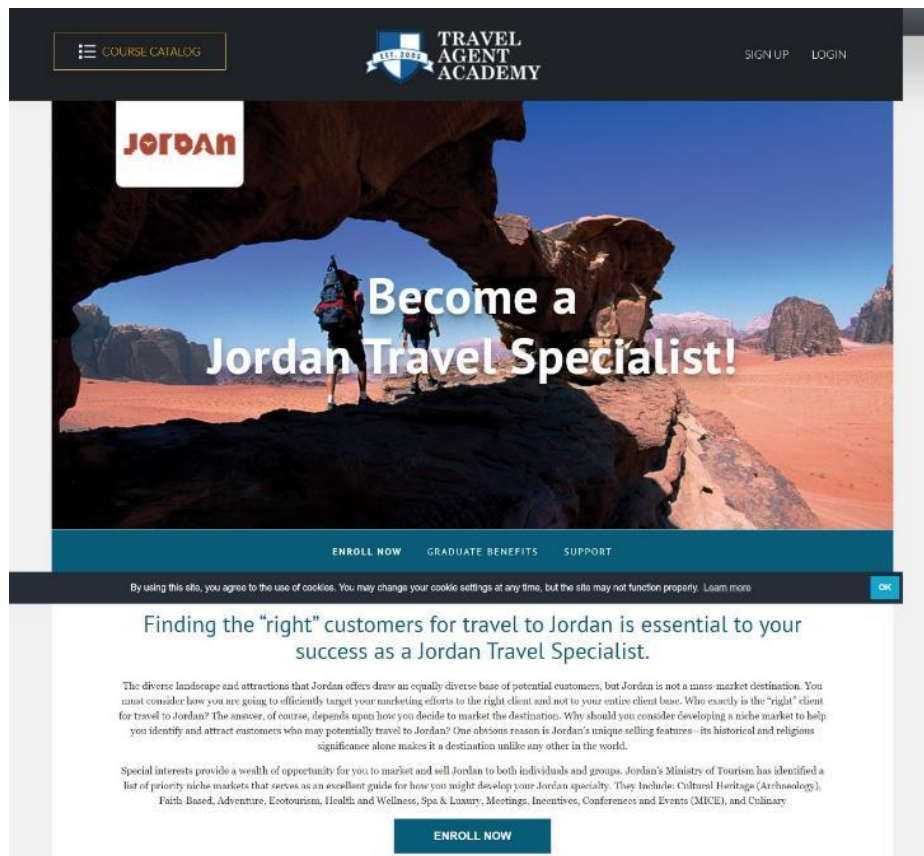
### **Theme Two: Community Capacity Building**

The second theme under the ability dimension represents DMS functions that help improve community capability to participate in tourism by improving skills and business acumen amongst community members. However, capacity-building related functions are not common on most destination websites – it was found on only six of the 52 evaluated websites. The community capacity building theme consists of three DMS functions: (1) tourism-related training and workshop, (2) membership benefits, and (3) guidelines to write promotional content. The membership benefits category of the DMS functions is the least adopted by the evaluated destination websites – it was found on only one of the 52 evaluated websites (Travel Oregon). The other two community capacity building functions were also poorly represented, with each appearing on only three of the 52 evaluated websites.

#### (1) Tourism-related training and workshops

This first function refers to DMS that provide local tourism stakeholders with online tourism training or workshops or information on available tourism-related training courses in the destination. Only three of the 52 evaluated destination websites provide information about tourism-related training and workshops, and of these, only the Visit Jordan destination website provides online training courses for local stakeholders who are interested in taking a career path as a local tourist guide.

The Visit Jordan website (<https://international.visitjordan.com/>) provides online training courses which are outsourced to a third-party web-based platform. The Visit Jordan website hosts a link to the Travel Agent Academy website, an online travel agency training provider. Figure 4.11 shows the Travel Agent Academy's Jordan course page, which includes a link to enrol in the course. The page also briefly introduces the Destination Jordan travel agent course.



**Figure 4.11. Preview of the Jordan Travel Agent Course Page on the Travel Agent Academy Website**

Source: <https://www.travelagentacademy.com/jordan/>, 2023.

## (2) Membership benefits

The second function refers to the DMS that offer information about DMO programmes that are designed to facilitate local tourism stakeholder engagement through a membership programme. Many DMOs offer a membership programme which extends benefits and opportunities to members that go beyond simply featuring on the destination website. These include training and workshops, incentive opportunities, features on the website and at other tourism events, and local tourism market information. Being a registered member of the local tourism organisation can provide local tourism businesses with various capacity improvement programmes and insights that can improve their capabilities and access to tourism markets. While membership programmes allow local business owners the opportunity to strengthen ties with and/or participate in tourism,

these opportunities are not always accessible to other members of communities. Nevertheless, membership programs can help improve the competitiveness of local businesses in the destination.

### (3) Guidelines to write promotional content

The third function refers to guidelines that are housed on a DMS that inform users, particularly local tourism stakeholders, on ways to improve destination promotional content writing. A few destination websites provide guidelines to assist business owners and community members in writing promotional material for promotional pages and blogs on the destination website. The guideline content mainly includes the recommended approach to creating promotional content, such as standard points that need to appear on the promotional page, advice on producing good photos and videos, and even a recommended period to update the promotional content on the website.

The Travel Oregon website (<https://traveloregon.com/>) designed a page titled “Write for Travel Oregon” which contains an invitation to write content for the website. Figure 4.12 previews the “Write for Travel Oregon” page, which shows several options for a website user to contribute to the content. The page also provides a link to the online Google Doc file that provides guidelines for the interested freelance writer who wants to contribute to producing Travel Oregon content. The guidelines include the editorial principle, the topic options, and writing styles and format. The “Write for Travel Oregon” content invites all website users to produce content. Although the website users are mostly tourists, the website is accessible to everyone, which means that the local community also have a chance to produce informative content for Travel Oregon. The editorial guidelines linked to the Travel Oregon website can support community members who wish to participate in content creation for the DMS. Thus, the guidelines can improve local community skills in producing promotional content for tourism businesses or destinations, particularly for the Travel Oregon destination website.

# WRITE FOR TRAVEL OREGON

## Standard Contributor Submission Guidelines

Do you have a story to tell about Oregon travel, food and drink or the great outdoors? We are always on the lookout for great Oregon storytellers. Here are some opportunities to work with us:

**Freelance:** We contract with writers, photographers and videographers to produce the quarterly collection of stories we call seasonal features. These stories highlight the Oregon spirit in people and places around the state. Itineraries and profiles are written by experienced travel, food and outdoor writers, but we'll always consider a great story idea from a newbie. Take a look at the [Trip Ideas section](#) of our site and our [editorial style guide](#), then send us your idea.

**Photography and videography:** We are always looking for editorial photographers and videographers for our quarterly feature stories (see the "Freelance" section above) and the annual Travel Oregon Visitor Guide. Want to shoot for us or submit stock photography? Please send us a link to your website or media library for consideration.

**Influencers:** Are you a social media influencer planning a trip around our state? Take a look at the Travel Oregon social media channels and some of our [Trip Ideas](#), then fill out our [Influencer](#)

### Figure 4.12. Preview of Write for Travel Oregon Page on Travel Oregon Destination Website

Source: <https://traveloregon.com/write-travel-oregon/>, 2023.

#### Theme Three: Certification

The third theme under the ability dimension is related to the DMS function that promotes local tourism businesses through the destination authority certifying that a business meets a certain standard. Certification standards that a local business needs to adhere to before the business can be promoted on the website are commonly defined and evaluated by a DMO or industry association. The certification theme has only one functional category: (1) tourism product certification. The certification provides travellers with some assurance that the business is legitimate and trustworthy.

##### (1) Tourism product certification

The sole function under the certification theme refers to the content of the website related to the certified tourism businesses in the destination, usually followed by the certification description and the process to attain it. Only three of the 52 evaluated destination websites incorporate certification-related content. The three websites applied tourism products certification functions in two different formats, either by the destination website promoting the businesses that have received a certification, or by the website informing users about the certification scheme available in the destination. The certification scheme in the second format is presented in the form of a logo that can be found on the properties of the tourism businesses that have met the certification standards.

The Vipavska Dolina tourism destination website provides content related to tourism products certification by promoting certified tourism products. The website offers a page

labelled “Green Destination” (<https://www.vipavskadolina.si/en/odkrivaj/zelena-destinacij>). The page contains information about the Slovenia Green programmes, which focus on informing users about sustainability initiatives in the destination, including sustainably certified products and a responsible tourism “Green Guide”. The page also houses a link to the “Sustainable Products” page on the Vipavska Dolina destination website, which promotes tourism businesses certified as holders of the Slovenia Green label (see Figure 4.13). The sustainable products promoted on the page are linked to those businesses' promotional pages.

The certification theme of DMS functions is related to programmes that acknowledge and recognise tourism products and services available in the destination. This theme is mainly adopted using the information functionalities of the DMS. The certified tourism products and services or the certification programme are promoted on the destination website. However, the certification process, which includes enrolment in the programmes and the assessment process, was not thoroughly explained in the digital platform.

Arguably, the primary purpose of a tourism destination website is to address visitors' information needs. However, in the context of using a DMS to facilitate community engagement with tourism, the tourism destination website must also address the information needs of the host community, giving them the ability to participate in tourism activities and experiences within the destination. It is disappointing then to find that fewer than 10 of the 52 evaluated destination websites had adopted most of the DMS functions found on the website evaluations.

Vipavska dolina

Be active | Taste | **Discover** | Stay


Q EN f @

## Sustainable products

Certified providers of sustainable products, holders of the Slovenia Green label

**Slovenia Green Accommodation**

- Saksida Wine & Camping Resort, Zalošče (Eco camping)
- Hotel Sabotin, Solkan (Green Key)
- Sobe Leban / Rooms Leban, Vogrsko (Green Key)
- Pikol Lake Village, Rožna Dolina (Green Key)
- Ekološka turistična kmetija Toncevi / Eco Agritourism Farm Toncevi, Pedrovo (Green Key)
- DAM Boutique Hotel & Restaurant, Kromberk (Green Key)
- Odprte vasi / Open Villages, Prvačina (Green Key)
- Gozdna vasica Theodosius / Theodosius Forest Village, Vrhpolje (Green Key)
- Hotel Lipa, Šempeter pri Gorici (Green Key)
- Prenoišča Kogoj / Accommodation Kogoj, Bilje (Green Key)



**Slovenia Green Cuisine**

- Gostilna pri Lojzetu / Pri Lojzetu Restaurant, Žemono, Vipava (Green Key)
- Turistična kmetija Saksida / Agritourism Farm Saksida, Zalošče (L.E.A.F.)
- Ekološka turistična kmetija Toncevi / Eco Agritourism Farm Toncevi, Pedrovo (Green Key)

**Slovenia Green Agency**

Burjatik Agency with brands **Wajdušna**, Winestronaut and **Vipava Bike** (Travelife)

**Slovenia Green Attraction**

Monument of Peace on Cerje (Green Key)

**Figure 4.13. Preview of the Sustainable Products Page on the Vipavska Dolina Destination Website**

Source: <https://www.vipavskadolina.si/en/odkrivaj/zelena-destinacija/trajnostni-produkti>, 2023.

## **4.2. Summary of Global Destination Website Evaluation**

The MOA model (Hung et al., 2011) highlights three factors or conditions that lead an individual to participate in tourism planning and development: motivation, opportunity and ability (see Figure 2.1). Every one of the 52 evaluated destination websites have functions that can facilitate the motivation dimension of community participation in tourism, with all containing content related to the economic benefits theme. Nearly three-quarters of the websites (38 out of 52) have functions that facilitate the opportunity dimension of community participation in tourism, with communication features connecting local tourism stakeholders and DMS operators being the primary features of 16 destination websites. However, fewer than two-thirds (30 out of 52) of the evaluated websites have functions that facilitate the ability dimension of community participation in tourism.

Most DMS functionalities identified from the website evaluations cater to the needs of tourists or broader tourism stakeholders, rather than focusing on the specific needs of local communities. Information functionalities are the most used features in DMSs for facilitating community participation. In contrast, the communication and relationship functionalities are infrequently applied by DMSs. While some of the evaluated websites do use communication and relationship functionalities, particularly to address the opportunity dimension of the MOA framework, technological functionalities – to be able to upload videos, or photos and embedded social media posts, for example – are less common. These technological functionalities are often used to complement written content rather than serve as primary elements. The only DMS function identified that is adopted to specifically targets local businesses and residents as host communities is the provision of tourism-related job opportunities. The next chapter presents findings from a detailed assessment of DMS functions that can support community participation in regional Indonesian DMSs, as evaluated through the web analysis.

## **Chapter 5. Indonesia Regional DMS and Community Participation**

This chapter presents the findings from the evaluation of Indonesian regional DMSs, which assessed the capacity of destination websites to support community participation and represents the second phase of Part One of this research. The evaluation of 29 Indonesian regional destination websites is reported across three areas of focus: the operation of destination websites, the application of DMS functionalities, and the availability of functions that can facilitate community participation. The discussion on website operations addresses management models and the sustainability of website maintenance. The chapter then reports on the application of the five DMS functionality dimensions, information, communication, relationship, transactional, and technological, across Indonesian regional destination websites. The final section outlines the evaluation of DMS functions identified in the global website review as having the capacity to support community participation and examines their adoption within Indonesian regional destination websites. The application of these functions is further discussed in relation to their ability to accommodate the motivation, opportunity, and ability (MOA) factors underpinning community participation.

### **5.1. Management of Indonesia Regional DMS.**

As mentioned in section 3.2.3, 29 regional DMSs affiliated with regencies and cities associated with Indonesia's Strategic Tourism Areas were evaluated. One part of the evaluation focused on the management bodies and activities of the DMSs. The management body of each DMS was primarily identified through the 'About Us' and/or 'Contact' tabs on the destination websites. In many cases, the 'About Us' page provided information related to the website and its management, including the organisation and its structure, whereas the 'Contact' page contained details such as email addresses, social media accounts, and, in a few cases, the physical address of the managing organisation.

The analysis of 29 regional DMS in Indonesia revealed two main types of management organisations: government bodies and community groups. The majority of DMSs are managed by government bodies, predominantly the regional tourism offices (*Dinas Pariwisata*), including their extended units such as tourist information centres. In a smaller number of cases, management is undertaken by the regional communication and information offices (*Dinas Komunikasi dan Informasi*). By contrast, community managed DMS are operated mainly by local community members, often in the form of social entrepreneurship initiatives aimed at supporting local development. Overall,

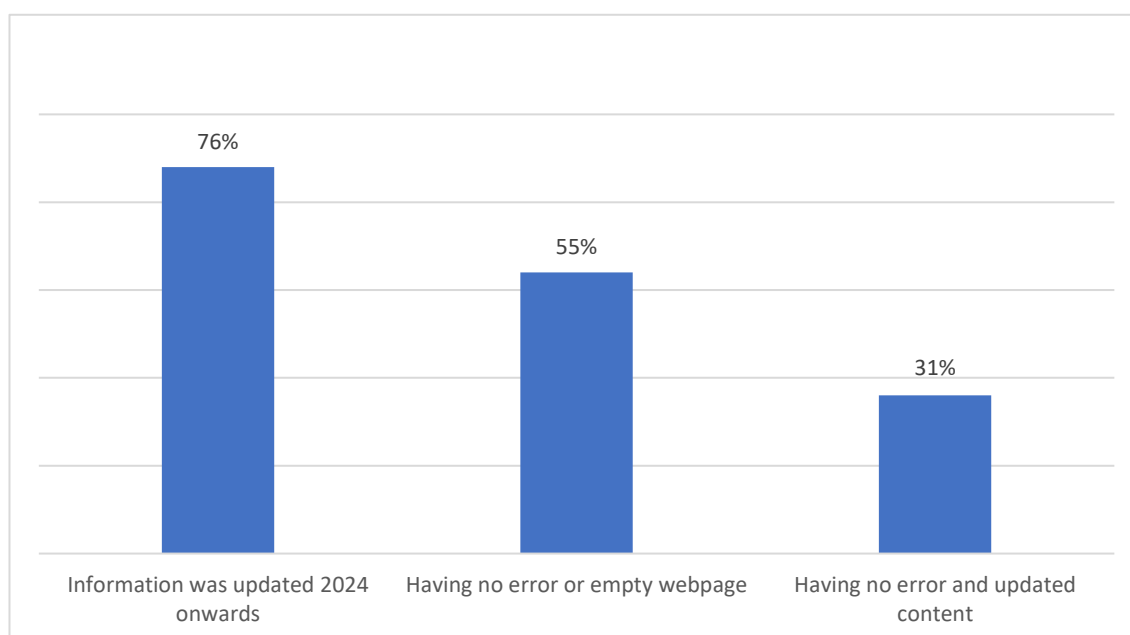
government bodies remain the primary managers of regional DMSs, with only a limited number of websites managed by community groups. For a couple of cases, however, the management organisation could not be identified. The management bodies of regional destination websites in Indonesia are presented in Table 5.1.

**Table 5.1. Management Bodies of Regional Destination Websites in Indonesia**

Management Body	Number of Destination Websites
Government Affiliated Body	23
Community Group	3
Unknown	3

Note: Based on 29 regional destination websites in Indonesia

This section also discusses the findings related to DMS operations, particularly their continuous activities based on the latest updated content and the accessibility of pages or features on the websites. The analysis suggests third quarter (76%) of the Indonesian regional destination websites had content last updated in 2024. The analysis identified the oldest content update on the websites as dating back to 2017. Whereas almost half (45%) of the evaluated destination websites were found to have inaccessible pages or features. Most of these appeared as an error, while others displayed blank pages. The combination of outdated content and inaccessible pages indicates a lack of sustainability in DMS operations. Based on these findings, only less one-third (31%) of the evaluated websites had content, pages, and features that were consistently updated and maintained. The findings related to the continuity of Indonesia regional DMSs operation is illustrated in Figure 5.1.



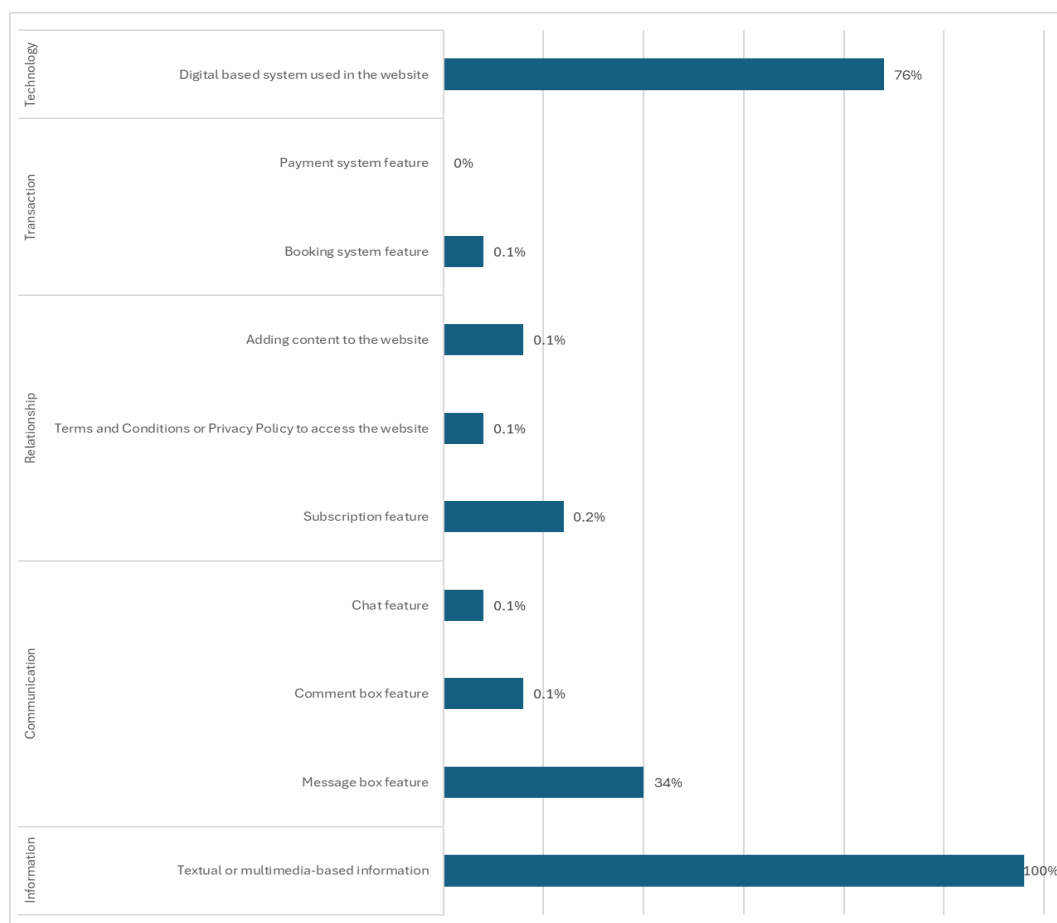
Note: Based on 29 regional destination websites in Indonesia

**Figure 5.1. Evaluation of DMS Continuous Operation in Indonesia**

The findings on DMS management and operations suggest that all community-managed websites regularly updated their content. In contrast, fewer than one-third of government-managed destination websites demonstrated consistent content and feature updates. This pattern suggests that community-managed DMSs may demonstrate stronger operational continuity; however, it is important to note that the number of community-managed DMSs identified in Indonesia for this study was relatively small.

## 5.2. Destination Management System Functionalities

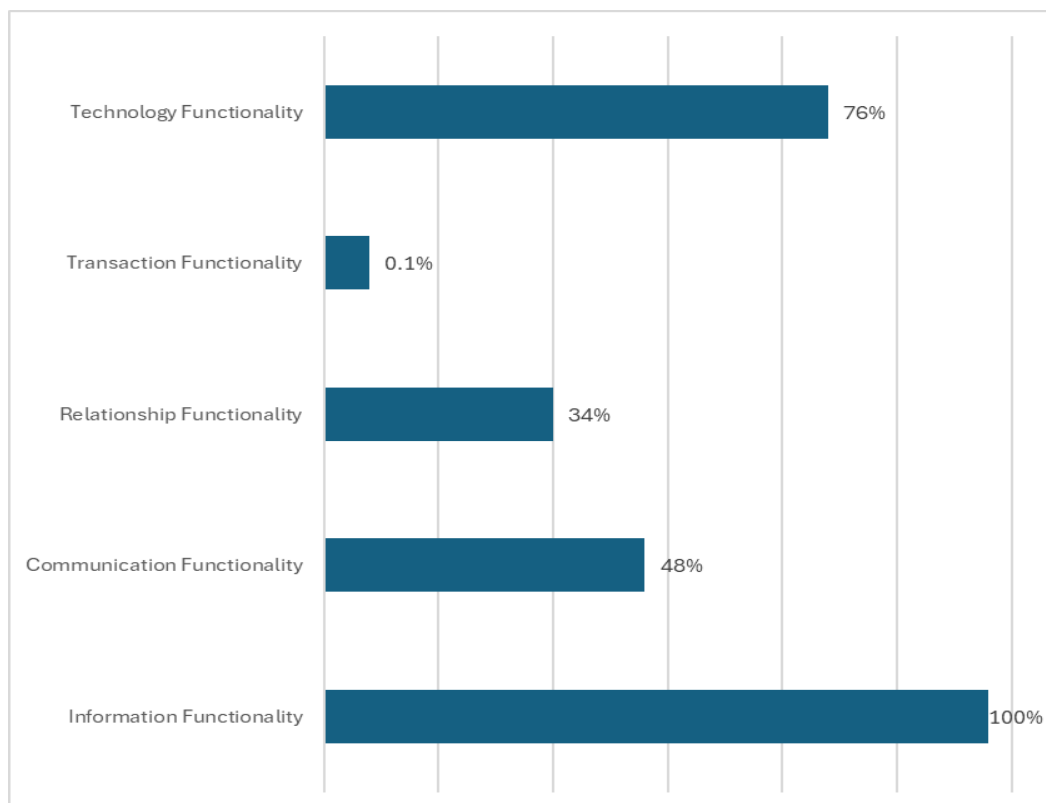
One of the aims of the regional destination website evaluation is to illustrate the structural features of the country's DMSs. The occurrence of different DMS functionalities reflects the evolving process of system adoption within the Indonesian context. The website evaluation examines these functionalities across five dimensions: information, communication, relationship, transactional, and technological, based on the criteria outlined in section 3.2.3a. The findings of Indonesia regional destination website evaluation related to adopted DMS functionalities based on criteria on Table 3.4. is outlined in Figure 5.2.



Note: Based on 29 regional destination websites in Indonesia

**Figure 5.2. Adoption of DMS Functionalities in Evaluated Indonesia Regional Destination Websites**

Overall, the findings indicate that the information dimension is the most widely implemented functionality on regional destination websites in Indonesia, followed by the technology dimension. In contrast, communication and relationship functionalities were adopted by fewer than half of the 29 evaluated websites. Meanwhile, only a small number of destination websites were found to have implemented transactional functionalities. The overall findings regarding the functionalities adopted by regional destination websites in Indonesia are illustrated in Figure 5.3.



Note: Based on 29 regional destination websites in Indonesia

**Figure 5.3. DMS Functionalities Adopted by Indonesia Regional Destination Websites**

The description of how these DMS functionalities is adopted by Indonesia's regional destination websites, through their associated content and features, is presented in the subsequent sections.

### 5.2.1. Information Dimension

Information dimension is the backbone of the DMS, which represented by the content in the destination website. As the basic dimension of the DMS functionalities, all the systems in Indonesia possess this functionality. The information functionality is conveyed through the destination website. The information dimension or the content of the destination website provides various information for the website.

In general, the information provided by Indonesian regional destination websites focuses on the promotion of tourist attractions, local events, tourism services, and destination-

related news. Among these, information on tourist attractions is presented as the primary content. Tourist attractions are commonly categorised into natural, cultural, and man-made tourism, following the classification outlined in Indonesia's tourism legal framework. Each attraction is linked to a dedicated page that typically includes a description of the site, details of related resources, tourism activities available in the surrounding area, opening hours, transportation options, and the location of the destination, often represented through geospatial information.

Another common type of content found on Indonesian regional destination websites are local events and tourism services information. Local events are typically presented as a list accompanied by thumbnails, which link to dedicated pages containing detailed descriptions. These event pages usually provide information about the event description, venue, schedule, entrance fee, and location. Similarly, tourism services are presented in the form of business listings with thumbnails that link to webpages outlining the services and products offered. Each service page generally includes a description of the tourism business, details of products or services, opening hours, estimated prices, and location, which is often displayed using geospatial information.

Tourism-related news is another common theme in the content of Indonesian regional destination websites. This news often covers current conditions, events, and situations in the destination that are relevant to the tourism sector. Examples include post-event reports, the opening of new tourism infrastructure and facilities, updates on regulations related to tourism activities, and changes in public services. While such news can provide valuable information for users, including tourists and local communities, to support their decision-making in participating in tourism, other items, such as visits from national tourism officials or regional dignitaries, tend to focus more on promoting the management body rather than addressing users' informational needs.

Besides the dominant themes, other types of information were also found on Indonesian regional destination websites, although with limited adoption. These include information on destination development strategies, online reviews, tourism development and website traffic statistics, as well as content related to local history, communities, culture, and traditions. Another significant finding from the evaluation concerns the dynamic nature of the websites. The analysis suggests that some of the dominant content themes, particularly tourist attractions and tourism services, are largely static, with only tourism news and events being updated regularly. In contrast, blog style information, most commonly found on community managed DMSs such as those of Magelang, Pacitan, and Raja Ampat, tends to be more dynamic than other types of content.

### **5.2.2. Communication Dimension**

The evaluation of Indonesian regional destination websites found that communication features were adopted by only around half of the evaluated sites (48%). The dominant communication functionality was unsynchronised features such as messaging boxes (34%) and comment text fields (14%). The messaging box, typically located on the 'Contact' page, allowed users to send text messages directly to the website administrator, while the feedback text box offered similar functions and was most often embedded within tourist attraction and service pages. In addition, a few websites (7%) provided links to external messaging platforms, such as WhatsApp, which offered synchronised communication with the management but were hosted outside the website. Overall, the findings suggest that communication functionality is not yet widely adopted in Indonesian regional destination websites.

### **5.2.3. Relationship Dimension**

The evaluation of Indonesian regional destination websites found that features related to the relationship dimension were present, although adopted by only one-third of the evaluated sites (34%). Three main functions of this dimension emerged from the analysis: the ability to submit content for publication (14%), a privacy policy information (7%), and subscription functions (21%). The content submission function was typically facilitated through an email link, allowing users to contribute information, most often related to local events or promotional content in the form of blogs. Although a privacy policy is generally considered a standard element of relationship functionalities in DMS, only a few Indonesian regional destination websites included this feature. Subscription functions emerged as the most common type of relationship feature identified in the evaluation, though their adoption remained limited overall. The subscription function identified in the website evaluation typically requires users to register in order to receive updated information or content related to the website or destination.

### **5.2.4. Transactional Dimension**

The analysis revealed that transactional functionalities were rarely adopted in Indonesian regional destination websites. Only a few sites (7%) incorporated a booking system, which allowed users to reserve tourism services, typically tickets for government-managed tourist attractions and events. These booking systems were linked to external payment platforms, such as banking services and electronic finance providers. Overall, the findings suggest that not only is the adoption of transactional functionality limited, but its application is also restricted to booking systems that facilitate government-owned services.

### **5.2.5. Technology Dimension**

The evaluation of Indonesian regional destination websites found that approximately three-quarters (76%) of them employed various digital technology systems. The most dominant technology identified was the Geospatial Information System (GIS). Most websites used the Google Maps platform to display the locations of tourism points of interest, including attractions and other tourism services, embedded within the relevant webpages. Other technological functionalities adopted in some websites included Consumer Relationship Management (CRM), represented by subscription systems, and search systems to help users explore website content. Less commonly adopted technologies included virtual tours of attraction areas, QR links to messaging platforms, online surveys on tourist satisfaction, booking systems, and gamification. Gamification was observed as a unique feature on one website, which offered trivia related to tourism content. While a variety of technological functionalities were identified, only GIS, CRM, and search systems were applied across multiple websites.

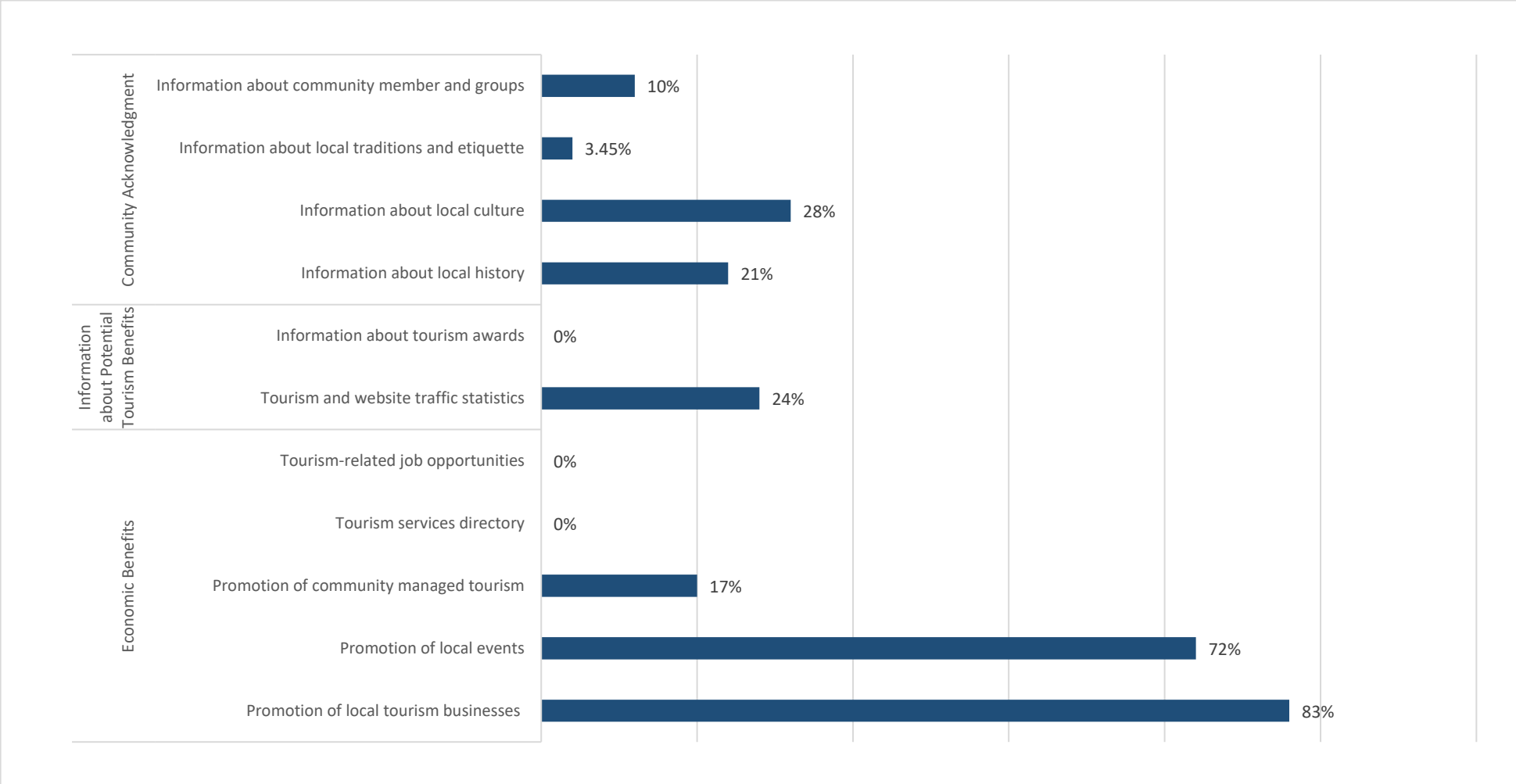
## **5.3. The MOA adoption in Indonesia DMS**

In the previous chapter (4), the global DMSs evaluation highlighted several functions within destination websites that support MOA factors. Building on this, the present section introduces the findings on how such functions are adopted within Indonesian regional DMSs. The discussion is organised according to the MOA dimensions, with each addressed in the following subsections.

### **5.3.1. Motivation Dimension**

Several themes and categories of DMS functions that facilitate the motivational elements of participation emerged from the global destination website evaluation. The themes, economic benefits, information about potential benefits, and community acknowledgment, along with their respective categories, as presented in Table 4.2, were used as the criteria for evaluating regional destination websites in Indonesia. The findings related to the adoption of functions associated with these criteria are presented in Figure 5.4.

From the evaluation of Indonesian regional destination websites, DMS functions related to the motivation dimension emerged as the most prominent in facilitating community participation compared to other aspects of the MOA framework. Within this dimension, the majority of functions observed were linked to economic benefits as illustrated in Figure 5.4. In contrast, functions associated with information about tourism potential benefits and community acknowledgment appeared less frequently and were adopted only in a limited number of cases.



Note: Based on 29 regional destination websites in Indonesia

**Figure 5.4. Motivation Facilitated Functions of Indonesia Regional Destination Websites**

Three categories of functions related to economic benefits were identified in Indonesian regional destination websites: promotion of local tourism businesses (83%), promotion of local events (72%), and promotion of community-managed tourism (17%). Among these, the promotion of local businesses and local events were the most widely adopted, appearing in almost all regional websites. The promotion of local events was typically presented through webpages featuring tourism-related activities and festivals, while the promotion of local businesses commonly appeared in sections showcasing accommodation, culinary offerings, and tour services. These findings align with earlier observations suggesting that content related to tourism services, attractions, and events represents the most prevalent information functionality, albeit often presented in static form. Surprisingly, however, the promotion of community-managed tourism was rarely featured on destination websites, despite the widespread popularity of the tourism village programme in Indonesia.

All categories of functions within the community acknowledgement theme (38%), such as information about local communities, culture, history, traditions, and etiquette, were identified in Indonesian regional destination websites. However, these functions were rarely adopted and appeared only on a small number of websites. This is notable given Indonesia's vast ethnic and cultural diversity and its rich historical legacy of kingdoms and colonialism, where local culture and history are widely recognised as prominent sources of tourism value. Although many websites promote culture-based attractions, their content primarily focuses on locations and tourism activities rather than on the historical or cultural significance of these elements for the local community and therefore does not align with the community acknowledgement theme.

The only category of functions within the information about tourism potential benefits theme identified in the evaluation of Indonesian regional destination websites was the website traffic statistics (24%). However, this function was adopted by only a few websites. Given that Indonesia's tourism development strategies often measure success in terms of visitor numbers at the regional level, this finding is unexpected. Where present, website traffic and tourism development statistics were usually previewed at the bottom of the landing page, with links directing users to a page containing more detailed information.

### **5.3.2. Opportunity Dimension**

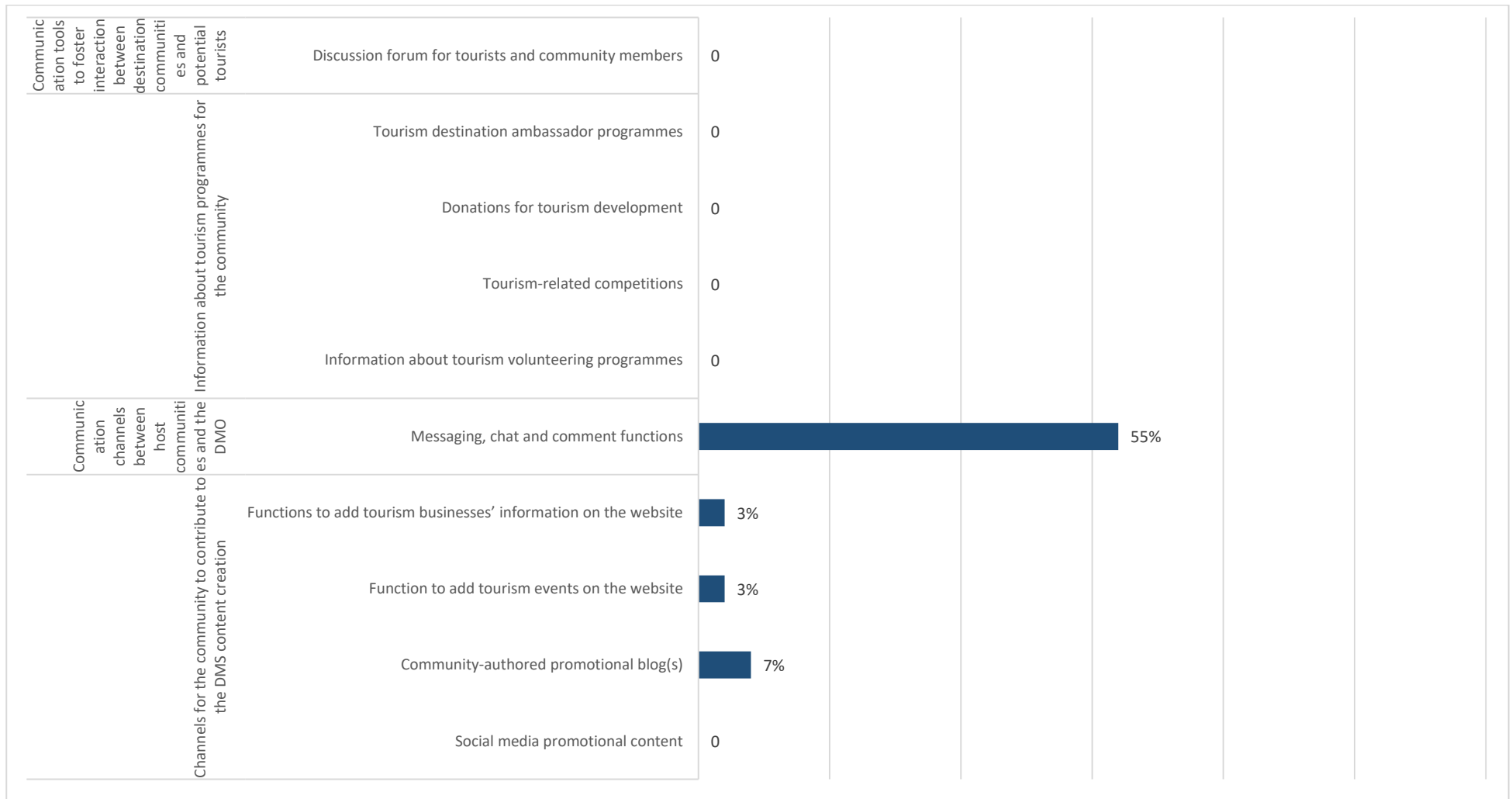
The evaluation of global destination websites in the previous chapter (Chapter 4) identified several DMS functions that can facilitate the opportunity factors of the MOA framework, which is presented in Table 4.3. The themes of these DMS functions, channels for community contribution to DMS content creation, communication channels between host communities and DMOs, information about tourism programmes for the

community, and communication tools to foster interaction between destination communities and potential tourists, along with their associated categories, were used as criteria to examine the adoption of similar functions in regional destination websites in Indonesia. Based on these criteria, the findings from the evaluation of Indonesian regional destination websites are illustrated in Figure 5.5.

Although the opportunity dimension was not the most dominant theme in the functions of Indonesian regional destination websites, related functions were identified in two-thirds (62%) of the evaluated websites. Based on the evaluation findings as presented in Figure 5.5. only two themes of functions emerged as associated with this dimension: communication channels between host communities and the DMO, and channels for the community to contribute to DMS content creation. Of these, the former was more widely adopted, appearing in over half of the websites, whereas the latter was found in only a small number of cases.

Communication channels between host communities and the DMO emerged as the dominant theme (55%) within the opportunity related functions adopted by Indonesian regional destination websites. This theme was represented through messaging, chat, and comment functions. The evaluation found that non-synchronised communication features, such as messaging and review text boxes, were the most commonly adopted. A small number of websites, however, incorporated synchronised communication through third-party applications such as WhatsApp. These findings are consistent with the global destination website evaluation, which also identified a similar pattern of adoption for both non-synchronised and synchronised communication features. Another point of consistency is that these communication functions were generally designed to facilitate communication between all website users and website managers, without explicit reference to community-specific communication. While the evaluation of the website was able to identify the presence of these features, their actual usability falls beyond the scope of this research.

Channels for community contributions to DMS content creation emerged from the website evaluation in the form of community authored promotion blogs (7%) and functions for promoting tourism businesses (3%) and events (3%). However, the application of these functions was rare. Interestingly, such features were found only in destination websites managed by community groups. Although these functions do not allow users to directly upload and synchronise content into the DMS, they provide text boxes through which website users, including community members, can submit content to the website managers for inclusion on the site.



Note: Based on 29 regional destination websites in Indonesia

**Figure 5.5. Opportunity Facilitated Functions of Indonesia Regional Destination Websites**

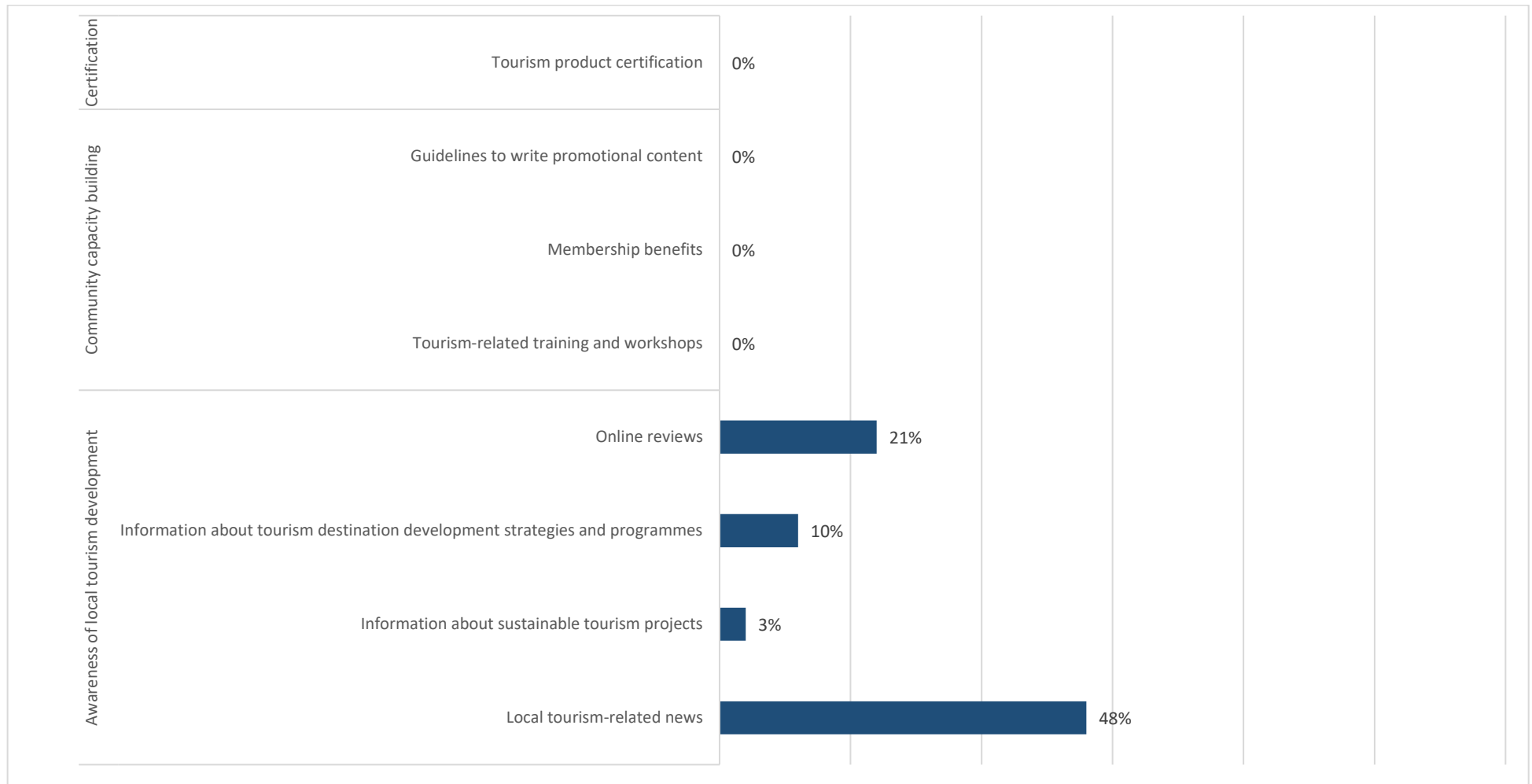
### 5.3.3. Ability Dimension

The evaluation of global DMSs in the previous chapter (Chapter 4) identified several functions that can facilitate the ability dimension of the MOA framework. The themes of ability-facilitating functions, awareness of local tourism development, community capacity building, and certification, along with their respective categories, as presented in Table 4.4, were used as the criteria to identify similar functions on Indonesia's regional destination websites. The findings from the evaluation of these websites, relating to functions that can facilitate the ability factors of the MOA framework, are illustrated in Figure 5.6.

Figure 5.6 illustrates that the DMS function theme associated with the ability dimension, identified through the evaluation of Indonesian regional destination websites, is awareness of local tourism development (55%). Although this theme was not among the most common, it was present in at least half of the evaluated websites. The most dominant category within this theme was local tourism-related news (48%). Other categories that emerged included online reviews, information on tourism development strategies and plans, and information on sustainable tourism projects.

The tourism-related news category was represented by content providing updates on tourism or destination-related developments. As discussed in section 5.2.1, this was among the most common types of content, adopted by around half of the evaluated websites. This category also stood out as one of the few that consistently provided locally relevant information in an updated format.

By contrast, the categories of online reviews (21%), information on tourism development strategies and plans (10%), and information on sustainable tourism projects (3%) were found only in a small number of websites. Online reviews were most commonly located on pages promoting attractions, businesses, and services. While many websites offered links or text boxes for submitting reviews on tourism products, only a few displayed reviews directly on the site; most redirected users to external platforms such as Google Reviews. Interestingly, functions related to tourism development strategies, plans, and sustainable tourism projects were rarely adopted, even though development strategies are widely socialised within Indonesia's bureaucratic system. This limited presence may be linked to the use of separate regional government websites for publishing such information.



Note: Based on 29 regional destination websites in Indonesia

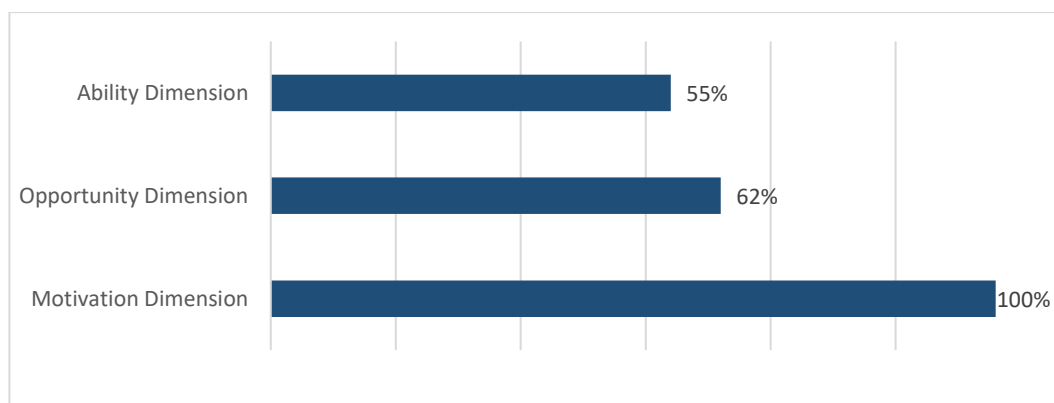
**Figure 5.6. Ability Facilitated Functions of Indonesia Regional Destination Websites**

## 5.4. Summary

The evaluation of Indonesian regional destination websites found that most were managed by government-affiliated bodies, with only a few managed by community groups. Based on indicators such as the frequency of updates and the presence of errors, only about one-third of the websites appeared to be operating sustainably, which included the majority of those managed by community groups.

In terms of functionalities, the information functionality emerged as the backbone of the DMSs. Other functionalities, such as those related to communication, relationship, and technology, were beginning to develop, as indicated by their adoption in around half of the evaluated websites and by the increasing use of digital system such as GIS and CMS. By contrast, transactional functions were identified in only a small number of websites, suggesting that this functionality remains underdeveloped in Indonesian regional DMSs.

The evaluation also found that Indonesian regional destination websites contained functions capable of facilitating the Motivation, Opportunity, and Ability (MOA) dimensions of community participation. Among these, functions related to motivation, particularly those linked to economic benefits, were the most dominant. This pattern aligns with findings from the evaluation of global destination websites. Opportunity and ability related functions were present in about half of the destinations. However, consistent with the global destination websites evaluation, the implementation of these functions in Indonesian DMSs was primarily directed towards meeting tourist needs, with limited evidence of their potential being used to support community needs. Further findings on the strategic application and design of Indonesian DMS, based on interviews with stakeholders from selected regional cases, are presented in the next chapter. The overall findings of the evaluation of Indonesia regional destination websites related to the functions that can facilitate community participation is illustrated in Figure 5.7.



Note: Based on 29 regional destination websites in Indonesia

**Figure 5.7. MOA Framework Facilitated Functions of Indonesia Regional Destination Websites**

## **Chapter 6. Indonesia Regional DMS Adoption: A Perspective from the Wakatobi and Banyuwangi Destination Websites**

This chapter forms the third phase of the Part One of this research, which explores the strategic rationale for DMS adoption in Indonesia by exploring two cases of regional DMSs. The chapter reports on the findings related to the development of regional DMSs in Indonesia and their connection to support community participation practices. Following Indonesia regional destination websites evaluation, interviews were conducted with key stakeholders from two selected regional websites: Banyuwangi Tourism and Wakatobi Tourism. These interviews aimed to uncover the strategic reasons behind the establishment and development of these DMSs. Key interview questions addressed the objectives of website development, success criteria for the DMS, recent operation, and the stakeholders' expectations for the future development of the destination websites.

The two Indonesian regional destination websites, Banyuwangi Tourism and Wakatobi Tourism, present distinct characteristics. The Banyuwangi Tourism website was initiated and is operated by the local tourism authority, whereas the Wakatobi Tourism website was originally developed by the NGO Swisscontact as part of the WISATA project, although it is now managed by the local tourism authority. The WISATA project aimed to promote regional economic growth through the development of sustainable tourism practices in several Indonesian regions. In terms of destination development, Wakatobi Regency is an established destination, while Banyuwangi Regency represents an emerging tourism destination. Accordingly, the two cases provide different yet complementary insights.

### **6.1. The Aim of DMS Adoption**

The second part of Indonesia DMSs evaluation study involved conducting ten semi-structured interviews with stakeholders from two evaluated Indonesian regional destination websites: Banyuwangi Tourism and Wakatobi Tourism. The rationale behind the selection of these two regional websites is presented in section 3.2.4. The interviews revealed that the initial aims for establishing the two-study case DMSs were twofold: first, to be the main reference of tourism information available on the internet, and second, as a promotional channel for a tourism destination.

As a main source of information about a tourism destination, the DMS provides information about the destination to introduce the region to potential tourists. The website can include information about the public services available in the destination and about

culture related to the destination, such as ethnicity and local traditions, dress, etiquette and festivals. One of the interviewees suggested that information on the website about the region will assist visitors when exploring the destination. Another interviewee suggested that information about the region's unique features, tourism facilities and attractions is used to foster an image of a region as a tourism destination. When asked about the aim of destination websites, a third interviewee (who works in website management) described the website as an information portal for visitors to learn more about the region and to improve perceptions of the region.

The main purpose [of the destination website development] is to change the image [of the region]. In the past, Banyuwangi was known as a witchcraft city, which discouraged people from coming. Moreover, the location [Banyuwangi] is far from big cities, so the potential [tourism] cannot be developed to the fullest and is only popular as the transit city. From our perspective, the number of people who went through Banyuwangi was high, but only a few stayed. Therefore, we designed a new approach [the website] to introduce our region and change those images. It went from a city of witchcraft to a tourism and internet city (where information related to the region can be found on the internet). People can know us (the region better) from afar through the internet. (BM1)

BM1 highlights the primary aim of DMS development is to embrace modern trends in using digital platforms to convey promotional information and enhance the region's brand as a tourism destination. The same interviewee suggested that branding the destination through the website can positively reshape the region's image, in line with the increasing trend of internet engagement. This view aligns with Gössling's (2021) critique of ICT applications, which often assume positive outcomes from their adoption, while neglecting the need for critical evaluation of their actual impact and operation.

Alternatively, a few of the interviewees believed that the destination website, particularly in their region, was developed to be a marketing and promotional tool for a destination. As a marketing channel, the destination offers promotional information on tourism services and businesses available in the destination. In the case of Banyuwangi, marketing functions facilitated by the destination website also include ticket sales for local tourism events held by the local government. WM1, who works in destination management, sees a destination website as a more effective marketing tool than traditional destination marketing approaches, such as attending a travel fair and disseminating printed marketing flyers. The destination website that connects to the internet network, says WM1, can support promotional efforts to reach a larger tourism market:

If we discuss our purpose, we believe the website has a strategic function as an instrument to improve the range of Wakatobi tourism promotion. We believe we are in a digital era, so we thought we could not depend on direct or traditional marketing. That was our reasoning at that time [when the website was established]. (WM1)

In the quote above, WM1 indicates that the DMS was developed to provide an alternative promotional tool, representing a new approach to marketing through the digital space by

utilising an ICT platform. This suggests that ICT adoption in Indonesia is still missing more recent ICT concepts, such as smart tourism, which focuses on knowledge sharing and facilitating community participation (Buhalis, 2020). The interviews suggest that both the regional destination websites being examined focus on providing the information needed for tourists to visit and travel around the destination and have yet to embrace the other functions of a DMS that can facilitate local community engagement in tourism.

## 6.2. DMS Success Criteria

Defining and understanding criteria for a website's success can help confirm the purpose of the DMS and the strategic reasoning behind its development. Analysis of the semi-structured interviews identified three main themes in the criteria used to assess website success: the destination website performance, the quality of content on the website, and the overall impacts of tourism in the destination. According to the interviewees, destination website performance can be measured by its ability to attract users to engage with the content on the website. This criterion for destination website performance can be measured from the website traffic statistics, like the number of users and profiles. Alternatively, some interviewees suggest the number of tourism products purchased by visitors who were informed by the destination website could be another criterion for DMS success. One of the members of Wakatobi community, who owns a tourism business that appears on the website, addressed the measurement of DMS success based on its performance:

For me, the success and failure of the destination website can be seen from the number of users who visited the website and the profiles... Now that I have operated my website, I know that I can see visitor profiles of the website. (WC3)

Another theme of the criteria to measure the DMS success is the *quality of the content*. This theme described as the accuracy, usability and variety of the information offered on the website for tourists' needs, is another criterion that the interviewed DMS stakeholders suggest could be used to assess DMS success. Most of the stakeholders suggested that the DMS should give accurate information about the condition and situation in the destination, such as safety and security, and the availability of tourism facilities, so the DMS content can be beneficial for tourists when visiting the destination. At the same time, some of the interviewees also suggested that the design of the website (its layout) was important to information delivery. One stakeholder suggested that the number of the times DMS content is shared by users through their network can indicate that the website has provided quality information:

One of the success indicators of the website can be measured by the number of contents [of the website] shared through [users'] social media networks. The significance of the website contents can be illustrated by the number of users that access and share the information. (WC1)

DMS stakeholders also suggested that the effectiveness of the destination website should be evaluated based on its influence on the development of local tourism. A common view of the interviewees is that the number of visitors and their spending are two variables that can be used to evaluate the DMS's success. A few of the interviewees provided some recommendations on how to measure the impact of the DMS has on the overall tourism benefits to the destination. For example, they suggested the success (impact) of the DMS could be measured by comparing the number of users who had accessed the destination website and the growth in the number of visitors to the destination over a certain period. It was further suggested that analysing the countries of origin of visitors who used the Wakatobi Tourism website for trip planning could help assess the DMS's coverage of traditional markets as well as its reach into new markets. One of the community members discussed indicators of DMS success based on the number and origins of the visitors:

The success of Wakatobi's destination can be measured by the number of visitors and, alternatively, the variety of tourists origins that visit Wakatobi. That was mentioned because domestic visitors are dominant, and if we have visitors coming from different countries, it could mean that the destination website is successful as presumably the tourists were informed by the website. (WC2)

The interviewees suggested three main criteria of DMS success and some methods to measure these criteria, although they did note that these criteria are merely suggestions. None of the DMS stakeholders interviewed, from management and tourism businesses alike, were completely sure about the criteria being applied in both Wakatobi and Banyuwangi. In both the Wakatobi and Banyuwangi cases, the website developer believed that the increasing number of visitors in the region was a sign of the effectiveness of their respective destination websites

In summary, the findings on the criteria used to assess the success of the DMSs in the two case studies indicate that both the Banyuwangi and Wakatobi DMSs do not have a clear view on how the success of the website should be measured, despite suggesting three variables that they believed to be a representation of successful destination websites. This suggests that the study case DMSs were developed with minimal strategic reasoning especially on its expected impact on destination management, and the websites are primarily built to embrace the trend of digital marketing.

### **6.3. DMS Recent Development in Indonesia**

As with many ICT tools, DMSs have continuously evolved since they were first developed. This is also the case for the Wakatobi and Banyuwangi tourism websites. To

understand the strategic role of the DMS to local tourism development, it is essential to gain insights into how destination websites have contributed to local tourism development. This aids in understanding the evolution of these websites' intended roles and the effectiveness of the websites in accomplishing their objectives. The DMS key stakeholders' views on the contribution of destination websites towards local tourism development can be used as indicators to assess DMS development. Additionally, the DMS stakeholders' criticisms of the destination websites illustrate the websites' operational shortcomings, particularly in addressing the varied roles of a DMS.

Although the interviewees perceive that the DMS in their region has contributed to some aspects of local tourism development, the most dominant view of the benefit of destination website is its ability to help local tourism businesses, which in Indonesia are dominated by SMTE and informal businesses. Other DMS benefits, such as raising environmental awareness and fostering local collaboration, were mentioned during the interviews, but the general perception was that only a limited number of stakeholders would benefit from these. Some stakeholders even stated that potential benefits were not being realised, arguing that communication initiatives from the DMS operator were insufficient to engage the broader community effectively.

Some of the business operators discussed their perceptions of the positive impacts of the destination website on tourism development, particularly for local businesses and service operators. The most held view was that the main benefit of a destination website for locally owned tourism businesses is that the website can be a support mechanism to help them gain broader exposure for their businesses and enable them to increase their market share and business networks. Interviewees suggested, for example, that the destination website facilitates SMTEs and informal businesses such as tourism villages, CBT and local crafts businesses, like batik (a traditional patterned textile) shops, to promote their product and reach a larger market. Traditionally, SMTEs and informal businesses have very little infrastructure to promote their products, especially to potential tourists.

One interviewee said that their businesses had started to receive incoming communications from potential tourists to purchase their products after their business had appeared on the destination website. While the communication comes directly to them through Whatsapp or mobile calls, rather than through any functionality on the website, the owner believes that their business's exposure on the website is one of the factors for the increase in sales. The same interviewee suggested that the DMS has the potential to showcase local tourism products, allowing local businesses to reach bigger audiences by offering comprehensive information about their product. Another community member suggested that destination websites can provide a platform for

tourism businesses to create promotional content, with a key benefit being that a destination website has broader coverage than social media, which is what most local SMTEs use to promote their services.

For me, destination websites can be one of the promotional tools that can [help businesses] to reach larger audience than social media as social media can only reach inner circle connections, and the networks are not as large as websites. ... A destination website can also be the tool that creates more extensive promotion content compared to social media that has limitations in creating content which usually contains 50% picture and 50% text, and more often dominated by pictures. Therefore, a website can help provide clearer articles and (extensive) information that can be supported by pictures and is able to be shared with a wider audience and reach more potential tourists. (WC1)

The DMS stakeholders recognised the ability of destination websites to communicate information about sustainable tourism programmes available in the destination. An interviewee who is involved in DMS management suggested that the destination website can help tourism development in the destination by promoting sustainable tourism initiatives. They argued that the website contributes to supporting socio-economic sustainability by empowering local tourism businesses in promoting their services, and supports an environmental dimension of sustainability practices, such as environmentally friendly tourism activities and campaigns.

The ICT platform is used to promote local, sustainable tourism practices and raise awareness of local environmental issues. (BM1)

The interviewee contended that in fulfilling its role as a centre of information and promotional channel for a destination, the destination website provides information about tourist attractions and services. They also suggested that hosting local tourism attractions and services on the website can encourage collaboration between stakeholders, in this case, collaboration between attraction operators, service providers, and the destination website operator. This viewpoint aligns with that of another interviewee, a tourism operator, who suggested that including businesses such as tourist attraction operators and local craft shops could foster and strengthen a network of tourism collaborators, particularly in managing inventory and updating information on visitor number thresholds.

...psychologically, the presence of the information about the attraction that we operate in the websites has brought up the feeling of co-ownership [with the DMS operator] for attraction management and conservation. (BC2)

While the interview comments indicate that the Wakatobi and Bayuwangi destination websites do benefit local tourism development, the local stakeholders were also sometimes critical of their destination websites. Three main criticisms emerged from the interviews with the DMS stakeholders: destination website management, DMS performance, and information quality. There was a general feeling among the interviewees that the constant changes of DMS operator (Wakatobi Tourism website)

have caused a discontinuity in its operation, particularly in gathering data for website content. A community member argued that the instability of the DMS management and operation had hindered the website's progress, causing it to be underdeveloped. The community member shared their disappointment as the tourism businesses were asked to provide the same information related to their products every time a new DMS operator came in.

The shortcomings [from destination website operation] are the human capital that managing the website. Our hope is that the website's operator is fixed so there is continuity because, most often, if the people who operate the website change, they will start again from the beginning. (then it is hard) to have the website sustainably developed. (WC2)

The most notable complaint about website performance that emerged from the interviews was about accessibility issues; specifically, broken links and inaccessible pages. Some of the interviewees reported that the website URL is redirected to an unknown page, while others said they had received feedback from tourists about the website's poor accessibility. A community member mentioned that:

Currently, the website server has been disturbed for two years and often linked to a different website, even though sometimes it can be opened and until now, it has not been fixed by the interested party [operator]. (WC3)

Some of those interviewed also indicated problems with the impact of the destination websites on the tourism businesses. A local tourism business owner reported that most of their customers gain information about their business from sources other than the destination website. The tourism service providers believe that the sales conversion from their businesses' promotion on the destination website is relatively low. A community-based tourism (CBT) member (WC2) highlighted during their interview that the low conversion of DMS promotions into actual sales for tourism businesses is a significant issue. They noted that most tourists discover and purchase their services through channels other than the DMS:

In reality, our experience is quite different. Most visitors informed us that they discovered our services either through recommendations from relatives who had previously purchased our services, via our Instagram and personal website, or through social media posts shared by their connections who had visited us before. (WC2)

One of those interviewed, who is involved in DMS management, explained that one of the main challenges in operating a destination website is creating content that fits with the actual situation in the destination, and a few of the DMS stakeholders did express discontent with the quality of the information on the Wakatobi and Banyuwangi destination websites. There were two main concerns about content on the destination websites, the first being the reliability and usability of the information. The interviewees felt that some of the information on the website was inaccurate and outdated; for example:

My first critique is related to the content; information in the websites must be updated as much information [found on the website] that is irrelevant to the current situation. (WM1)

This shortcomings of the DMS operator in producing quality content consistently mainly stem from the fact that the destination website is managed by a local government body, which predominantly focuses on policy formulation and the provision of services for the community. Thus, some of the interviewees believe that the DMS operator lacks competency in managing the website.

The second main concern about content on the Wakatobi and Banyuwangi destination websites relates to the source of the information published on the websites. Many DMS stakeholders reported that the process for publishing information on the websites is top-down and lacks stakeholder involvement. A member of a CBT initiative reported a lack of communication from the website operator about publishing their CBT content:

There is no announcement at all related to the creation of [tourism businesses] promotional content on the website. In the beginning, there was no formal notification that the tourism village promotion [content] would be published on the website. (WC2)

The above quote suggests that the tourism businesses that feature on the website did not receive adequate communication about the development of the DMS and their inclusion on the website. The communication was made by the DMS operator as they needed a reference for the website content, indicating that the DMS operator holds too much control in the operation and development of the tourism destination website.

#### **6.4. DMS Stakeholder Expectations on the Future of the DMS**

The interviewees were invited to share their expectations of destination websites and their recommendations for enhancing their own websites in the future. Their answers highlight the shortcomings of the two destination websites from the viewpoint of DMS stakeholders, specifically local business owners and operators. A commonly noted suggestion for the future advancement of destination websites relates to the management of these platforms. Most of the interviewees suggested that an independent and professional team should manage the websites, ensuring the continuity of the operation. Some community members reported their discontent, saying they were asked for the same information every time the operator changed. Giving a different perspective, the DMS operators admitted that they face several constraints in managing the destination websites sustainably, including human capital (skills, knowledge and experience), regulations and funding. In general, the interviewees agreed that better management will help the destination website develop sustainably.

One community member proposed an alternative management approach for website operations, suggesting that the Destination Management System (DMS) be managed by a private entity under government contract.

For me, the current tourism authority cannot follow the latest digital technology development. The government's structure and personnel need refreshment, and a new management model (that aligns with the digital technology approach). Even though I know there is a constraint in regulation in government staff recruitment and compensation scheme that has not been managed well... For me, the third party [outside government body] or private entity which is paid by the government initially and annually [for its management role] and involved local people in filling local content. (WC3)

Following the suggestion to improve the management and operation of the destination website, the interviewed stakeholders advised that the local community, that is, the residents and local business owners, should be involved in the operation of the DMS. Ideas for involving the host community include contributing to DMS content creation and facilitating the provision of tourism-related information tailored to the community on the website. This community information provision includes tourism-related training, workshops and local sustainability programmes. Additionally, engaging the community in the production of destination website content involves offering content-creation training to enhance residents' capability in writing and producing high-quality website content.

Another community member shared their hopes that the destination authority can improve local community capability to contribute to the destination website operation and add local knowledge to the destination website content.

... for me, in the future, copy-writing training [for website content] can be held and followed up with the writing competition for the villages so that the villages community can fill the tourism village content... On the other hand, the government's involvement in training the community to create content will be another government effort for community participation, particularly in contributing to writing about local sources, folklore, and wisdom. (BC1)

Several interviewees also suggested new functions could be facilitated on the destination website. The commonly suggested functions were ones that could help locally owned tourism businesses to gain more customers and ones that would connect locally owned tourism businesses to larger tourism business networks. In their interviews, the stakeholders also reiterated the importance of the DMS's dual role as a reliable information broker, providing not only tourists with reliable and accurate information on local tourism businesses but also local businesses with reliable and accurate information on tourism activities and development in the destination. This can help local businesses to better connect with tourists while also ensuring safety and security for tourists who wish to purchase tourism products and services. Some recommended functions for the DMS that emerge from the interviews include communication channels from tourists to tourism businesses and website operators, links to tourism businesses' official websites and social media, and geospatial information systems (GIS) to map tourism businesses

in the destination. One business owner posited that the primary objective of ensuring accurate information is available on the website for local tourism enterprises is to enhance their visibility and facilitate contact with potential visitors. This can be done by connecting the destination's website with the verified digital platforms of local businesses.

My hope is it [the destination website] can be linked with our [local tourism business's] digital platform either [on] the website or, if not available, maybe can be replaced by its social media, but the destination website has to make sure that link is a verified digital platform of tourism businesses. (BC3)

All the interviewees expressed an expectation that as the DMS evolves, it should be centred on creating a digital platform that accommodates the needs of the local community and addresses local tourism issues that local stakeholders faced. Currently, some of the interviewees argued, the tourism authorities determine the current development of destination websites with very little participation from the community in the planning and operation phase. This community member's expectations for the future development of the destination website highlight their belief that a community-centred DMS can assist in solving local tourism issues:

My expectation is this website can be developed in the future according to the community need because programmes like this [a destination website] are mostly taking a top-down approach, which can be seen as a formality for the local government and used to absorb governing budget but not quite accommodating local community needs. For instance, If the number of traditional culinary markets in some villages is decreasing, the government, through the website, should do something to solve the problem, like making a page to promote local [culinary] products or promote local traditional markets on the website. (BC1)

In summary, most of the recommendations for future DMS improvements that emerged from the interviews emphasise the need for the participation of local tourism stakeholders, particularly community groups and small tourism businesses, in any ongoing development of the local destination website.

## **6.5. Summary of Indonesia DMS Stakeholders Interviews**

The key stakeholders interviewed in part two of this doctoral research believe that the Banyuwangi Tourism and Wakatobi Tourism websites were created to achieve two primary purposes: to promote the host region as a tourism destination, and to provide an information hub about the destination. As a promotional tool for a destination, a destination website promotes tourism products and services as individual products and one destination. The destination website also provides general information about the destination, including geographic and demographic information, public services and facilities available in the region, and the latest conditions about the region to play its role as an information hub. The information shared through the website is intended to build the region's image as a tourism destination.

Three criteria for measuring the success of a tourism destination website emerged from the DMS stakeholder interviews: the performance of the destination website, the quality of the information on the website, and the impacts of the website on the tourism industry in the destination. Destination website performance is commonly measured based on website traffic, including the number of users accessing the website and the origin place of the users. The variety, accuracy and usability of the information published on the destination website are the variables used to define the quality of the information on the website. And thirdly, the impacts of the website on the tourism industry in the destination can be measured by comparing the number of visitors against the number of users accessing the destination website or by measuring the number of tourism products sold during an event that has been promoted on the destination website.

The DMS stakeholders identified several benefits of the Banyuwangi Tourism and Wakatobi Tourism destination websites, as well as some criticisms of their operation. The benefits of the websites include providing local tourism SMEs with a promotional platform to access a larger market, conveying sustainable tourism practices, and supporting local stakeholders' collaboration in tourism. However, the DMS stakeholders were also critical of the destination websites' shortcomings, including the operator's ineffective management of the destination website, unreliable accessibility of the website, outdated content on the website, and a lack of local stakeholder involvement in the DMS management.

Finally, the DMS stakeholders were asked for suggestions as to how destination websites could be improved in the future. The stakeholders recommended better destination management structures, that the website become a hub for tourism businesses' digital platforms and involves the community in destination website operation. Most of the recommendations indicate that the current management of destination websites is a top-down approach, and that a destination website can be improved by adding a bottom-up approach to its management and operation.

# **Chapter 7. Delphi Study: Destination Management System (DMS) Terminology**

The Delphi method employed in this thesis is centred on three key objectives: (1) to establish shared understanding of the destination management system (DMS) concept, (2) to examine the capacity of a DMS to facilitate community involvement in tourism development activities through its various functions, and (3) to investigate potential future scenarios for DMS development, especially in relation to enhancing community participation in local tourism initiatives. This chapter focuses on presenting the findings related to the first objective, including its definition, purposes, functions, success criteria and main beneficiaries. Each of the elements that characterise DMS is discussed in the following sections.

As outlined in section 3.2.5, the Delphi study in this doctoral research comprised three distinct rounds. Round one served as an exploratory phase, setting the stage for the subsequent findings using interviews to collect qualitative data. Round two is treated as the validation process for the findings from round one. In round two, the Delphi panel members were asked to state their agreement with the findings that emerged from Delphi round one (refer to section 3.2.5). The round one findings, agreed with by 9 or more of the 12 panel members (>70%) were revisited in round two. The final round focused on confirming the panel's consensual answers, which are then designated as the final findings of the Delphi study. As detailed in section 3.2.5c, consensus was reached if the answers had an interquartile range (IQR) value equal to or less than 1 and the proportion of the participants who selected either 4 or 5 or 1 or 2 on the 5-point Likert scale is at least equal to 90%.

## **7.1. DMS Definition**

The definition of a DMS is evolving and there is no common agreement (refer to section 2.4.2). As such, establishing a clear definition of a DMS within the context of the Delphi study was crucial for creating a foundation for the subsequent discussion, given that the panel members may possess diverse interpretations of a DMS due to their varied backgrounds. During the initial round of Delphi interviews, the expert panel members were therefore asked to articulate their views on DMSs, revealing three prominent themes. The first was associated with the fundamental role of a DMS in supporting the management responsibilities of the DMO. The panel members agreed that the DMO should play a role in both the development and operation of the DMS. Another theme that emerged related to the roles of a DMS in facilitating collaboration among the

destination's stakeholders. Some panellists suggested that a DMS should provide interactive communication channels for all the tourism stakeholders involved in the destination. The third theme relates to the way that some of the expert panel members characterised DMSs from a technology perspective. The experts suggested that a DMS should possess a content management system (CMS), interactive communication system, and distribution system. For example, one of the panellists suggested treating the DMS as a digital asset that allows users to write content, store it on a server, and publish it on the website – later often referred to as a CMS.

Now some destination uses word like a content management system, where it's really more about the digital assets and really having the fraction of contents of them saves in a central place, but many systems are both distribution and content management system. (DP13)

The themes that emerged from the Delphi round one interviews were synthesised and summarised into a definition of a DMS, which was subsequently evaluated in Delphi round two. During this second round, the Delphi panel was requested to provide their insights regarding the following proposed DMS definition:

A destination management system (DMS) is a destination-focused digital representation platform operated by the destination management organisation (DMO). The DMS supports the DMO in performing its management functions and facilitates the collaboration of all stakeholders by connecting them through the DMS network.

In the Delphi round two survey, nine of the 12 panel members (75%) agreed with this definition. Thus, the proposed definition reached the threshold of accepted answers in Delphi round two to be tested for consensus in Delphi round three. The round two survey also captured recommendations made by participants to improve the proposed definition of DMS. For example, DP1 highlighted a lack of clarity in one aspect of the definition when they asked: "What do you mean by 'digital representation platform'?" This question implied that the term "digital representation platform" lacked clarity and should be substituted with a more recognisable concept to depict the DMS.

DP10 introduced the idea of using the term "ICT tools", which the expert panel member argued is well-known in the field of knowledge management and smart tourism. DP10 also proposed the following definition for a DMS:

DMS refers to a knowledge-based platform of ICT tools that integrates destination stakeholders and supports (DMO) destination management organisation decision-making .... (DP10)

The panel member's suggestion that the definition of a DMS ought to be aligned with contemporary discussions surrounding tourism frameworks, such as knowledge-based destinations and smart tourism, reveals that DP10 considers a DMS to be characterised as a knowledge-based ICT platform. Another notable aspect of DP10's proposed definition is that characterising a DMS as a knowledge-based ICT platform implies the

integration of DMS functions to support the decision-making process of the DMO. The feedback from Delphi round two were integrated into a revised definition of a DMS and subsequently included in the Delphi round three questionnaire to achieve a consensus. The revised DMS definition presented to the panel in the Delphi round three survey was as follows.

A destination management system (DMS) is a destination-focused knowledge-based information and communication technology (ICT) platform operated by the destination management organisation (DMO).

The DMS facilitates collaboration and decision-making processes of all tourism stakeholders by connecting them through the DMS network and supports the DMO to perform its marketing and management responsibilities.

Table 7.1 presents a descriptive statistical analysis of the expert panel members' perceptions of the proposed DMS definition generated from the Delphi round three survey. The descriptive analysis presents the median score and interquartile range (IQR) from the 5-point Likert survey as well as the consensus level value used to measure the criteria for a consensual answer. Most answers have the same value or are around the median value (5 = strongly agree) as the interquartile range is not larger than 1, indicating a consensus. The consensus level illustrates that all 12 expert panel members agreed with the definition, indicated by the fact that 100% selected either "agree" (4) or "strongly agree" (5) on the 5-point Likert scale. Combining the descriptive statistics and the consensus level results from the Delphi round three survey indicates that all the panel members who participated in the third round agree with the DMS definition presented in this study.

**Table 7.1. Delphi Round Three: DMS Definition Round**

Statements	Median (IQR) of 1–5 Likert Scale	Consensus Level
<p>"A destination management system (DMS) is a destination-focused knowledge-based information and communication technology (ICT) platform operated by the destination management organisation (DMO).</p>		
<p>The DMS facilitates collaboration and decision-making processes of all tourism stakeholders by connecting them through the DMS network and supports the DMO to perform its marketing and management responsibilities."</p>	<b>5 (1)</b>	<b>100%</b>

Note: Based on the responses from the 13 expert panel members who completed the Delphi round three questionnaire.

## 7.2. DMS Purposes

Several authors argue that the role of the DMO, as the primary operator of the DMS, has significantly evolved from one focused on destination marketing to one focused on destination management, ensuring that the tourism system works sustainably, as discussed in section 2.4.1. The evolution of the role of the DMO, coupled with continuous advancements in ICT and its applications in the tourism sector (including in DMSs), has the potential to transform the traditional purpose of the DMS as a marketing platform. The results of the Delphi study concerning the purpose of the DMS can provide an understanding of how the DMS should function, as perceived by experts. This section outlines the results obtained from the three rounds of the Delphi study regarding the purpose of the DMS. In the first round, the panel experts were asked via semi-structured interviews about the purposes of DMS development.

Table 7.2 displays eight DMS purposes that emerged from the analysis of the Delphi round one interviews. The second column presents a definition of each purpose, which is drawn from the thematic analysis of the interviews.

**Table 7.2. Delphi Round One: DMS Purposes**

DMS Purpose	Interpretation of the Purpose
1. <b>To facilitate collaboration among tourism destination stakeholders.</b>	The DMS is a tool to connect internal and external tourism stakeholders of the destination. The DMS can connect interested parties, assisting the destination authority in enabling local tourism stakeholders to collaborate to co-produce tourism value and sustaining tourism destination resources.
2. <b>To be the official portal to access information about the tourism destination.</b>	The expert panel members commonly indicated that the DMS primarily serves as the main source of information for the destination, providing access to all tourism-related information. The content on the website is mainly geared towards tourists. Additionally, destination websites are considered as an excellent platform for destinations to disseminate official and trustworthy tourism information, typically overseen by the local tourism authority.
3. <b>To support the efficient delivery of tourism services in the destination.</b>	The panel members suggested that the adoption of a DMS can improve the efficiency of tourism services delivery in the destination, saving the consumer time and money by offering a transactional system and combination of tourism services through its network. This allows customers to book or purchase a combination of tourism products in advance, allowing minimal cost in terms of time and money for tourists compared with traditional phone booking or intermediary-facilitated bookings.

*(Table continued over the page...)*

DMS Purpose	Interpretation of the Purpose
4. <b>To support knowledge management for tourism development.</b>	<p>One panel member argued that the DMS could be used to collect and store information from DMS users, analyse the stored data, and distribute relevant knowledge to every stakeholder in the destination to support their decision-making process. One panel member gave an example of the Glasgow ICT platform related to the knowledge management functions of the DMS:</p> <p style="padding-left: 40px;">I think you can take an example from Glasgow because they are developing the destination dashboard where they use ICT to help them in terms of how they make decisions on how they want to manage and promote the destination. Not just forward facing [the ICT platform], but it can mine the data coming from online information to be able to make some decisions about when to promote new festivals or a new type of attractions or to say when the destination is at its peak. (DP1)</p>
5. <b>To promote individual tourism products as well as the destination as a whole.</b>	<p>A commonly held belief among the panel members is that one of the purposes of the DMS is to be a promotional platform for the destination. The DMS is recognised for its purpose of acting as a promotional channel for tourism destinations and the services offered, both as standalone and integrated tourism products.</p>
6. <b>To support the DMO in managing the distribution and the standard of tourism products.</b>	<p>The panel members argued that a DMS can aid the DMO management role by controlling the distribution system, thus reducing the power gap between big global tourism companies and local tourism businesses. A DMS can also serve as a quality control tool for the tourism products in the destination by promoting standardised tourism services. Furthermore, using the DMS as a distribution system can help the DMO to reduce economic leakage through external intermediaries such as online travel agencies (e.g., Booking.com, Expedia). One member explained the DMS's role in coordinating tourism products in the destination.</p> <p style="padding-left: 40px;">The principal aim [of the DMS] is independencies of [the DMO] as a management body of the destination, because you [the DMO] don't want to rely on online travel agencies, or some other kind of content aggregator, whatever is there on the web to represent the destination. So, with the DMS, the destination [the DMO] basically says, "Hey, we want to be in charge, and we want to represent ourselves and keep control of the information and the distribution channel", so I think those principles haven't changed. It is still the same today. (DP 13)</p>

*(Table continued over the page...)*

DMS Purpose	Interpretation of the Purpose
7. <b>To frequently monitor tourism development in the destination for evaluation purposes.</b>	<p>A few panellists proposed that the DMS can serve as a tool to aid the DMO in monitoring tourism development in the destination. Some examples of conditions in the destination that should be monitored are potential hazards, tourism impacts and the use of tourism destination resources. A DMO can use the monitored conditions in the destination to evaluate tourism development strategies. One member explained the need for DMS monitoring functions, particularly to enable the tourism destination authority (the DMO) to improve their destination planning and management process. By having the latest data on the condition of the tourism destination, the DMO can produce responsive solutions and innovations for destination management.</p> <p style="padding-left: 40px;">We know that tourism [destination] is very dynamic, so the DMS can help to monitor the development in the tourism industry that can influence tourism activity and recommend responses that can be done by also considering all possibilities with a view to formulating solution or innovation for the destination... The DMS can also function to record recent tourism development, which can be used in the future for tourism development evaluation sources in Indonesia, particularly with the new breakthrough going on, like the establishment of a Tourism Authoritative Body for priority and super priority destinations. (DP4)</p>
8. <b>To support sustainable tourism implementation in the destination.</b>	<p>The panellists suggested that the DMS can play a role in helping DMOs manage and implement sustainable management strategies in the destination. The DMS can support the DMO in implementing the three sustainability tourism principles, managing carrying capacity, promoting environmental conservation, and raising community awareness of tourism development, to help the community gain benefits from tourism.</p>

The eight primary purposes of the DMS derived from the findings from the Delphi interviews (round 1) were listed in the Delphi questionnaire (round 2). The analysis of second round responses shows that the emergent DMS purposes passed the threshold for panel consensus. The second-round survey also invited the panel members to give feedback on the initial list of the purposes. Within this feedback, a panellist suggested (re)considering the use of “control”, given the word can give a negative impression:

The word “control” [in purpose no. 6] does not sound friendly, particularly with small-medium enterprises and local family businesses, which must be developed to fulfil certain tourism business standards in the destination. “Develop” is a better fit for the Indonesian situation. (DP8)

The above feedback was instrumental in refining this DMS purpose. The panel suggested replacing the word “control” with “manage”, which is more in line with the context of the destination governance. The revised list of the main purposes of the DMS comprises the findings that were accepted by over 70% of the expert panel members and the DMS purposes that were revised based on the feedback from the panel in the

round two questionnaires. The revised list of DMS purposes were shared in the third round questionnaire, allowing the researcher to capture consensual answers from the experts. In this final round, the threshold for a consensus was set at 90% and the IQR value of at least 1 or smaller (see section 3.2.5c). Table 7.3 shows the analysis results from the Delphi round two and three survey. Panel consensus was reached for five of the DMS purposes, but three were rejected. Table 7.3 shows the analysis results from the Delphi round three questionnaires. The purposes that were not accepted as consensual answers are written in red.

**Table 7.3. Delphi Round Two and Three: DMS Purposes**

DMS Purpose	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. To facilitate collaboration among tourism destination stakeholders.	(100.0%) Accepted	5 (1)	13 (100%)	Accepted
2. To be the official portal to access information about the tourism destination.	(83.3%) Accepted	4 (1)	12 (92.3%)	Accepted
3. To support the efficient delivery of tourism services in the destination.	(91.7%) Accepted	4 (2)	9 (69.3%)	Rejected
4. To support knowledge management for tourism development.	(100.0%) Accepted	4.5 (1.5)	11 (84.6%)	Rejected
5. To promote individual tourism products as well as the destination as a whole.	(91.7%) Accepted	5 (0.25)	13 (100%)	Accepted
6. To support the DMO to manage the distribution and the standard of tourism products.	(83.3%) Accepted and Revised	5 (1)	13 (100%)	Accepted
7. To frequently monitor tourism development in the destination for evaluation purposes.	(100.0%) Accepted	5 (1)	12 (92.3%)	Accepted
8. To support sustainable tourism implementation in the destination.	(100.0%) Accepted	5 (1.25)	11 (84,6%)	Rejected

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel who completed the Delphi round three questionnaire.

### 7.3. DMS Main Functions

Destination website functions can be used to characterise and differentiate a DMS from other ICT platforms. DMS functions entail content or features that are accessible to website users. The results covered in this section provide an understanding on the type

of content or features on the website that makes the DMS stand out from other ICT platforms.

The panellists were asked a series of questions about DMS functions and characteristics. The panel identified 14 functions (Table 7.4). The functions were listed in the Delphi round two questionnaire to gain further feedback from the panel. The round two questionnaire captured perceptions, asking the panellists to state whether they agreed with each of the proposed functions. Analysis of the round two survey data suggests that functions 1, 5, 13 and 14 can be rejected, with less than 70% agreeing that this was one of the main functions of the DMS.

**Table 7.4. Delphi Round One: DMS Main Functions**

DMS Main Function	Interpretation of the Function
1. <b>Providing certification for the tourism products that are presented in the DMS.</b>	The management body and operator of the DMS verify the businesses that will appear in the DMS and provide them with certification. The DMS only allows tourism businesses that have a quality assured certification to feature on the website.
2. <b>Organisation and coordination of DMS content, to manage information flows and support back-office functions of the DMS.</b>	<p>The DMS should have a structure that manages the information flow in the system to be published on the website. The flow of information in the DMS should involve local stakeholders in the content creation process. The quote below indicates that the involvement of tourism stakeholders in the content creation to be published on the website is a unique function of the DMS.</p> <p>I think the organisational structure, the control dimension, the type of the information and the way it is collected which make the difference from simple website.... I would say the critical [feature] is the distributed approach to collecting information. Instead of having one central database with only one entity entering data, we can have a distributed kind of system where information is fed into the system and displayed in a uniform way. (DP13)</p>
3. <b>General (non-commercial) information about the tourism destination; for example, destination profile, features and tourism related public services.</b>	Information in the DMS should contain non-commercial information about the tourism destination, such as profiles of geographical features, history or cultural features of the destination and public services in the destination that relevant for the visitors.

*(Table continued over the page...)*

DMS Main Function	Interpretation of the Function
<p>4. <b>Information about economic opportunities arising from tourism development, like supply line gaps and job market openings.</b></p>	<p>The panellists agreed that the DMS can be a tool to provide information about ongoing opportunities that arise from tourism development and activities from which local communities, including local businesses, can benefit. The information includes business opportunities to support local tourism industry development like agriculture supply and workforce needed for hotel development in the destination. One panel member said that the DMS has to offer information related to the opportunities raised from tourism development that are accessible to the local community:</p> <p style="padding-left: 40px;">[The] information needed [to be featured] is the information related to preparation phase of the development tourism destination. The information includes information about supply needed tourism development, information about human capital and the job market. (DP7)</p>
<p>5. <b>Information about tourism-related volunteering opportunities.</b></p>	<p>Some panellists suggested that the DMS should provide information on tourism activities in the destination, including volunteering activities such as contributing at local cultural events. The volunteering opportunities on the website can be accessible to visitors or local tourism stakeholders.</p>
<p>6. <b>Information about tourism-related policies, regulations and experts' advice to business and community groups in the destination.</b></p>	<p>Some panellists suggested that the DMS must provide information about tourism policies, laws and regulations, and their impact on tourist activities and the tourism industry in the destination. The information on tourism regulation includes formal laws and unwritten regulations, like a code of conduct or local wisdom.</p>
<p>7. <b>A portal that links to any digital platforms related to distribution of the destination's tourism products.</b></p>	<p>Some panellists suggested that as a destination ICT platform, the DMS should be a hub for all digital platforms related to the tourism activities in the destination. The digital platform should include a local digital marketplace and links to local businesses' websites or social media accounts.</p>
<p>8. <b>Information about the destination's tourism success indicators and the latest progress towards achieving targets.</b></p>	<p>According to the findings, the DMS, as the primary ICT platform supporting the DMO's role in managing destinations, should provide information on local tourism development indicators for the destination and the latest achievement of those indicators. This information is intended to enable users of the DMS to keep track of local tourism developments. One panel member explained how the inclusion of a dashboard on the DMS could be used to track tourism development using growth statistics such as the number of tourist arrivals.</p> <p style="padding-left: 40px;">My view of the dashboard can look like live-feed information about the number of visitors and present the distribution of the tourists in the form of spatial information. (DP4)</p>

*(Table continued over the page...)*

DMS Main Function	Interpretation of the Function
<p>9. <b>Live feed or real-time information about events in a tourism destination; for example, natural disasters that impact tourism activity.</b></p>	<p>The findings suggest that the DMS, as a DMO supporting tool, must have the capacity to relay live conditions in the destinations to help the DMO monitor tourism resources and facilities. Monitoring live conditions in the destinations could support the DMO decision-making process and enable the DMO to respond to an abnormal situation in the destination. For example, the DMO, with the help of the DMS, could provide an emergency response in the event of a disaster, or provide extra staff if there is a delay in tourism services. One panel member described the significance of a live feed to the DMO, saying that real-time information would enable better and more responsive solutions to any tourism issues occurring in the destination.</p> <p style="padding-left: 40px;">[The advantage of a dashboard is that] we can view tourism resources like the officers so that when emergency situations occur, we can see whoever can respond the earliest. For example, like in Padar, if the visitor number increases significantly, automatically [we will know] the number of officers needed in the area. (DP4)</p>
<p>10. <b>A system that can be used to collect, store and analyse information from users.</b></p>	<p>The panellists recommended that the DMS must be able to collect and store data from the website in the server. The DMS should be able to use the stored data and provide information, like tourist behaviour, to the relevant users of the DMS so they can make informed decisions about taking part in or gaining benefit from local tourism development.</p>
<p>11. <b>A feedback function where visitors can provide information about their experiences.</b></p>	<p>Several panellists reiterated that the DMS must have a function to allow destination stakeholders to have two-way communication with tourists or potential tourists. This communication function should enable visitors to provide feedback about their experiences at the destination, and it should also allow destination stakeholders to address tourists' queries related to the tourism products in the destination as part of the tourism destination community.</p>
<p>12. <b>An interactive communication channel between tourists and destination stakeholders.</b></p>	<p>According to the findings, the DMS must have a function to allow users to communicate with the DMS operator. The feature could be in the form of comments and a feedback box that the users can use to place a text message.</p>
<p>13. <b>Promotional content in various media for tourism products individually and for the destination as a whole.</b></p>	<p>A couple of panellists perceived that the DMS has to provide promotional content about the tourism products available in the destination and about the host region as a tourism destination. The promotional content can be featured as textual information or via multimedia, such as video or pictures.</p>

*(Table continued over the page...)*

DMS Main Function	Interpretation of the Function
<b>14. E-commerce and transactional functions for local tourism businesses represented in the DMS, enabling booking and the purchase of tourism services.</b>	The panel members agreed that the DMS must provide e-commerce and transactional functions that enable local tourism products to be accessed by visitors more efficiently. These functions would enable tourists or potential tourists to book or purchase tourism products through the DMS.

Within the second-round survey, several panellists offered recommendations as to how the DMS functions listed could be improved. One panel member, who was familiar with Indonesia tourism conditions, explained why tourism product promotion and e-commerce content do not fit with the DMS within the Indonesian context. DP5 argued that Indonesian regulations and laws do not support the DMS, which is mostly operated by the government body, to have a commercial function:

The e-commerce feature does not align with Indonesia's unique socio-political setting. As per the law, the government body, which is often the authority of the tourism destination in Indonesia, is not permitted to engage in commercial activities. (DP5)

The above quote offers an explanation as to why the “E-commerce and transactional functions for local tourism businesses...” function was not accepted by some of the Delphi panel members as one of the main functions of the DMS.

Feedback on the list of functions generated from the interviews highlighted that the main functions of the DMS had not yet been captured. For example, DP2 suggested that the DMS should have an interactive map that contains tourism information within the geographical context of the destination, taking advantage of advanced technology such as metaverse and augmented reality. DP9, however, argued that the DMS should convey the progress of local sustainable tourism practices based on agreed indicators. Both recommendations were subsequently added to the list for the round three questionnaire.

Table 7.5 shows the analysis results from the Delphi round two and three surveys. Panel consensus was reached for nine of the DMS main functions, but three (shown in red) were rejected as they did not meet the threshold (see section 3.2.5c).

**Table 7.5. The Delphi Round Two and Round Three: DMS Main Functions**

DMS Main Function	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. Providing certification for the tourism products that are presented in the DMS.	(66.7%) Rejected			
2. Organisation and coordination of DMS content, to manage information flows and support back-office functions of the DMS.	(100.0%) Accepted	4 (1)	13 (100%)	Accepted
3. General visitor information about the destination; for example, destination profile, features and tourism-related public services.	(83.3%) Accepted	4 (1)	13 (100%)	Accepted
4. Information about economic opportunities arising from tourism development, such as gaps in the tourism supply chain and job market openings.	(75.0%) Accepted	4 (0.75)	11 (84.6%)	Rejected
5. Information about tourism-related volunteering opportunities.	(66.7%) Rejected			
6. Information on tourism-related policies, regulations and experts' advice to business and community groups in the destination.	(91.7%) Accepted	4 (0.25)	12 (92.3%)	Accepted
7. A portal that links to any digital platforms related to distribution of the destination's tourism products.	(83.3%) Accepted	4 (1)	13 (100%)	Accepted
8. Information about the destination tourism success indicators and the latest progress towards achieving targets.	(83.3%) Accepted	4.5 (1.25)	11 (84.6%)	Rejected
9. Live feed or real-time information about events in a tourism destination; for example, natural disasters that impact tourism activity.	(100.0%) Accepted	5 (1)	13 (100%)	Accepted
10. A system that can be used to collect, store and analyse information from users.	(91.7%) Accepted	4.5 (1)	13 (100%)	Accepted

*(Table continued over the page...)*

DMS Main Function	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
11. A feedback function where visitors can provide information about their experiences.	(75.0%) Accepted	4 (1)	13 (100%)	Accepted
12. An interactive communication channel between tourists and destination stakeholders.	(83.3%) Accepted	4.5 (1)	13 (100%)	Accepted
13. Promotional content in various media for tourism products individually and for the destination as a whole	(66.7%) Rejected			
14. E-commerce and transactional functions for local tourism businesses represented in the DMS, enabling booking and the purchase of tourism services.	(50.0%) Rejected			
15. Destination sustainable tourism targets and the progress in achieving them.	Added	4 (1)	12 (92.3%)	Accepted
16. Incorporating augmented reality for destination 3-D interactive mapping	Added	4 (1.5)	11 (84.6%)	Rejected

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel who completed the Delphi round three questionnaire.

The nine accepted DMS main functions were the consensus of the Delphi method. Those DMS main functions then classified into five themes. Table 7.6 presents the five themes and their affiliated DMS main functions emerged from the Delphi study. The interpretations of these themes are presented in Table 7.7.

**Table 7.6. DMS Main Functions – Themes and Functions**

<b>DMS Function Theme</b>	<b>DMS Functions</b>
1. <b>DMS Content Management</b>	<ul style="list-style-type: none"> <li>▪ Organisation and coordination of DMS content to manage information flows and support back-office functions of the DMS.</li> </ul>
2. <b>Visitor Information Services</b>	<ul style="list-style-type: none"> <li>▪ General visitor information about the destination; for example, destination profile, features and tourism-related public services.</li> <li>▪ Information on tourism-related policies, regulations and experts' advice to business and community groups in the destination.</li> <li>▪ A portal that links to any digital platforms related to distribution of the destination's tourism products.</li> </ul>
3. <b>Tourism Destination Monitoring</b>	<ul style="list-style-type: none"> <li>▪ Live feed or real-time information about events in a tourism destination; for example, natural disasters that impact tourism activity.</li> <li>▪ Destination sustainable tourism targets and the progress in achieving them.</li> </ul>
4. <b>Communication Channel</b>	<ul style="list-style-type: none"> <li>▪ A feedback function where visitors can provide information about their experiences.</li> <li>▪ An interactive communication channel between tourists and destination stakeholders.</li> </ul>
5. <b>Data Aggregation System</b>	<ul style="list-style-type: none"> <li>▪ A system that can be used to collect, store and analyse information from users.</li> </ul>

**Table 7.7. DMS Main Functions – Themes and Interpretations**

<b>DMS Function Theme</b>	<b>Interpretation of the Theme</b>
1. <b>DMS Content Management</b>	This theme represents the DMS function that controls the information flow within the system, including managing the source and the output of the information on the website.
2. <b>Visitor Information Services</b>	The three functions under this theme provide tourism-related information of the destination it represents.
3. <b>Tourism Destination Monitoring</b>	This theme represents the two DMS functions that monitor tourism development in the destination.
4. <b>Communication Channel</b>	The two functions under this theme enable information sharing among the users of the DMS.
5. <b>Data Aggregation System</b>	This theme represents the DMS function that collects, stores and analyses information that comes into the system.

## **7.4. DMS Beneficiaries**

The purpose of the DMS was examined further by determining for whom the DMS was established. Figuring out the main beneficiaries of the DMS helps rationalise why particular DMS purposes were suggested and, to some extent, the reasoning behind the

functions applied in the DMS. The DMS beneficiaries query was explored in all three rounds of the Delphi study. In the first-round interviews, the experts were asked to suggest which tourism actors benefit from the DMS. The results indicate that there are two types of DMS beneficiaries: direct and indirect beneficiaries.

*Direct beneficiaries* refer to the stakeholders benefitting from the DMS by directly accessing and using the system, while *indirect beneficiaries* are the tourism actors positively impacted by the operation of the DMS without directly connecting to the DMS network. The interview responses suggest that the Delphi panel members were sometimes divided on whether stakeholders were direct or indirect beneficiaries of the DMS. For example, some of the panel members suggested that the DMO gains direct benefits from the DMS as the system supports its practices, particularly in promoting tourism destinations, while other panel members believe that the DMO gains (indirect) economic benefits through the sales of tourism products businesses that feature in the DMS. Table 7.8 illustrates the Delphi panel members' answers to the DMS beneficiaries question asked in the round one interviews.

**Table 7.8. Delphi Round One: DMS Beneficiaries**

<b>Direct Beneficiaries</b>	<b>Indirect Beneficiaries</b>
1. Destination management organisation (DMO) or tourism destination authority	1. Destination management organisation (DMO) or tourism destination authority
2. Community and community groups	2. Tourism businesses
3. Tourists	3. Tourists
4. Tourism businesses	
5. Tourism resources	

To clarify which of the beneficiaries of the DMS belonged to which group, the round two questionnaire tasked the panellists with classifying each of the beneficiaries. The DMS beneficiaries list comprised five key beneficiaries: (1) Destination management organisation (DMO) or tourism destination authority, (2) Community and community group, (3) Tourists, (4) Tourism businesses, and (5) Tourism resources. As part of the same question, the Delphi panel members were invited to name other DMS beneficiaries, aside from the ones in the list, and place them in either the direct or indirect group. Table 7.9 shows the results from this question.

**Table 7.9. Delphi Round Two: DMS Beneficiaries**

Direct Beneficiaries			Indirect Beneficiaries		
DMO or tourism destination authority	75.0%	Accepted	DMO or tourism destination authority	23.3%	Rejected
Community or community groups	83.3%	Accepted	Community and community groups	11.1%	Rejected
Tourists	75.0%	Accepted	Tourists	22.2%	Rejected
Tourism businesses	91.7%	Accepted	Tourism businesses	11.1%	Rejected
Tourism resources	33.3%	Rejected	Tourism resources	66.7%	Rejected
Recommended Beneficiaries					
The national tourism organisation				Added	
Non-governmental organisations				Added	
Press and media				Added	
Academics				Added	

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two questionnaire.

Table 7.9 shows that there was no consensus among the panel members as to who are the indirect beneficiaries of the DMS, as the five proposed key beneficiaries in that group all had agreement levels below 70%. At the same time, there was a consensus among the panel that DMOs or tourism destination authorities, community and community groups, tourists and tourism businesses are direct beneficiaries of the DMS. Table 7.10 presents four more tourism stakeholders that the Delphi panel members suggested were also primary beneficiaries of the DMS.

The list of accepted DMS direct beneficiaries and the recommended beneficiaries that had emerged from round two were considered as the main beneficiaries of the DMS for the third-round question. Table 7.10 shows the analysis results from the Delphi round three questionnaires. Panel consensus was reached for four of the beneficiaries of the DMS, but three were rejected. The four accepted beneficiaries from round three are the final findings of this Delphi study on DMS beneficiaries. The Delphi panel were not consensually agreed that residents and community groups are the main beneficiaries of the DMS.

**Table 7.10. Delphi Round Three: DMS Main Beneficiaries**

<b>Beneficiary</b>	<b>Median (IQR)</b>	<b>Consensus Level</b>	<b>Result</b>
The national tourism organisation	4 (1)	12 (92.3%)	Accepted
Sub-national or local destination management organisation (DMO) or tourism destination authority	5 (1)	12 (92.3%)	Accepted
Local residents and community groups	5 (1.25)	11 (84.6%)	Rejected
Tourists	5 (1)	13 (100%)	Accepted
Tourism businesses	5 (1)	12 (92.3%)	Accepted
Non-governmental organisations	4 (1.25)	11 (84.6%)	Rejected
Press and media	4 (2)	10 (76.9%)	Rejected
Academics for teaching and research purposes	4 (2)	9 (69.2%)	Rejected

Note: Based on the responses from the 13 expert panel members who completed the Delphi round three questionnaire.

## 7.5. Evaluation Criteria for DMS Success

Evaluation criteria can be used to measure the success of a DMS, particularly in terms of its role in tourism development within a destination. The panel of experts were questioned about DMS evaluation criteria over the three rounds of the Delphi study. In the interviews, the panel members were asked about success criteria for a DMS. Nine criteria to measure the success of a DMS emerged (Table 7.11).

The nine criteria were listed in the second round questionnaire to get the expert panel's perceptions and feedback. The analysis of the Delphi round two responses shows that nine of the DMS success criteria that emerged from the Delphi round one interviews passed the 70% threshold for panel consensus. The two success criteria that did not meet this threshold were "The number and type of comments received from DMS users" and "The value and volume of tourism product sales through the DMS", indicating that these two criteria are not appropriate for evaluating the success of the DMS.

The Delphi round two questionnaire invited the panel members to give feedback on the initial list of DMS success criteria derived from the findings from the interviews. The expert panel members were also invited to add their own suggestions of DMS success criteria that were not in the original list from round one.

**Table 7.11. Delphi Round One: DMS Success Criteria**

DMS Success Criterion	Interpretation of the Criterion
1. <b>Tourism's economic benefit to the local community; for example, job creation, income</b>	<p>The DMS can be evaluated through its economic benefit to the local community. The DMS's success is reflected by improving tourism benefits to local stakeholders. One of the panellists explained the significance of DMS benefits to the local community, particularly economically, to measure the DMS success:</p> <p>...the primary measure of success is the degree to which the local community benefits from the businesses generated by the website. From my perspective, that is the overwriting concern: what is in it for the people who live there, the people whose land and sea you're going to buy and experience, and what they get out of that purchase.... The value proposition is how it [tourism] enriches the lives of the people whose land your guest is on. The next important thing then is how good is the website at helping the businesses it presents to be profitable. What services does it provide to the businesses and individuals and everything on the website? What services does it provide and how do those services directly support the businesses? (DP12)</p>
2. <b>Tourism's impact on the environment</b>	<p>The Delphi panel members suggested that the DMS's success should be seen from its implications for sustainability practice in the destination, particularly in reducing tourism's negative impacts on the local environment. Thus, the DMS must accommodate functions that can support local conservation programmes, such as raising awareness of tourism stakeholders on environmental sustainability agendas.</p>
3. <b>How user-friendly the interface of the website is for the users</b>	<p>The Delphi panel members suggested that the DMS's success can be measured from its website design. The panel members believe that one indicator of a successful DMS is that the users can easily explore the website.</p>
4. <b>The ease of managing and administrating the DMS for the system operator</b>	<p>The Delphi panel members consider that a successful DMS should be easily operated by the management body so that the DMS operator can acquire the optimum benefit from the system. Some of the Delphi panel members also believe that the DMO can easily ensure the information quality in the destination website if the DMS can be easily operated.</p>

*(Table continued over the page...)*

DMS Success Criterion	Interpretation of the Criterion
5. <b>The number and type of comments received from DMS users</b>	<p>One of the criteria to measure DMS success suggested by the Delphi panel members to measure DMS success is user engagement. The number of comments and amount of feedback on the DMS contents can be used to measure user engagement with the DMS. In this case, the success of the DMS relates to the high number of comments received through the DMS functions. One panel member suggested that feedback, complaints and comments are important variables to evaluate DMS success:</p> <p style="padding-left: 40px;">I expect tourists can interact with tourism destinations via DMS, including asking questions or complaining with the view to developing better tourism destinations in the future. On the one hand, for tourists to report complaints to be answered can give them certain satisfaction, and for destination management organisation, the complaint can serve as feedback that can be followed up on or can be used for evaluation purposes. (DP4)</p>
6. <b>The value and volume of tourism product sales through the DMS</b>	<p>According to the panellists, the successful DMS can be measured through the number or value of tourism product sales through the DMS. The Delphi panel members suggested that the number of sales or revenue gains through the e-commerce functions of the DMS should be used to measure DMS success criteria.</p>
7. <b>Quality of the information on the website; for example, information accuracy, reliability, usability</b>	<p>The panellists argued that information quality is important for a successful DMS. Information quality depends on the accuracy, reliability and usability of the information for the users. One panel member highlighted the importance of information quality for DMS success:</p> <p style="padding-left: 40px;">Information quality for sure [should be a criterion for the DMS success], and its dimensions like accuracy, up to date and richness and completeness. So, information quality for me is central to the DMS. Because that is where they [DMS] can compete with other kinds of online platform or presence of tourism providers. (DP13)</p>
8. <b>Website position on search engines</b>	<p>One of the DMS evaluation criteria that emerged from the Delphi round one interviews is the exposure of the destination website. The panel members suggested that the DMS's success can be seen in its website domain position in the search engine. The higher the website URL is positioned in the search engines when destination-related keywords are searched, the more successful the DMS is.</p>

*(Table continued over the page...)*

DMS Success Criterion	Interpretation of the Criterion
9. <b>Website traffic statistics</b>	The Delphi panel members also suggested that DMS success can be measured by the number of visitors to the website. The number of registered visitors and the variety of their profile is part of the traffic statistics suggested by the panel members as evaluation criteria for measuring DMS success. A DMS is perceived to be successful if the website has many users and the users come from a wide range of countries. These metrics suggest that the DMS has reached large audience.

One of the panel members argued that using the number of tourism product sales as an evaluation criterion for DMS success is not applicable in the Indonesian context as third-party platforms are a more effective distribution channel for tourism products:

In the Indonesian context, tourism product sales are better managed by the third-party online travel agent. (DP5)

DP5's comment explains why the value and volume of tourism product sales through the DMS criterion did not pass the consensual answers threshold. Another panel member focused on the number of tourism programmes the DMS can support and its effectiveness in facilitating those programmes.

Number of tourism programmes and initiatives that are supported by the DMS and to be evaluated for future tourism development. (DP6)

The list comprises of the DMS success criteria from round one that were accepted by the expert panel members and the additional suggestion from the Delphi from the panel feedback in the round two survey, were asked in the second questionnaire.

The second questionnaire (round three) was based on the list of the accepted and added DMS success criteria from the first survey. Panel consensus was reached for six of the DMS success criteria, but two were rejected. The two proposed DMS success criteria that did not meet the consensus threshold were "Tourism's benefit to the local community; for example, job creation and income" and "Tourism's impact on the environment".

Table 7.12 shows the analysis results from the Delphi round two and three questionnaires analysis. Once again, the DMS success criteria that were not accepted as consensual answers are written in red. The six accepted criteria from the Delphi round three questionnaire are the final findings of this Delphi study on DMS success criteria. The accepted DMS success criteria were then classified into two themes: "DMS design", which is related to easy navigation and operation of the website, and "DMS performance" as an ICT platform, which is related to the users' engagement with the platform, its exposure and its ability to facilitate tourism initiatives.

**Table 7.12. Delphi Round Two and Three: DMS Success Criteria**

DMS Success Criterion	Delphi Round 2		Delphi Round 3	
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. Tourism's benefit to the local community; for example, job creation and income	(83.3%) Accepted	4.5 (2)	9 (69.2%)	Rejected
2. Tourism's impact on the environment	(100.0%) Accepted	5 (1)	11 (84.6%)	Rejected
3. How user-friendly the interface of the website is for the users	(83.3%) Accepted	4 (1)	13 (100%)	Accepted
4. The ease of managing and administrating the DMS for the system operator	(91.7%) Accepted	4.5 (1)	13 (100%)	Accepted
5. The number and type of comments received from DMS users	(66.7%) Rejected			
6. The value and volume of tourism product sales through DMS	(58.3%) Rejected			
7. Quality of information provided; for example, information accuracy, reliability, usability	(91.7%) Accepted	5 (1)	13 (100%)	Accepted
8. Website ranking on search engines	(91.7%) Accepted	4 (1)	12 (92.3%)	Accepted
9. Website traffic statistics	(91.7%) Accepted	5 (1)	12 (92.3%)	Accepted
10. List and evaluation of DMS-enabled tourism programmes	Added	5 (1)	12 (92.3%)	Accepted

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel who completed the Delphi round three questionnaire.

Table 7.13 presents the two themes and their affiliated DMS success criteria as emerged from the Delphi study.

**Table 7.13. DMS Success Criteria – Themes and Criteria**

<b>DMS Success Criteria Theme</b>	<b>Affiliated DMS Success Criteria</b>
1. <b>DMS Design</b>	<ul style="list-style-type: none"><li>▪ How user-friendly the interface of the website is for the users</li><li>▪ The ease of managing and administrating the DMS for the system operator</li><li>▪ Quality of information provided; for example, information accuracy, reliability, usability</li></ul>
2. <b>DMS Performance</b>	<ul style="list-style-type: none"><li>▪ Website ranking on search engines</li><li>▪ Website traffic statistics</li><li>▪ List and evaluation of DMS-enabled tourism initiatives</li></ul>

## **7.6. Summary of Findings: DMS Terminology**

This section provides a summary of the key results from the Delphi Study. The consensus definition of the DMS that emerged from the three-round Delphi study is:

A destination management system (DMS) is a destination-focused knowledge-based information and communication technology (ICT) platform operated by the destination management organisation (DMO).

The DMS facilitates collaboration and decision-making processes of all tourism stakeholders by connecting them through the DMS network and supports the DMO to perform its marketing and management responsibilities.

The DMS definition comprises three main elements:

1. The DMS is recognised as a destination focused knowledge-based information and communication technology (ICT) platform
2. The DMS facilitates collaboration and decision-making processes of all tourism stakeholders
3. The DMS supports destination marketing and management.

Furthermore, as a knowledge-based ICT:

4. The DMS plays a role in facilitating the local stakeholders' network and collecting, aggregating and disseminating knowledge.

The DMS roles identified from the proposed definition is aligned with the DMS main purposes found from the Delphi study:

1. To facilitate collaboration among tourism destination stakeholders.
2. To be the official portal to access information about the tourism destination.
3. To promote individual tourism products as well as the destination as a whole.

4. To support the DMO in managing the distribution and standard of tourism products.
5. To frequently monitor tourism development in the destination for evaluation purposes.

Most of the DMS roles outlined above were established purposes of the DMS, as discussed in the literature review, particularly in section 2.4.3, except for the purpose "(5) To frequently monitor tourism development in the destination for evaluation." This specific purpose aligns with the concept of a knowledge-based destination ICT platform, as the monitoring function requires the collection of information to inform decision-making for tourism development evaluation at the destination.

As shown in Table 7.8 and Table 7.9, the DMS functions that emerged from the Delphi study can be classified into several themes: DMS content management, visitor information services, tourism destination monitoring, communication channels, and data aggregation system.

Furthermore, the DMS purposes emerged from the Delphi method can be accommodated with the DMS functions that emerged from the same study:

1. To facilitate collaboration among tourism destination stakeholders  
– can be accommodated with features related to the **DMS content management** and **communication channel** functions.
2. To be the official portal to access information about the tourism destination  
– can be accommodated with functions related to **visitor information services** and **communication channels**.
3. To promote individual tourism products as well as the destination as a whole  
– can be accommodated with function related to **visitor information services**.
4. To support the DMO in managing the distribution and standard of tourism products  
– can be accommodated with functions related to **content management** and **visitor information services**.
5. To frequently monitor tourism development in the destination for evaluation purposes  
– can be accommodated with functions related to **tourism destination monitoring** and **data aggregation system**.

To conclude, the Delphi study identified two themes of DMS success criteria: DMS (website) performance and DMS design. This finding suggests that the expert Delphi panel evaluated the success of the DMS based on its effectiveness as an information provision platform for visitors. In line with the DMS success criteria finding, a few of the Delphi panel members argued that DMS transactional functions are inconsistent with the Indonesian context due to its rigid regulation.

## **Chapter 8. Delphi Study: Future DMS, Sustainable Tourism and Community Participation**

This chapter begins by presenting the findings from the Delphi study introduced in Chapters 3 and 6, focusing specifically on sustainable tourism practices facilitated by the destination management system (DMS) and providing insights into how these systems can support environmentally and socially responsible tourism. The findings related to DMS-enabled community participation initiatives are then presented with a focus on the specific functions within the DMS that encourage and facilitate local community engagement in tourism. The chapter concludes by outlining the identified challenges and providing recommendations for the future development of DMSs in developing regions, with a specific focus on Indonesia.

As outlined in previous chapters, round one of this Delphi study laid the groundwork, whereas round two acted as a validation process, allowing the panel members the opportunity confirmed or provided feedback on the initial findings. Consensus was sought in the third and final round. It was deemed to have been reached if the interquartile range (IQR) was 1 or less, and 90% or more of the expert panel members selected a 4 or 5 or 1 or 2 on the scale.

### **8.1. DMS-Enabled Sustainable Tourism and Community Participation**

As discussed in section 2.3.2, the DMS is considered to have a role in implementing sustainable tourism, particularly in the host destination. This chapter reports the findings related to the interrelationship between the DMS and sustainable tourism, particularly its extension to community participation.

#### **8.1.1. DMS-Enabled Sustainable Tourism Practices**

This section seeks to explore, through the three rounds of the Delphi study, how the DMS can enable and support sustainable tourism practices. In round one, each of the 14 expert panel members was asked about the type of sustainable tourism practices that can be enabled by the DMS. Data analysis from the interviews revealed eight sustainable tourism practices that the DMS can enable. Table 8.1 shows these DMS-enabled sustainable tourism practices and their descriptions.

**Table 8.1. Delphi Round One: DMS-Enabled Sustainable Tourism Practices**

DMS-Enabled Sustainable Tourism Practices	Interpretation of the Sustainable Tourism Practice
<p>1. <b>Prevent leakages from the tourism economy by reducing dependence on external intermediaries such as online travel agents.</b></p>	<p>The DMS can be a subsidiary for a tourism products distribution system that multinational companies mostly own. Tourism economic leakage can be reduced if the destination has its own the distribution system managed by a DMO. One panel member explained how the DMS can prevent economic leakage by managing local tourism product distribution.</p> <p>I think DMS can contribute to sustainability because, ultimately, there is no intermediary like OTA [online travel agents] or platforms that take away the profit. In terms of income distribution in the destination, the service providers and community are more likely to benefit through the DMS because of the aspect of control and immediate distribution [of the local economy]. DP13</p>
<p>2. <b>Provide information about sustainable tourism targets.</b></p>	<p>The DMO can provide information about the sustainable tourism targets for the destination through its DMS, raising users' awareness of local, sustainable tourism initiatives and open the possibility for them to be involved in any sustainability programmes at the destination.</p>
<p>3. <b>Monitor the progress of sustainable tourism implementation.</b></p>	<p>Several panellists suggested that the DMS could support sustainable tourism practices by monitoring and tracking the progress of sustainable tourism programmes. This would enable the management of up-to-date achievements in sustainable tourism initiatives. By administering and maintaining records of these developments, the DMS could assist local stakeholders, particularly the DMO, in making informed decisions to assess and improve ongoing tourism efforts.</p>
<p>4. <b>Manage tourism inventory.</b></p>	<p>The DMS can help DMOs monitor tourism inventory (a destination's tourism resources and amenities). This includes managing the number and availability of accommodation and public transportation capacity, thereby aiding in the control of seasonal variations in tourism activities within the destination. Monitoring inventory can support local tourism businesses' decision-making, particularly in forecasting sales and costs.</p>

*(Table continued over the page...)*

DMS-Enabled Sustainable Tourism Practices	Interpretation of the Sustainable Tourism Practice
<p><b>5. Manage the various forms of destination carrying capacity by tracking the number of tourists in the tourism destination.</b></p>	<p>The DMS can function as a tool for monitoring tourist numbers at specific attractions, assisting destination authorities in managing visitor flow according to the destination's carrying capacity. One participant suggested that the DMS could track visitor numbers using e-commerce systems, which can regulate crowd sizes by controlling the availability of bookings. For example, this panel member highlighted how the Banyuwangi destination website employs such a system to manage carrying capacity effectively.</p> <p style="padding-left: 40px;">One of the examples [of a DMS's contribution to sustainable tourism] is the DMS case of Banyuwangi, as one of the system functions is visitor management through the e-ticketing feature. This function is very useful, particularly in the COVID-19 pandemic era, to get the information about the density of visitor [numbers] in the tourist attractions area. (DP6)</p>
<p><b>6. Manage the impact of tourism on key resources.</b></p>	<p>The DMS can be employed to monitor the impact of tourism activities on local resources, including natural environments and public amenities relevant to tourism within the destination. DMS information related to tourism resources can support local tourism stakeholders in better managing the balance between tourism activities and the sustainability of the resources. One panel member argued that combining the DMS with other ICT tools, such as GIS, allows DMS operators to map and recognise the latest condition of tourism resources and facilities in the destination. They also suggested that DMOs can use tourism resources and facilities information to create innovation in tourism management:</p> <p style="padding-left: 40px;">If you can integrate your DMS with a geographical information system (GIS) as a tracking tool, as evidenced in previous tourism research, GIS can be used to map and understand inventory and resources used and how you can plan your destination [using that information] if you can combine those types of ICT tools which already exist. I think as a planner, you can use the DMS to help you make decisions about new tourism sites, different types of tourists use and pattern, and also make decisions on temporality. (DP1)</p>
<p><b>7. The DMO can prioritise sustainable products to be promoted in the DMS.</b></p>	<p>A few of the panellists suggested that the DMS can encourage local tourism businesses to raise their competitiveness by only promoting sustainability-certified tourism products on the DMS website. Moreover, sustainable product certification for tourism businesses can improve tourism activities' compliance with sustainable tourism development commitments, leading to better competitiveness for tourism products and destinations.</p>

*(Table continued over the page...)*

DMS-Enabled Sustainable Tourism Practices	Interpretation of the Sustainable Tourism Practice
8. <b>Provide education and raise awareness of sustainable tourism practices among all tourism stakeholders.</b>	The Delphi panel members argued that the DMS can be used as a tool to provide education about sustainable tourism practices applicable to the destination. Providing know-how information on sustainable tourism implementation in the destination can improve DMS users' knowledge of local, sustainable tourism programmes, potentially leading to better participation in sustainable tourism initiatives.

The second round of the Delphi study sought the opinions and feedback of the Delphi panel members on the eight DMS-enabled sustainability practices that were identified from the Delphi round one interview data. The Delphi panel members were given a questionnaire and asked to state whether they agreed with each of the eight DMS-enabled sustainable tourism practices identified from the first round. Data analysis of the questionnaires showed that the seven of the eight DMS-enabled sustainable tourism practices were accepted by at least 70% of the panel members. The only practice that did not reach consensus was no. 1. “Prevent leakages from the tourism economy by reducing dependence on external intermediaries such as travel agents” (see Table 8.2).

The Delphi round two questionnaire also included comment boxes where the panel members could give more detailed feedback about the eight DMS-enabled sustainable tourism practices that emerged from the previous round. One of the experts argued that local DMOs have limited public trust in performing commercial roles, such as acting as intermediaries for tourism businesses in the destination.

As the DMO in Indonesia is mostly a government body, the accountability and public trust for the DMO to manage the e-commerce system for local tourism businesses is relatively low. The role of preventing tourism economic leakage is better performed by a travel agent (Indonesian OTA such as Traveloka and pegipegi.com) or locally owned tourism businesses. (DP5)

In the comment, DP5 also argued that strengthening the capacity of Indonesian-based travel agents and tourism businesses to improve their online presence by managing their own websites and social media platforms is a better approach to preventing tourism economic leakage within the Indonesian context. Increasing capacity would enable tourism businesses to reduce their dependency on international intermediaries such as Expedia and Booking.com. DP5’s comment provides an explanation of why DMS-enabled sustainable tourism practice no. 1. “Prevent leakages from the tourism economy by reducing dependence on external intermediaries such as online travel agents” was not supported by many of the expert panel members and so was not accepted as a consensual answer.

The expert panel members also made several valuable suggestions for additional sustainability practices that the DMS can enable in their feedback in the Delphi round

two questionnaires. One particularly noteworthy suggestion is that the DMS can play a crucial role in promoting tourism-related job opportunities:

[The DMS can] contribute to the direct economic dimension of sustainable tourism practice by providing tourism job information and contribute to the local economy. (DP8)

DP8's comment introduces a new perspective and enriches the discussion on the potential of the DMS in supporting economic sustainability in the tourist destination. DP8's suggestion was thus added to the list of DMS-enabled sustainable tourism practices.

The final list of DMS-enabled sustainable tourism practices based on the findings from the Delphi round two questionnaire was then presented in the Delphi round three questionnaire to get the panel perception on the DMS enabled-sustainable tourism practices. The Delphi round three questionnaire was based on this list of the accepted and added DMS-enabled sustainable tourism practices from round two. Based on the Delphi round three survey analysis, panel consensus was reached for all (8) of the DMS-enabled sustainable tourism practices. Table 8.2 shows the analysis results from the Delphi round two and three questionnaires. The DMS-enabled sustainable tourism practice in the table that did not pass the consensus level threshold in each round is written in red.

**Table 8.2. Delphi Round Two and Three: DMS-Enabled Sustainable Tourism Practices**

DMS-Enabled Sustainable Tourism Practice	Delphi Round 2		Delphi Round 3		Result
	(Consensus Level) Result	Median (IQR)	Consensus Level		
1. Prevent leakages from the tourism economy by reducing dependence on external intermediaries such as online travel agents.	(58.3%) Rejected				
2. Provide information about sustainable tourism targets.	(83.3%) Accepted	4.5 (1)	12 (92.3%)		Accepted
3. Monitor the progress of sustainable tourism implementation.	(91.7%) Accepted	4.5 (1)	12 (92.3%)		Accepted
4. Manage tourism inventory.	(91.7%) Accepted	5 (1)	13 (100%)		Accepted
5. Manage the various forms of destination carrying capacity by tracking the number of tourists in the tourism destination.	(91.7%) Accepted	5 (1)	12 (92.3%)		Accepted

*(Table continued over the page...)*

DMS-Enabled Sustainable Tourism Practice	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
6. Manage tourism key resources.	(83.3%) Accepted	5 (1)	12 (92.3%)	Accepted
7. The DMO can prioritise sustainable products to be promoted in the DMS.	(83.3%) Accepted	5 (1)	13 (100%)	Accepted
8. Provide education and raise awareness of sustainable tourism practices among all tourism stakeholders.	(100.0%) Accepted	5 (1)	12 (92.3%)	Accepted
9. Contribute directly to the economic dimension of sustainable tourism practice by providing tourism job information.	Added	4 (1)	13 (100%)	Accepted

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel who completed the Delphi round three questionnaire.

The eight accepted practices from the Delphi round three questionnaire are the final findings of this Delphi study on DMS-enabled sustainable tourism practices.

### 8.1.2. DMS-Supported Community Participation Practices in Tourism Development

The focus of this research is to explore how the DMS can support community participation practice in tourism development, particularly at the destination. One of the main questions asked in this Delphi study is related to the expert panel members' perceptions about how the DMS can support the implementation of community participation in tourism. Questions about DMS-supported community participation were also asked in the three rounds of Delphi to get the consensual answer.

In the Delphi round one semi-structured interviews, the expert panel members were asked for their opinions on whether DMS can support community participation in tourism development. All 14 members of the Delphi panel agreed that the DMS can support community participation in tourism development. Thus, the following questions were asked in the interview:

1. What type of community participation practices can the DMS support?
2. And how does the DMS support those practices?

Analysis of the data from the semi-structured interviews suggested six community participation practices that the DMS can support. Table 8.3 displays these community

participation practices that can be supported by the DMS and the interpretation of each practice, as emerged from the interviews.

**Table 8.3. Delphi Round One: DMS-Supported Community Participation Practices**

DMS-Supported Community Participation Practice	Interpretation of the Practice
<p>1. <b>Tourism-related community development programmes provided by a tourism authority or tourism businesses.</b></p>	<p>The panellists suggested that the DMS can help to improve community access to tourism opportunities in the destination by sharing information about tourism-related community development programmes available in the destination that were held by the DMO or other stakeholders in the destination such as private companies. One of the panel members (DP3) shared a few examples of how the DMS could support tourism-related community development programmes. For example, DP3 suggested, the DMO could require tourism businesses, such as international chain hotels, to create programmes that involve the local community, such as hosting an exhibition to promote craft products of SMEs based in the destination, as part of their certification:</p> <p style="padding-left: 40px;">I think this may involve corporate social responsibility (CSR). In this case, for local tourism businesses to have a certification, there is an obligation for them to be involved in a community development project; for instance, to showcase locally produced craft in the hotel for free. (DP3)</p> <p>The DMS could support the programmes by promoting them to the relevant stakeholders.</p> <p>Promoting community development programmes through digital media, such as DMS, enhances their accessibility for the local community.</p>
<p>2. <b>The DMS facilitates the coordination of tourism products and communication between tourism destination stakeholders.</b></p>	<p>The DMS can be used to facilitate communication between stakeholders and support local stakeholders' coordination, particularly in helping tourism businesses collaborate on their products to increase their value. One panel member suggested that digital technologies like the DMS can facilitate communication with various tourism service providers in the destination to coordinate their products and so improve the value of those products.</p> <p style="padding-left: 40px;">The DMS can provide a function that allows the user to create itinerary, and thus link to small local businesses like restaurants, merchandise sellers, boutiques, batik shops and other tourism businesses that form part of the visitor experience. (DP2)</p>

*(Table continued over the page...)*

<b>DMS-Supported Community Participation Practice</b>	<b>Interpretation of the Practice</b>
3. <b>The DMS can help to improve the community's sense of belonging towards their area and culture.</b>	The DMS can increase the local community's sense of belonging to their home region by promoting its unique features as a tourism destination along with local community traditions and culture, such as local cultural events. Thus, the DMS can contribute to foster motivation that stimulates the local community to participate in tourism development.
4. <b>The DMS can present local tourism products and enhance the competitiveness of the tourism offerings.</b>	The Delphi experts suggested that the DMS can improve the competitiveness of tourism products by certifying the products that appear on the website and coordinating them with other products to enhance their value. By certifying the tourism products that feature on the destination website, the DMS can help to improve the credibility and capacity of local businesses, particularly SMTE and informal businesses that mostly have very little capital and infrastructure to compete with bigger businesses.
5. <b>The DMS can offer information on commercial and non-commercial opportunities for local stakeholders that arise from tourism development.</b>	<p>The panellists suggested that the DMS can disseminate information on tourism industry development in the destination, including the resources and tourism inventories, so that the local community can identify opportunities like job markets or business opportunities arising from the local tourism industry. One of the panellists provided an example of how DMS can disseminate information about inventories. They stated that if local businesses supplying food to hotels are informed about the current availability of accommodation in the area, this information would enable these businesses to forecast market trends and manage their products more effectively.</p> <p>I think through the DMS, local community can access tourism development strategies in the destination and the DMS can also provide an interface where they can ask about anything related to the tourism development in the destination, particularly public data like the number of toilets and where they are located. If community can access this kind of data, particularly small businesses owners can easily predict their market. Another example is, if the number of hotels in the destination is known, then the businesses owner can predict how much rice and meat is needed for their market share and how they can meet the minimum inventory for the market share. So that their businesses can be more efficient because all of the decision is evidence-based. (DP4)</p>

*(Table continued over the page...)*

DMS-Supported Community Participation Practice	Interpretation of the Practice
6. <b>The DMS can be a local sharing economy platform for tourism products in the tourism destination.</b>	<p>The DMS was suggested as an alternative platform to the likes of Uber and Airbnb, to facilitate the sharing economy of local tourism products in the destination. One of the experts (DP12) shared his experience in managing a website that resembles a sharing economy platform in one of the destinations in Indonesia, suggesting that his website could be replaced by the DMS website, to help homestay owners and individual guides to offer their services. DP12 explained that his website currently helps local communities in a remote destination to gain benefits from tourism by offerings rooms to stay and sharing knowledge of their environment as a guide:</p> <p style="padding-left: 40px;">Currently, there are 110 homestays on the website [to be promoted] ... So yes, a destination management website can certainly dramatically affect the incomes, and the practices of the providers or the community that it represents. (DP12)</p>

The second round of the Delphi study sought the opinions and feedback of the experts on the six community participation practices that the DMS can support that were identified from the Delphi round one interview data. The Delphi experts were given a questionnaire and asked to state whether they agreed with each of the six community participation practices that the DMS can support. Data analysis of the questionnaires showed all six community participation practices that the DMS can support were accepted by at least 70% of the panel members and so passed the threshold as consensual answers.

The Delphi round two questionnaire also included comment boxes where the panel members could give more detailed feedback about the six DMS-supported community participation practices that emerged from the previous round. One significant suggestion was that word “improve” in practice 3, “The DMS can help improve the community’s sense of belonging towards their area and livelihood”, be changed to “protect”:

Related to improving community sense of belonging [practice 3], I would say that a DMS should strive to PROTECT a community's livelihood and sense of belonging. (DP12)

DP12’s remark implies that the local community’s livelihood and sense of belonging are inherently tied to its members, suggesting that the DMS’s role is to sustain these elements rather than to establish or enhance them. However, in practice 3, “The DMS can help improve the community's sense of belonging towards their area and livelihood”; the word “improve” is not only applied to the sense of belonging but also the effort to do so. The description of practice 3 explains that the DMS can improve community members sense of belonging towards their respective area/environment by promoting and conserving local culture, customs and traditions. Meanwhile, protecting local community

livelihoods can also mean that DMS can help conserve the community's way of living, such as how the community gains its primary income and daily activities at the destination. Thus, DP12's recommendation can give a different interpretation of the meaning of practice 3. To accommodate DP12's recommendation while also keeping the initial meaning of practice 3, in the next round, was divided into two separate and distinct practices: 3. The DMS can help to sustain and improve the community's sense of belonging towards their area and livelihood, and 4. The DMS can support the promotion and conservation of the community's local culture, values and customs. The Delphi round two questionnaire format is self-administered, which offers only a limited way to confirm the meaning of the feedback; the meaning can be validated in round three, however, by testing each practice for consensus.

A second suggestion of the DMS-enabled community participation practices that emerged from the Delphi round two questionnaire was that the DMS can facilitate participatory planning functions like electronic polling.

The DMS provides e-participative and e-governance function. (DP10)

An e-participative function is one that enables direct community contribution towards decision-making processes through, for example, e-polling and online communication with the tourism authorities. Following DP10's suggestion, e-participation was added to the DMS-enabled community participation practices list.

In contrast, e-governance is associated with the delivery of public services from the government. Providing an online application for business permits is one example of e-governance services. While the DMO, as the operator of the DMS, has responsibilities that are intertwined with government functions, some DMOs do not possess the power of government in providing public services. In the Indonesian context, while most DMOs functions are managed by the regional government level, the body responsible for managing tourism development is only a small section of the government and has limited authority. An e-government function, then, is more relevant to a government services website than a tourism website; that is, a DMS. This suggestion, therefore, was not added to the list. The feedback from the Delphi round two questionnaires informed revisions of the list of DMS-enabled community participation practices that were tested for consensus in Delphi round three.

The Delphi round three questionnaire was based on this list of the accepted and added DMS-enabled sustainable tourism practices from round two. The round three questionnaire responses analysis indicated that only four of the eight proposed DMS-supported community participation practices in tourism development were accepted as the consensual answer. Those DMS-supported community participation practices are: 2.

The DMS facilitates coordination of tourism products and communication between tourism destination stakeholders; 4. The DMS can support promotion and conservation of the community's local culture, value, and custom; 5. The DMS can present local tourism products and enhance the competitiveness of the tourism offering; and 8. The DMS can support the local community to become directly involved in tourism decision making (polls and e-voting as examples).

Table 8.4 shows the analysis results from the Delphi round two and three questionnaires. The proposed DMS-supported community participation practices in tourism development that did not pass the consensus threshold on each round are written in red. The four accepted practices from the Delphi round three questionnaire are the final findings of this Delphi study on DMS-supported community participation practices in tourism development.

**Table 8.4. Delphi Round Two and Three: DMS-Supported Community Participation Practices in Tourism Development**

DMS-Supported Community Participation Practice	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. The DMS can help to improve community capacity for tourism by sharing information about workshops and community development programs provided by a tourism authority or tourism businesses.	(91.7%) Accepted	4 (2)	9 (69.3%)	Rejected
2. The DMS facilitates coordination of tourism products and communication between tourism destination stakeholders.	(100.0%) Accepted	5 (1)	13 (100%)	Accepted
3. The DMS can help to sustain and improve the residents' sense of belonging to their area.	(75.0%) Accepted	4 (2.25)	9 (69.3%)	Rejected
4. The DMS can present local tourism products and enhance the competitiveness of the tourism offering.	(91.7%) Accepted	4.5 (1)	13 (100%)	Accepted
5. The DMS can offer information on commercial and non-commercial opportunities for local stakeholders that arise from tourism development.	(91.7%) Accepted	4 (1.25)	11 (84.6%)	Rejected

*(Table continued over the page...)*

DMS-Supported Community Participation Practice	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
6. The DMS can be a local sharing economy platform for tourism products in the tourism destination.	(75.0%) Accepted	4 (1.25)	11 (84.6%)	Rejected
7. The DMS can support promotion and conservation of the community's local culture, values and customs.	Added	5 (1)	12 (92.3%)	Accepted
8. The DMS can support the local community to become directly involved in tourism decision-making (polls and e-voting as examples).	Added	4.5 (1)	12 (92.3%)	Accepted

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel who completed the Delphi round three questionnaire.

### 8.1.3. How Can DMS Functions Support Community Participation Practices?

DMS-supported community participation practices were explored through the answers to two questions (posed in section 8.1.2):

1. What type of community participation practices can the DMS support?
2. And how does the DMS support those practices?

While section 8.1.2 focused on what type of community participation practices can be supported by the DMS (the first question), this section focuses on revealing the Delphi experts' perceptions on how the DMS can support community participation through its functions (the second question). The responses of the expert panel members to this second question were explored in the three rounds of the Delphi study. The data analysis from the first round of Delphi identified eight ways in which DMS functions can support community participation. Table 8.5 shows the DMS functions that can support community participation practices that emerged from the Delphi round one interviews and a description of each function.

**Table 8.5. Delphi Round One: DMS Functions that Support Community Participation Practices**

<b>DMS Function that Supports Community Participation Practices</b>	<b>Interpretation of the Function</b>
1. <b>A web page for local tourism businesses that can be managed by the businesses' owners.</b>	A DMS should provide a promotional webpage that can be managed and operated by local businesses to help them extend their market share. The DMS, through the website, can help local businesses open better access to tourism benefits.
2. <b>Interactive communication tool for local tourism stakeholders.</b>	According to the Delphi panellists, communication tools for tourism stakeholders to communicate among themselves and the DMS operator allows information sharing in the destination for local tourism management purposes.
3. <b>Feedback and recommendation features for users, including the community.</b>	The Delphi experts suggested that the DMS can facilitate a function that allows the DMS users to post complaints or recommendations on local tourism development. This type of DMS function can help the community report an irregular situation caused by tourism, such as blocked access to public space because of private tourism activities.
4. <b>Content in the DMS is produced by the local community and community groups.</b>	The Delphi experts suggested that the DMS can facilitate a function that allows local community involvement in co-producing its content. This DMS function allows the community to participate in the operation of the DMS.
5. <b>Incorporating game elements with the DMS content and features to attract local stakeholders to access the DMS.</b>	The Delphi panellists argued that adopting a gamification function in the DMS can invite users, particularly local tourism stakeholders, including the community, to access the DMS.
6. <b>Information on local culture, customs and events.</b>	The Delphi experts suggested that DMS content that promotes and informs users about local community culture, customs and events can make the local community feel recognised and supported.
7. <b>Information on tourism destination development plans and strategies to raise community awareness towards local tourism development.</b>	The Delphi panellists suggested that the DMS can provide information about local tourism development plans and strategies, including sustainable tourism management initiatives, to help provide the community with the knowledge to be involved in local tourism development, evaluation and planning.
8. <b>Providing tourism development-related education, training and workshop content through the DMS.</b>	According to the Delphi panellists, DMS functions that share tourism-related education, training and workshop content, like local conservation programmes, improve local community capacity to participate in tourism development.

The second round of the Delphi study sought the opinions and feedback of the Delphi panel members on the eight DMS functions that can support community participation practices that were identified from the first round. The Delphi panel members were given a questionnaire and asked to state whether they agreed with each of the eight DMS functions. Data analysis of the questionnaires showed that seven of the eight DMS functions were passed the threshold as consensual answers. The only function that was not accepted was no. 5. "Incorporating game element with the DMS content and features to attract local stakeholders accessing the DMS".

The Delphi round two questionnaire also included comment boxes where the panel members could give more detailed feedback about the eight DMS functions that support community participation practices that emerged from the previous round. One notable suggestion emerging from this feedback was that the DMS could promote awards to recognise community members who contribute to tourism development, particularly those who foster sustainable tourism practices in the destination:

Proposes awards for sustainable tourism practitioners. (DP10)

The suggestion that the DMS could foster sustainable tourism practices in the destination by promoting awards for sustainable tourism practices was added to the list of DMS functions that can empower community participation, to be considered in the next round survey.

However, feedback from one round is not always intended to add to or amend categories on the list for the next round. For example, one expert panel member suggested that the DMS functions on the list are not always universally effective; that is, not every function will be effective in facilitating participation for every community in any destination.

Community needs and capacities and local infrastructure vary widely from place to place. A solution that works in one community may not even be deliverable in another. Customisation for local conditions and requirements is key. To be successful, solutions need to be devised in close consultation with host communities and must address their needs and customs. (DP12)

DP12's comment is noteworthy because it suggests that the impact of DMS functions on the community depends significantly on local conditions, and their comment is used again as a reference in the relevant discussion chapter (Chapter 10).

The Delphi round two questionnaire analysis resulted in a list of DMS functions that can support community participation practices, which have passed the accepted answer threshold and had accommodated the suggestion from the panel. The findings were asked in the Delphi round three questionnaire to get the consensus. The descriptive statistical analysis of the round three questionnaire responses shows that panel consensus was reached on six of the eight proposed DMS functions that support community participation practices. The two proposed DMS functions that support

community participation practices that did not pass the consensus threshold are written in red. The six accepted answers are the experts' consensus on DMS functions that can support community participation. Table 8.6 shows the analysis results from the Delphi round two and three questionnaires.

**Table 8.6. Delphi Round Two and Round Three: DMS Functions that can Support Community Participation Practices**

DMS Function that Supports Community Participation Practices	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. A web page for local tourism businesses that can be managed by the businesses' owners.	(75.0%) Accepted	5 (0.25)	12 (92.3%)	Accepted
2. Interactive communication tool for local tourism stakeholders.	(91.7%) Accepted	5 (1)	12 (92.3%)	Accepted
3. Feedback and recommendation features for users, including the community.	(91.7%) Accepted	5 (1)	13 (100%)	Accepted
4. Content in the DMS is produced by the local community and community groups.	(91.7%) Accepted	5 (1)	12 (92.3%)	Accepted
5. Incorporating game elements with the DMS content and features to attract local stakeholders to access the DMS.	(66.7%) Rejected			
6. Information on local culture, customs and events.	(100.0%) Accepted	5 (0.25)	13 (100%)	Accepted
7. Information on tourism destination development plans and strategies to raise community awareness towards local tourism development.	(91.7%) Accepted	4 (1.25)	11 (84.6%)	Rejected
8. Providing tourism development related education, training, and workshop content through the DMS	(83.3%) Accepted	4 (2)	10 (76.9%)	Rejected
9. Information about awards for individuals or organisations that excel in sustainable tourism practices.	Added	5 (1)	12 (92.3%)	Accepted

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel members who completed the Delphi round three questionnaire.

#### 8.1.4. Summary of DMS, Sustainability and Community Participation

The Delphi panel of experts indicated that a DMS can support four key community participation practices (see Table 8.4). The following summary lists the four practices and the panel members' perspectives on how these can be achieved through six different DMS functions (see Table 8.6).

1. The DMS facilitates coordination of tourism products and communication between tourism destination stakeholders
  - can be accommodated with functions related to **a web page for local tourism businesses that can be managed by the businesses' owners, interactive communication tool for local tourism stakeholders, and feedback and recommendation function for users', including the community**
2. The DMS can support the promotion and conservation of the community's local culture, values and customs
  - can be accommodated with functions related to **information on local culture, customs and events and information about awards for individuals or organisations that excel in sustainable tourism practices** functions
3. The DMS can present local tourism products and enhance the competitiveness of the tourism offering
  - can be accommodated with functions related to **a web page for local tourism businesses that can be managed by the business's owner and feedback and recommendation features for users, including community**
4. The DMS can support the local community to become directly involved in tourism decision-making (polls and e-voting are examples).
  - can be accommodated with functions related to **content in the DMS is produced by the local community and community groups and information about awards for individuals or organisations that excel in sustainable tourism practices.**

Most of the functions that can support community participation emerged from the Delphi study and were not recognised as DMS functions that enable community participation prior to this study. For instance, the communication channels found in most DMSs are intended to connect destinations (that is, DMOs or businesses) with tourists (Estêvão et al., 2020a). The findings on DMS functions as supporters of community participation practices suggest that the DMS has the capability to support community participation practices in the destination.

#### 8.2. Recommendations for Future DMS Development

The Delphi study conducted in this research also offered recommendations for future improvements in DMS development in developing countries, with a specific focus on

Indonesia. The Delphi panel of experts was asked about various aspects of DMS future development, including challenges, management and financial schemes, and recommendations for advancement. These findings are instrumental in addressing the research aim: “To explore the potential of the DMS role in supporting the implementation of community participation in tourism development”, and in particular, the third research objective: “To develop a community-focused DMS framework for Indonesia”.

### **8.2.1. Challenges to DMS Development**

Understanding the challenges to DMS development is essential before recommending improvements for a future community-focused DMS framework. The Delphi round one semi-structured interviews focused on the perceptions of the panellists about challenges that affect DMS development in developing countries settings, particularly in Indonesia. Analysis of the interviews data identified seven key challenges to DMS development:

1. Tourism authorities lack awareness of the importance of information technologies in tourism.
2. The community lacks awareness of the importance of information technologies in tourism.
3. Many digital platforms for tourism destinations are not designed to focus on and solve local tourism issues.
4. There is a lack of clarity about which entity should have the authority to develop the DMS.
5. Funding for DMS development is often not able to be sustained.
6. There is often insufficient human resource capacity to manage and use the DMS.
7. The political setting of Indonesia changes every five years, and this brings different development priorities.

A significant DMS development issue raised by the Delphi panel is the lack of contribution from DMS applications to address strategic issues in the destinations. The Delphi experts suggested that many digital tourism platforms, including the DMS, need to be designed to fit the local context. For example, the design needs to reflect the technology available in the destination and local demographic or destination stakeholders' aspirations related to tourism development. When asked about DMS development challenges, one panel member shared an example that illustrates the need for an ICT platform designed to accommodate local issues, which, in his case, is insufficient internet network infrastructure:

The thing about Agoda and Booking.com is not many of the homestays in Raja Ampat feature in it; even five years ago, very few of the homestays in Raja Ampat could connect to the internet. They don't have an internet connection available. The way we got around that was by using Telkom [the government-owned telecommunication provider] SMS network and having the booking request sent from the website form, be automatically translated into Bahasa Indonesia, and sent out as a text message to the homestay, and they can respond with (1) for yes, I want this booking, or (2) for no, I do not want this booking. And that would then trigger an automatic email response, the appropriate one to the guest. This service and the form of the DMO's website very much depend on the capacity of the community that it serves. (DP12)

Another significant issue identified by the panellists are related to human capital in the destination, particularly the management and development of the DMS. DMS management competencies restrict the sustainability of DMS development. One panel member suggested that a DMO's shortage of financial and human capital is often the result of the socio-political condition of the destination:

I think the problem is human nature and politics. Ideally, the DMO will put a lot of effort into training and convincing [the importance of ICT in tourism practice to local stakeholders]. But the DMO [usually] receives limited funding, and they are supposed to do whatever things [a lot], and often they don't have the skills needed either, because very often they are a political appointment, and usually non-technology people. They are either political, or they are advertising and marketing; that is what they are focused on. So, maybe it's a little bit the DMO's fault. (DP13)

In their interviews, the panel members suggested that political contexts are one of the main constraints to DMS development. The political cycle (election cycle) often affects government support for DMS development, particularly in Indonesia. A panellist argued that the short political cycle in Indonesia hinders the development of the DMS as the development focuses on changes in short term.

I think the DMS is better managed by an independent body that is free from the effect of the government period. I think one of the significant Indonesian challenges is the political cycle, which only lasts for five years, which makes government and government officials unable to focus on long-term plans. However, if we talk about platforms like DMSs, the benefits will be apparent in the long term. Therefore, we need a politically proof organisation [foolproof or resistant to political influence] to monitor the DMS. (DP4)

The second round of the Delphi study sought the opinions and feedback of the experts on the seven challenges to DMS development that were identified from the initial interview data. The Delphi panellists were given a questionnaire and asked to state whether they agreed with each of the seven challenges identified from the first round. Data analysis of the questionnaires showed all seven challenges were accepted by at least 70% of the panel members.

The Delphi round two questionnaire also included comment boxes where the panel members could give more detailed feedback about the seven DMS challenges that were identified from the round one interview data. One panel member suggested that discourse related to the concept and implementation of DMO and DMS is lacking in the

Indonesian context. In Indonesia, the DMO role is undertaken by the government body that holds authority in the destination, and any other option is hardly discussed.

Lack of information, reference and discussion about DMO and DMS in Indonesia.  
(DP7)

DP7's comment also implies that there is insufficient knowledge about DMOs and DMSs in Indonesia. A DMO is not a commonly known body in Indonesia, as most tourism destinations in Indonesia are governed by local authorities. Thus, discussion related to the ideal DMO structure, its roles and its DMS adoption is scarce. Notions of destination management, particularly in terms of a DMO and a DMS as its supporting digital platform, are not widely understood within the Indonesian context. This hinders the establishment and development of DMSs in Indonesia. Thus, another challenge was added to the list of the DMS development challenges that had been identified in round one: "Lack of information, reference and discussion about DMO and DMS in Indonesia". The Delphi round two analysis found eight DMS development challenges which passed the accepted answers threshold and were added to accommodate the feedback from the questionnaire responses.

The Delphi round three questionnaire was based on the list of the accepted and added DMS challenges from round two. As with the other questions in the Delphi study, the purpose of the Delphi third round was to try to get panel consensus on the challenges to DMS development. The Delphi panel members were asked about their perceptions of each of these DMS development challenges using a 5-point Likert scale. The descriptive statistical analysis (the median and inter-quartile range of the Likert scores) of the Delphi round three questionnaire results and the consensus levels (at least 11 of the 13 panel members who completed the Delphi round three questionnaire had to agree with the practice) shows that panel consensus was reached on only two of the eight proposed DMS development challenges: "Many digital platforms for tourism destinations are not built to focus on and solve local tourism issues", and "There is often insufficient human resource capacity to manage and use DMS". The two accepted challenges from the Delphi round three questionnaire are the final findings of this Delphi study on challenges to DMS development. Table 8.7 shows the analysis results from the Delphi round two and three questionnaires.

**Table 8.7. Delphi Round Two and Three: DMS Development Challenges**

DMS Development Challenge	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. Tourism authorities lack awareness of the importance of information technologies in tourism.	(91.7%) Accepted	4 (1.25)	10 (76.9%)	Rejected
2. The community lacks awareness of the importance of information technologies in tourism.	(83.3%) Accepted	4 (1.5)	9 (69.3%)	Rejected
3. Many digital platforms for tourism destinations are not built to focus on and solve local tourism issues.	(83.3%) Accepted	5 (1)	12 (92.3%)	Accepted
4. There is a lack of clarity about which entity should have the authority to develop the DMS.	(91.7%) Accepted	4.5 (1.25)	11 (84.6%)	Rejected
5. Funding for the DMS is often not able to be sustained.	(91.7%) Accepted	4 (2)	10 (76.9%)	Rejected
6. There is often insufficient human resource capacity to manage and use the DMS.	(83.3%) Accepted	4.5 (1)	12 (92.3%)	Accepted
7. The political setting of Indonesia changes every five years, and this brings different development priorities.	(83.3%) Accepted	5 (1.25)	9 (69.3%)	Rejected
8. There is a lack of information, reference and discussion about DMOs and DMSs in Indonesia.	Added	4 (2)	9 (69.3%)	Rejected

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel members who completed the Delphi round three questionnaire.

### 8.2.2. Recommended DMS Management Bodies and Funding

The important dimension of DMS management emerged as a dominant theme during the Delphi round one semi-structured interviews when the 14 expert panel members discussed the future development of DMS. The panel members' answers to questions about recommended approaches to DMS management centred around two topics: the DMS management body and the funding scheme. Some of the experts suggested that the status and structure of the destination management authority are imminent issues for the future of DMSs in Indonesia. Meanwhile, funding schemes for regional public ICT

platforms like DMSs have long been a challenge in Indonesia. Due to the significance of these two topics for the development of DMSs in Indonesia, issues around the DMS management body and the funding scheme were explored separately in the Delphi study. Thus, questions about recommended management bodies and questions about recommended funding schemes for DMSs were explicitly asked of the Delphi panel members over the three rounds of the Delphi study.

During the Delphi round one semi-structured interviews, the experts made some recommendations about alternative structures for the management body and alternative funding schemes. Each of these will now be addressed.

### ***DMS Management Bodies***

The recommendations for DMS management bodies that emerged from the Delphi round one interviews are described below.

- Community group

The panel members clarified that “community group” is an all-encompassing term that refers to the local people, and comprises destination hosts, business owners and residents. The panel members suggested that the DMS should be managed by community groups, particularly at regional-scale destinations, as the local people are considered to have a better attachment to the destination. One panel member explained that the local community's attachment to the destination will translate into responsibility for operating the DMS:

I think it will be better if the community manages it; even if the website is initiated by the government, it is better in the long term if the website is managed by the community. This is because if the community has a sense of belonging to the website, they will feel responsible for maintaining it. (DP11)

- Public-private partnership organisation

A “public-private partnership organisation” refers to a partnership involving government (public) and private entities, which can be dual ownership or other structures. The Delphi panel suggested that a DMS is better when it is managed by an organisation with both public and private roles in its operation. The public organisation, primarily a government body, is needed to better manage the connectivity of the DMS with public data such as transportation systems, or even to manage relationships and connectivity with larger-scale destinations such as national tourism digital platforms. However, DMS management also needs the capability of a private organisation to ensure a sustainable business model for the DMS. A panel member explained the weakness of having both public and private entities managing a DMS separately. The public entities, particularly governments of all scales in Indonesia, are too bureaucratic, which makes them,

as the management body of DMS, less flexible in how they structure and operate the system. The private sector, however, may face some challenges in accessing government resources, such as infrastructure and data controlled by the rigid bureaucracy. Thus, a public-private partnership organisation can be a solution for DMS management as both entities can reduce each other's limitations. In their interview, DP1 argued:

In terms of the infrastructure, I can see the DMS being managed by the public sector because the public sector will have control of the infrastructure needed to support the interoperability; however, that being said, we all sometimes know the bureaucracy (challenge) of the public system, ... But I think it should be a partnership, you know as a private entity they need access to some of the system which is developed by the government and the organisation needs to be connected to the government because at the end of the day as a destination, and as a regional destination, you still need to feed back into the broader country destination. (DP1)

- Private entity

A “private entity” refers to a commercial organisation unrelated to a public body. Some of the panellists suggested that a private entity should manage the DMS to avoid political disruption when the destination authority changes. In Indonesia, tourism development depends on government interests. Thus, the sustainability of the DMO, which is mostly a government-related body, is dependent on the elected government’s preference for the strategic sector that it wants to develop. Moreover, in Indonesia’s case, a private entity is perceived to be more neutral towards the companies that contribute to the destination economy. One panel member posited that a private entity is a more appropriate management body for the DMS in the Indonesian context as a commercial organisation will be more motivated than the government to develop the system:

In the Indonesian context, I am not putting much hope in the public sector, and mostly my reason is that in many [economic] sectors, the private sector’s role stands out. While NGOs and community groups may also have a chance to develop the DMS, but then the main question is their motivation. For me, economic motivation is more relevant to economic stakeholders. In contrast, NGOs may not have the capital to develop DMS in the long term. So, the most possible entity with the capacity and motivation to develop DMS is the private sector. The public sector does not have the motivation because the success or failure of the DMS will not influence their financial income. After all, the government official already has the designated salary. (DP8)

- Public entity

A “public entity” refers to a government body with authority in the tourism destination area. Some of the expert panel members argued that a DMS is better managed by a public entity as, in many cases, establishing the DMS needs significant funding, which is available mainly from a public source. Moreover, public entities are seen to have an obligation to ensure local stakeholders' well-being.

## ***DMS Funding***

The recommendations for alternative DMS funding schemes and sources that emerged from the Delphi round one interviews are now described.

- Public-private partnership funding

“Public-private partnership funding” refers to a financial structure that involves government funding of the DMS in collaboration with non-government-related funding. Some of the panel members suggested that the initial financing of the DMS should come from a public body as the principal authority of the destination, particularly given that the government bodies have more financial power in many regional destinations than other entities. A private entity, however, is seen by some as being more capable of managing the finances of the DMS, to ensure its profitability and hence its sustainability. A public-private funding scheme is seen, therefore, as bringing together the strengths of both partners, as the public body will bring sufficient capital for the initial development of the DMS and the private entity will have the management skills to ensure the DMS is profitable enough to operate sustainably. One of the panel members proposed an approach whereby a non-government entity could manage the DMS, but the DMS is funded by the government as part of their governing responsibility.

I proposed an approach where the DMS is managed by the private sector, such as consultants or private developers. However, a successful example [of a DMS] must be developed. However, the government has to have its share in the DMS funding as the destination’s principal owner. (DP7)

- Public funding

“Public funding” refers to government-sourced funding. Government funding is recommended for a DMS because, said the panel members, a destination’s digital platform is a public infrastructure that includes government authority and responsibility. One panel member argued that public funding for the DMS entails responsibility for its operator to develop the system to serve community needs.

I think a DMO needs funding from tax sources, and then they can worry about the residents and what the residents are saying. A private company is basically like Expedia, but just on a smaller scale, so they don’t necessarily worry about the [community] well-being. I think what we want is a public organisation with the mindset of a private entity. (DP13)

The second round of the Delphi study sought the opinions and feedback of the Delphi panel members on the recommended management bodies and funding schemes and sources for DMS that had emerged from the Delphi round one interview data. In the Delphi round two questionnaire, the panel members were asked to provide their recommendations on the ideal management bodies and funding schemes and sources

for the DMS in an open-ended question form (a comment box). The list of the previous round's findings was provided in the questionnaire as a reference for the panel members.

Some notable feedback and recommendations on DMS management bodies emerged from the Delphi round two questionnaire. One panel member believes that the DMS should be controlled by a company that can only be owned by the local (destination) community:

I believe that ownership and control of any DMO/DMS should belong to the destination community. The ideal ownership structure is a PT [LLC], shares which cannot be bought or sold, and are restricted to members of a local community group... (DP12)

DP12's comment clarifies the Delphi round one finding related to the DMS managed by a community group, particularly the panel's belief that a community group would operate a DMS better because of their attachment to the destination.

In contrast, a different panellist's comment strengthens the idea that the public sector is the ideal organisation to manage the DMS. DP2 suggested that a local government body would be the best organisation to manage the DMS as most of Indonesia's tourism spots are in remote areas, which the regional government could not easily reach. Accordingly, said this panel member, a local government body, such as a village authority, is the better body to manage the DMS in the Indonesian context:

The DMS should be managed by BUMDES [a village government-owned company]. (DP2)

Another expert recommended that management schemes like public-private partnerships should be written into the regulations, considering Indonesian bureaucracy's rigid regulation of government body operations. They suggested that the National Long-Term Tourism Plan would be an ideal place to state the permissible schemes:

Public-private partnership model and have to be stated in the RIPPARNAS [the National Long-term Tourism Plan] to ensure its sustainability. (DP8)

There was also a recommendation that a new form of management body, the multi-stakeholder organisation, be developed to manage DMSs in Indonesia, with one panel member suggesting that a DMS is better managed by an organisation that involves various stakeholders in the destination:

DMS should be managed by a multi-stakeholder organisation consisting of public-partnership organisation, community groups, private entity, government body and academics... (DP9)

In terms of a recommended funding scheme and funding sources for the DMS, one panel member suggested a hybrid model, namely that the government should fund the early development of the DMS until it can be profitable and hence self-funding:

In the early stage of DMS development, e.g., first 3 to 5 years, the government funds DMS, then DMS will be self-funded through its profit. (DP6)

Another panellist referred to the public-private partnership funding model identified in the first round, noting that NGOs could also be involved in a public-private partnership funding model for DMS development:

[The] DMS can use government funding that collaborates with private companies and non-governmental organisations. (DP4)

Another suggestion that was offered is that the DMS could be funded through a venture capital (VC) scheme, through government funds to the DMS management body. VC is an equity financing model in which the investors gain an ownership share from their investment. In DP2's suggested funding model, the national government would provide VC to the DMS developer regardless of which body manages the system, which could be a private, public or public-private entity:

The DMS should be funded through the venture capital sourced from the national government grant. (DP2)

The list below summarises the findings from the analysis of the data from the question related to recommended management bodies and funding schemes and sources in the Delphi round two questionnaire. This is the list that was tested for consensus in the third round of the Delphi study.

- DMS Management Body
  - Public-private partnership scheme
  - Local-scale government-owned company such as BUMDES or village-owned corporations
  - Community-based corporation
  - Multi-stakeholder organisation
- DMS Funding
  - Public-private partnership funding
  - Public funding
  - Venture capital

As with the other questions in the Delphi study, the purpose of the Delphi third round was to try to get panel consensus on the management bodies and funding schemes and sources for DMS. The Delphi panel members were asked about their perceptions of each of the items in the above list in the round three questionnaire. Table 8.8 shows the analysis results from the Delphi round three questionnaires. The descriptive statistical

analysis of the round three questionnaire reveals that panel consensus was not achieved for any of the proposed DMS management bodies or funding schemes, and sources.

**Table 8.8. Delphi Round Three: DMS Recommended Management Body and Funding Scheme and Source**

List of Answers	Median (IQR)	Consensus Level	Result
<b>DMS Recommended Management Body</b>			
Public-private partnership scheme	4.5 (2.25)	10 (76.9%)	Rejected
Local scale government owned company such as village's owned corporation (Badan Usaha Milik Desa in Indonesia context)	3 (2.25)	7 (53.9%)	Rejected
Community-based corporation	3.5 (2.25)	8 (61.6%)	Rejected
Multi-stakeholder organisation	5 (2)	10 (76.9%)	Rejected
<b>DMS Recommended Funding Scheme and Source</b>			
Public-private partnership funding	5 (1.25)	11 (84.6%)	Rejected
Public funding	3 (1.5)	5 (38.5%)	Rejected
Venture or shared capital	3 (1.75)	5 (38.5%)	Rejected

Note: Based on the responses from the 13 expert panel members who completed the Delphi round three questionnaire.

Table 8.8 shows that the responses of the panel members on each of the items were spread out between the five points of the Likert scale. This means that all the options in each list could be right, according to the conditions of the destination, a finding that aligns with DP12's comment (in section 8.1.3) that suggests the solutions for DMS adoption are dependent on the context of the destination and close consultation with host communities is advised to provide the right solution.

### 8.2.3. Recommended Future DMS Development

This Delphi study also explored the panel members' perceptions regarding how the DMS should evolve in the future within the context of developing countries, with a particular focus on Indonesia. Once again, questions related to the perception of future DMS development were asked of the panel of experts over three rounds. The question asked in the round one semi-structured interview was: "How do you think the DMS should develop in the future?" The panel members' answers included predictions and recommendations for the future development of the DMS. Analysis of the data from the Delphi round one interview suggests eight possibilities that could apply to future DMS development:

1. The DMS will incorporate the latest advances in information technology.

The panellists suggested that DMS technological elements will be more advanced in the future by adopting and incorporating the latest progression of ICT tools. Panel members gave examples of advanced technologies like the Internet of Things (IoT), augmented reality (AR) and artificial intelligence (AI), which they believe will improve the capacity of the DMS to facilitate the evolving destination management role of the DMO.

2. The DMS will adapt to local technological needs to ensure greater local access to the DMS.

The panel members suggested that the DMS is going to be more adaptable to the local context of smaller-scale destinations (region or sub-region) by incorporating ICT applications that are applicable and accessible in the destination. They commented that improved applicability and accessibility of the DMS should expand its significance and benefit to the destination community.

3. The DMS will accommodate interactive communication features to facilitate conversation between all stakeholders.

As described by some of the experts, the communication features in many DMSs still focus only on one-way communication. The panel members believe that the DMS, in the future, will adopt the technology that enables interactive communication between all tourism stakeholders, which will allow the DMS to better support the DMO in its role of facilitating coordination and collaboration among the tourism stakeholders.

4. Information from the DMS will be the main reference point for decision-making for all stakeholders, particularly DMOs.

The panel members expect that information quality in the DMS will improve in the future so that the system can be the primary information source for destination stakeholders to make tourism-related decisions. One panellist hopes that future DMSs will be able to address information needs for both supply and demand sides:

...I hope in the future, DMS can be a decision-making support system, not only to give information to the public and tourists but also to guide every stakeholder in the destination to recognise alert [ to a threat] and contribute [opportunity] to improve the destination's reputation.... (DP9)

5. The DMS will be a key tool to collect and analyse data and distribute knowledge to all stakeholders.

The experts predict that the future DMS, with the help of advanced technology, will be able to support a smart tourism system for collecting and storing information,

analysing the data, and distributing knowledge to all destination stakeholders. This panel member below addressed the key role of DMS in the knowledge management of the destination within the smart tourism system.

If the destination really buy-in to a smart destination idea, I think that will strengthen the DMS. That will also put resources behind them [destination to develop a DMS] because then people will see the advantage of having the DMS and having the data fed into other smart tourism databases. So, this notion of aggregation of data, consolidation of data becomes more important for [destination within the] smart tourism concept. But not all destinations will go in this direction; that is only my hope. I hope that the smart tourism [discourse] will really show [tourism stakeholders] the power of owning data and will eventually improve the DMS significance. (DP13)

6. The DMS will be the primary representation of the tourism destination; that is, the source of official information and communication to the visitor.

The panellists highlighted the DMS's role as the primary representation of a tourism destination in the internet network, where the information it provides is reliable and safe for the users. One panellist described the situation where having the DMS as the official representation of the destination can be critical for tourism activities, particularly in fostering a quality tourism experience:

Referring to city branding theory (Kavaratzis, 2004), the website should be the primary communication tool, while in reality, the website is still used as a tertiary communication tool. An example can be seen from the Durian Village Festival of the Garut Regency, which became viral [on the internet], but the place itself does not have a website, nor is [the event] mentioned on the official website; most of the information is found in the search engine which is not official. In the end, the visitor ended up coming to the wrong place. (DP14)

7. The capability of the DMS to support sustainable tourism development practices will improve.

The panel members suggested that the capability of the DMS to support the implementation of sustainable tourism practices will improve; therefore, the role of DMS in the sustainable tourism programmes of destinations will grow in importance. One panel member gave an example of a destination website that has an application that can help tourists to travel responsibly within the destination by calculating the carbon footprint of their itinerary, thus supporting sustainable tourism practices:

There is a website that provides interactive questionnaires like the visitor accommodation preferences, the type of transportation and others. So that the website can calculate the carbon footprint and the benefit of one's travel that is received by the destination and can be manifested in game-like operations. In the future, this thing can be developed, particularly in supporting the implementation of sustainable tourism. (DP11)

8. The DMS will be the main monitoring tool for tourism development performance in the destination.

The panellists expect that the DMS will be used more by the DMO in the future to monitor tourism development in the destination to achieve local tourism

development goals. According to the experts on the Delphi panel, the DMS is expected to have a few monitoring functions, such as monitoring hazards and disasters in the destination and recording the achievement or challenges of local tourism development, to be used for evaluation purposes. The monitored and recorded data can be retrieved at any time to provide a reference for future destination management practice.

The second round of the Delphi study sought the opinions and feedback of the panel members on this list of eight possibilities that could apply to future DMS development, which had emerged from the initial round interview data. In the round two questionnaire, the panel members were asked to tick if they agreed with each of the possibilities and they were also invited to add to the list and/or add further comments.

Data analysis of the questionnaires showed that seven of the eight future DMS possibilities were accepted by at least 70% of the panel members, and so passed the threshold as consensual answers. The only possibility that was not accepted was no. 4. "Information from DMS will be the primary reference point for decision-making for all stakeholders, particularly the DMO". Although the panel members suggested additional ideas for the future of the DMS, most of their suggestions could be accommodated within the list of predictions and suggestions for the future that had emerged from the previous round. The Delphi round two analysis result in the list of predictions and possibilities of DMS development that passed the accepted answers threshold.

The Delphi round three questionnaire was based on this list of the accepted future DMS development possibilities from round two. The descriptive statistical of the round three questionnaire results and the consensus levels shows that panel consensus was reached on five of the eight predicted future DMS development. The three possibilities of future DMS that did not pass the consensus threshold are written in red. Table 8.9 shows the results of the Delphi round two and three analysis. The five accepted possibilities from the Delphi round three questionnaire are the final findings of this Delphi study on recommended future DMS development.

**Table 8.9. Delphi Round Two and Round Three: Future DMS Development**

Future DMS Development	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
1. The DMS will incorporate the latest advances in information technology.	(91.7%) Accepted	5 (1)	13 (100%)	Accepted

*(Table continued over the page...)*

Future DMS Development	Delphi Round 2	Delphi Round 3		
	(Consensus Level) Result	Median (IQR)	Consensus Level	Result
2. The DMS will adapt to local technological needs to ensure greater local access to the DMS.	(91.7%) Accepted	5 (1)	13 (100%)	Accepted
3. The DMS will accommodate interactive communication features to facilitate conversation between all stakeholders	(91.7%) Accepted	4.5 (1)	12 (92.3%)	Accepted
4. Information from DMS will be the primary reference point for decision-making for all stakeholders, particularly the DMO.	(66.7%) Rejected			
5. The DMS will be a key tool to collect and analyse data and distribute knowledge to all stakeholders.	(91.7%) Accepted	5 (1)	12 (92.3%)	Accepted
6. The DMS will be the source of official information and communication to the visitor	(83.3%) Accepted	4.5 (2)	10 (76.9%)	Rejected
7. The capability of the DMS to support sustainable tourism development practices will improve.	(100%) Accepted	5 (0.25)	13 (100%)	Accepted
8. The DMS will be the main monitoring tool for tourism development performance in the destination	(91.7%) Accepted	5 (2)	10 (76.9%)	Rejected

Note: Based on the responses from the 12 expert panel members who completed the Delphi round two and 13 expert panel members who completed the Delphi round three questionnaire.

#### 8.2.4. Summary of the Future Development of the DMS

Two main DMS development challenges were identified in this Delphi research:

1. **Many digital platforms for tourism destinations are not designed to focus on and solve local tourism issues.**
2. **There is insufficient human capacity to manage and use DMS.**

These two challenges could be solved by applying one of the aspirations for DMS future development to emerge from the Delphi study, namely that the **DMS will adapt to local technological needs to be able to ensure greater local access to DMS**. This solution means that the structure and technology of the DMS will recognise and accommodate for conditions at the destination so that the DMS can reach its potential.

The findings of this research as outlined in this research in chapter 4, 5, 6, 7 and 8 is discussed in the following chapter 9 and 10. The discussion of this research findings focus on addressing the research questions and objectives.

## **Chapter 9. DMS Capability to Support Community Participation**

This chapter integrates theoretical and empirical insights to examine how destination management systems (DMSs) can strengthen community participation in tourism development. It discusses the capability of DMS to support community participation practice, drawing on findings from the website evaluations and the Delphi study. The chapter begins with an overview of current DMS practices, both globally and within Indonesia, focusing on their capability to support community participation practice and the challenges of their adoption and development. It then explores exemplary adoption of DMS functions, particularly those that support community participation in tourism.

### **9.1. The DMS Role in Supporting Community Participation**

This section explores contemporary DMS adoption and its role in supporting community participation practice in tourism, as identified in this research. Several authors contend that DMS structures encompass information, communication, relationships, transactional, and technological functionalities (Benckendorff et al., 2019; Estêvão et al., 2020a; Wang & Russo, 2007). Findings from this current study reveal that these functionalities are presented to users through a variety of functions, commonly recognised as content or features in the destination website. The destination website serves as the interface between the DMS and its users (Benckendorff et al., 2019). Therefore, for the DMS to support community participation, the opportunity to do so must be evident through the website functions that are available on the destination website. The DMS has the potential to support community participation, provided that its website functions are designed to a degree that creates an environment that motivates and facilitates the host community to participate in tourism.

The MOA framework presented in the literature review (section 2.2.4) illustrates the “means” for community participation. The framework serves as a foundational component for the design of DMS functions, enabling it to realise its potential to support community participation practice. As introduced by Hung et al., (2011) the three dimensions of the MOA framework, motivation, opportunity and ability, serve as the antecedents that encourage the participation of community members in tourism development. The MOA framework has been adopted by several authors to explain the antecedents for an individual’s decision to act across various subjects and fields of study (MacInnis & Jarwosky, 1989; Rothschild, 1999; Wiggins, 2004). In the context of this doctoral research, the capability of the DMS to enable the antecedents for community participation is assessed based on the website’s capacity to serve as catalyst for

community to participate in tourism development which its role includes extending tourism benefits to the community (motivation), provide channels that facilitate community involvement in tourism initiatives (opportunity), and offer the necessary resources and capabilities for effective participation (ability).

The antecedents for community participation in tourism represented in the MOA framework, enabled by the DMS through its functions, are recognised in this research as “pull factors”. Both pull and push factors are well-established components of motivational theory in tourism studies (Noorhayati et al., 2016; Rathinan & Selamat, 2017; Unguren et al., 2021; Wang & Zhang, 2019). All these scholars commonly mention that *pull factors* refer to the external motivations that influence individuals’ decision to engage in an activity. In contrast, the *push factors* relate to the intrinsic elements of individuals that encourage them to commit to an activity. Most studies that discuss push and pull motivational factors focus on examining the tourist’s decision-making processes to visit a destination. One exception is the work of Noorhayati et al. (2016), which assessed the push and pull factors of local community participation in the tourism industry in Pahang (Malaysia). Noorhayati et al. suggested that community participation in tourism is primarily driven by pull factors, particularly economic incentives such as employment opportunities and additional income. Noorhayati et al. further mentioned that other pull factors, including personal satisfaction and attachment to the local environment, also play a role in influencing community members’ decisions to engage in tourism. This concept of pull factors aligns with the motivation component of the MOA framework, which posits that a community’s willingness to participate in tourism is shaped by both extrinsic and intrinsic motivations (Bettiga et al., 2018; Benedjma & Mahmoud, 2021; Hung et al., 2011).

The findings of this research indicate that the functions available on the destination websites have the potential not only to motivate community participation but also to facilitate it by providing accessible channels and improving community capacity for engagement. DMS functions, such as promotional pages for local tourism businesses, offer community members avenues to benefit from tourism by promoting their products or services to a broader market. Additionally, DMS functions that present information about local culture and traditions may strengthen community attachment to the destination. Both are examples of DMS functions capable of fostering extrinsic and intrinsic motivations for tourism participation. The effectiveness of participatory practices relies not only on community willingness, as noted by Noorhayati et al. (2016), but also on the medium and capacities that enable community participation in tourism. In this regard, DMS functions enable interactive communication to serve as engagement channels, while other functions enhance community capacity. Thus, the role of DMS as pull factors for community participation in tourism extends beyond motivational support

to include practical facilitation, addressing structural and cultural barriers to participation that are particularly prevalent in developing countries (Tosun, 1999).

Section 9.2 explores the potential of DMS functions to support community participation. This discussion highlights DMS functions that could act as pull factors for community involvement by creating value through both extrinsic and intrinsic motivation factors, enhancing community access to tourism participation through dedicated channels, and supporting capacity building for community engagement. Although DMSs have the potential to encourage community participation in tourism, the website evaluations, both global and Indonesian, indicate that many functions are primarily designed to address visitors' informational needs rather than to serve the destination community. This limitation is further discussed in the following section, focusing on the application of DMS functions that hold potential for supporting community involvement.

## **9.2. DMS-Enabled Means for Community Participation**

An assertion of this thesis is that the DMS's capability to support community participation at the destination is largely subject to its ability to adopt functions that can deliver motivation, opportunity and ability (MOA) value to the host community. Analysis of the data from both the website evaluations and the Delphi study has revealed that DMSs adopted in various global destinations including in Indonesia possess functions capable of delivering all dimensions of the MOA framework to the community.

The following subsections delve into specific DMS functions that support each dimension of the MOA framework, exploring the potential value these functions may offer to the host community and how they might strengthen community participation in tourism. The discussion of DMS-enabled motivation will highlight the system's capability to expand community access to tourism benefits, thereby fostering both extrinsic and intrinsic motivation for community participation in tourism. In contrast, the exploration of the opportunity dimension will focus on how the DMS can address practical challenges of community participation particularly to mediated community engagement with tourism development at the destination. The analysis of the ability dimension will centre on the DMS's capability to improve community capacity for effective participation in tourism initiatives. Overall, the following subsections will discuss how the various dimensions of the MOA framework can be facilitated by the DMS to support community participation, as well as the current state of their implementation.

### **9.2.1. The DMS-Enabled Motivation Dimension**

The analysis of the data from the website evaluations and the Delphi study suggests that the DMS, through its functions, both directly and indirectly connects the host community

to tourism benefits. The DMS functions that have the capability to enable the motivation dimension for community participation are presented in Table 9.1.

**Table 9.1. DMS Functions that Can Enable the Motivation Dimension**

Destination Website Evaluations		Delphi Study
Themes	DMS Functions	DMS Functions that Can Enable Community Participation
<b>Economic Benefits</b>	<ul style="list-style-type: none"> <li>• Promotion of local tourism businesses</li> <li>• Promotion of local events</li> <li>• Promotion of community managed tourism</li> <li>• Tourism services directory</li> <li>• Tourism-related job opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• A web page for local tourism businesses that can be managed by the businesses' owners.</li> </ul>
<b>Information about Potential Tourism Benefits</b>	<ul style="list-style-type: none"> <li>• Tourism and website traffic statistics</li> <li>• Information about tourism awards</li> </ul>	
<b>Community Acknowledgement</b>	<ul style="list-style-type: none"> <li>• Information about local history</li> <li>• Information about local culture</li> <li>• Information about local traditions and etiquette</li> <li>• Information about community members and groups</li> </ul>	<ul style="list-style-type: none"> <li>• Information on local culture, customs and events.</li> <li>• Information about awards for individuals or organisations that excel in sustainable tourism practices.</li> </ul>

Table 9.1 demonstrates that DMS functions can support the motivation dimension of the MOA framework for local communities through three primary themes: economic benefits, information about tourism benefits, and acknowledgment. These themes reflect the potential of DMS functions to create value for local communities by enhancing community access to economic opportunities and fostering social recognition. Similarly, the Delphi study identified DMS functions that support community motivation by enabling access to tourism benefits, such as “A web page for local tourism businesses that can be managed by the business owners”. The study also emphasises the value of DMS functions that promote local culture and acknowledge local stakeholders who were awarded for their contribution for tourism development, thereby enhancing social recognition within destination communities.

The findings from the website evaluations and the Delphi study suggests that the role of the DMS in fostering community motivation for participation should be viewed as a facilitator role that provides local communities with enhanced access to tourism benefits through its functions, particularly in terms of economic benefits and social recognition. This aligns with the motivation dimension of the MOA model, where motivation refers to

factors that encourage local community involvement in tourism, which is closely linked to the perceived benefits tourism brings to the destination (Bettiga et al., 2018; Hung et al., 2011). The DMS functions deliver the motivation dimension through two means: enhancing access for communities to benefit from tourism and promoting destination and community identity by showcasing local history, traditions, and cultural heritage.

### **Enhancing Community Access Economic Benefits**

The DMS functions within the economic benefits theme provide a mechanism that open access to the commercial value of tourism in the destination. DMS functions such as promotional pages for tourism businesses particularly small medium tourism enterprises (SMTEs), community-based enterprises and events, as well as business directories, primarily focus on maximising the commercial value of tourism by expanding destination markets through promotion of tourism services. From a different aspect, DMS functions that provide information about local tourism-related job opportunities offer the community avenues to derive economic benefits from tourism by enhancing enhanced access to employment opportunities in the sector. Previous literature indicates that while promotional functions are standard in Destination Management Systems (DMS), functions promoting tourism job opportunities are less common (Estêvão et al., 2020a). The global website evaluation confirmed that promotional pages for tourism businesses were widely adopted, with the job opportunity's function appearing on only one website. Similarly, the evaluation of Indonesian regional destination websites revealed that the promotional pages of tourism businesses are the most widely adopted functions of the DMS. This suggests that many DMSs are still developed with a visitor-centric focus, reflecting Gössling's (2021) concerns about the underutilisation of the potential of DMSs in strategic tourism management.

Promotional functions within the DMS have been recognised for their role in supporting tourism businesses, particularly SMTEs, by expanding their markets, thereby enhancing their access to the commercial benefits associated with the destination (Estêvão et al., 2020a; Sigala, 2014). However, measuring the effectiveness of promotional functions within the DMS remains problematic in practice. While the literature recommends evaluating the success of the DMS based on its benefits or impacts (Sigala, 2014; Sourak, 2015), there has been limited discussion on the specific mechanisms for such measurement. Sourak's (2015) study suggests that most DMS operators rely on website analytics tools and online customer surveys to measure its website whereas methods like benchmarking and using social media platforms to interact with DMS users are rarely employed. This is reflected in the findings from the interviews with DMS stakeholders, which revealed that DMS operators in Indonesia (Banyuwangi and Wakatobi) are uncertain about how to assess the impact of promotional functions within the system.

This uncertainty can be attributed to the nature of the promotional content in Indonesian regional DMSs, which is generally static and infrequently updated, and to the absence of feedback functions related to this content. Consequently, Indonesia regional destination websites often rely on more general metrics such as visitor numbers to the destination as their primary success criteria. However, this approach is not only inadequate for accurately evaluating the impact of the DMS, but also indicates that DMOs, as system operators, have little concern about the benefits tourism can bring to local businesses through the DMS. This suggests a tendency among DMOs to prioritise broader destination metrics, which in the Indonesian context are often aligned with performance indicators outlined in the national tourism strategic plan. In Indonesia, DMOs, typically government bodies or agencies, are obligated to contribute to national success indicators, primarily the number of international arrivals and tourism receipts, following the growth paradigm promoted by international tourism organisations such as the UN Tourism Organisation (formerly UNWTO), as discussed in Hall (2019).

The adoption of promotional functions within the DMS could help realise its potential to provide greater access to economic benefits for the community, particularly if its interactive functionalities are fully optimised. While promotional functions are widely implemented in DMSs to support local tourism businesses (Estêvão et al., 2020a), they often fail to demonstrate the DMS's value to these businesses due to limited feedback mechanisms. Leveraging the communication, relationship, and transactional dimensions of DMS functionalities for promotions can generate valuable tourist feedback, such as inquiries, comments, or bookings, which serve as measurable indicators of the DMS's impact on featured service providers. Sourak (2015) recommends a multidimensional approach, incorporating a range of methods, including website analytics, customer and local business surveys, and the engagement of multiple stakeholders, to improve the DMS evaluation process. Additionally, it is essential for DMOs, as DMS operators, to shift their focus from broad indicators, such as visitor volume, return on investment in DMS development, and general customer satisfaction (Sourak, 2015), to more customer-centric indicators, such as user engagement with business promotional pages and conversion rates to bookings.

Unlike the promotional functions in the DMS, which primarily target potential tourists, the content related to tourism job opportunities is aimed at local communities. The tourism job-related functions identified from the website evaluations are utilised by local tourism businesses to recruit employees from within the same region. Thus, both the providers and users of this information are members of the local community. Employment that arises from tourism businesses is recognised as bringing significant socio-economic benefit for local communities (Benedjma & Mahmoud, 2021; Litheko & Potgieter, 2021). This demonstrates that DMS adoption can align with the DMO's expanded management

role, which is driven by the need to address sustainability challenges at the destination level as addressed by Corak & Zivoder (2017). The application of functions such as job-related content in the DMS not only enhances local community access to tourism-related employment but also mitigates economic leakages from foreign employment, thereby addressing the socio-economic dimension of sustainable tourism practices.

The economic benefits of tourism like additional income or job opportunities are not always directly experienced by community members. Instead, some benefits are realised on a broader scale, such as regional economic growth and public funding (Hung et al., 2011; Sigala, 2013; Latip et al., 2021). Community members are often unaware of the positive impacts tourism has on their region, resulting in missed opportunities to capitalise on these benefits. Cole, (2006) shared similar concerns related to the lack of information of local tourism development including its potential benefits that in time hinder residents in Ngadha village, Indonesia, to capitalise on the benefit of tourism development in the region. The DMS has the potential to bridge this gap by informing the local community about the benefits of tourism to the destination. This function, identified as a theme during website evaluations, is evident in features like tourism growth and website traffic statistics.

Tourism growth statistics offer insights into its market size and economic contributions, implying opportunities for local community such as infrastructure investment, business development, and employment generation. However, much of the information related to tourism growth is often too broad for community members to leverage effectively. While Zehrer et al. (2005) suggested that the DMS can disseminate information on visitor patterns and purchasing behaviour to help local businesses enhance their competitiveness, the generalised nature of tourism growth and economic data is too vague to serve as actionable business intelligence. It is more likely that tourism growth information is primarily intended to attract investment to the region. If this is the case, the DMO must ensure that the benefits of such investments are redirected to benefit the well-being of the local community.

DMOs must play a more active role in interpreting and communicating broad data, such as tourism growth statistics, to effectively benefit communities. They could offer channels and capacity-building initiatives, such as incentive schemes and tourism management training, to help communities capitalise on tourism opportunities. This highlights the interconnected nature of the dimensions of MOA in optimising value propositions to encourage community participation. One of the experts interviewed suggested that DMOs could provide information on the potential benefits and opportunities brought by tourism, such as gaps in the value chain in the sector and skills needed within the workforce. This type of information would provide actionable insights for local

communities while also informing them of the positive impacts the industry can have on local development. Thus, DMO leadership plays a significant role in optimising DMS functions related to tourism benefits by improving community capacity and providing better channels for communities to leverage tourism impacts. This aligns with Boes et al. (2016), who emphasise the importance of "soft smartness", including leadership and social capital, in maximising the positive impacts of ICT adoption.

Unlike the vague nature of tourism growth statistics, DMS website engagement metrics, as seen on the Visit Jeju Island platform, provide detailed insights into user activities on tourism business pages, including page views, comments, and shares. This helps businesses gauge market potential by understanding the potential visitors and their preferences through comments. However, the absence of a booking system limits information on sales conversions. Adding a booking feature that allow sales data could offer businesses valuable insights into their current performance and growth opportunities. The adoption of tourism benefit-related content across DMS platforms suggests that the strategic use of these functions, along with supporting non-technological initiatives, is crucial in optimising the DMS capability specifically in enhancing community access to tourism benefits. Thus, it is essential that when first designing the system, DMOs focus on the efficacy or the potential of the DMS to achieve a desired result in terms of achieving stakeholder goals and aspirations. This aligns with Sigala's (2014) argument that one key criterion for measuring DMS success is its impact on destination stakeholders, which in this research includes the local community.

### **Social Recognition**

The DMS can encourage community participation in tourism development by enabling social recognition from the community acknowledgement functions, which in turn can contribute to fostering intrinsic motivations like strengthening the community sense of attachment to their environment (Bettiga et al., 2018; Benedjma & Mahmoud, 2021). The website evaluations revealed that DMS functions related to community acknowledgment, which provide information about the destination's community profile, history, culture, traditions, and livelihoods, were adopted by less than half of the evaluated websites. According to Estêvão et al. (2020a), content about local culture, particularly living traditions (cultural practices, customs, and expressions that are still being practiced) and local wisdom, is not typically recognised as a DMS function. However, the findings of this current research indicate that recent developments in global DMSs reflect a stronger focus on acknowledging the value of local culture and traditions, which play a crucial role in shaping community identity and fostering tourism development. While this content primarily aims to promote the destination to tourists, it also plays a role in retaining and revitalising local culture by offering a platform to share information about customs,

traditions, and knowledge. Surprisingly, for destinations largely recognised for their rich culture, functions related to promoting culture, history, and traditions are not commonly featured in Indonesian regional DMSs. Much of the cultural and traditional content that does appear tends to frame these as tourism resources rather than conveying their broader value to the region and its communities. This suggests that Indonesian regional DMSs prioritise presenting the commercial value of cultural resources to potential tourists over highlighting their cultural significance.

The promotion of local culture and traditions and community members' contributions to the region's development via the DMS reflects the DMO's recognition and appreciation of the local community and its cultural heritage, serving as a tangible acknowledgment from the DMO. Drawing from the example of Bettiga et al., (2018) work on community engagement in digital networks of food products, consumers suggests that acknowledgment from other users serves as a form of social recognition. This recognition fosters a sense of attachment to the network, which encourages active participation of the network members, which in Bettiga et al. case, this engagement was reflected in their participation in co-creation processes, where they provided feedback on products. Information about local traditions, local etiquette, codes of conduct and cultural values on the DMS should aim to educate visitors about and encourage adherence to the cultural norms of the destination. By fostering understanding of these values and traditions the DMS can facilitate their practice, thereby enhancing preservation efforts. Supporting this view, the literature suggests that facilitating public understanding particularly visitors, of the cultural identity of the destination community can help encourage the preservation of local heritage and traditions (Latip et al., 2018; Le et al., 2022). Additionally, encouraging visitors to engage with local culture and respect traditions can serve as a form of social recognition for the host community. To achieve this, the DMS should emphasise the importance of adhering to local customs, such as wearing modest attire when visiting temples in Bali. By influencing visitors to follow these practices, the DMS can help foster meaningful relationships between the host community and visitors.

In summary, many examples of DMS functions that deliver the motivation dimension seem to concentrate on fostering extrinsic motivation for the community to engage in tourism, particularly by extending the economic benefits of tourism to the local community. According to the literature, extrinsic motivation for community participation is closely related to the economic, social and environmental benefits of tourism development to the destination region (Latip et al., 2018; Le et al., 2022; Litheko & Potgieter, 2021). At the same time, intrinsic motivation is associated with individual motivation, such as attachment to the local environment, recognition of local culture, self-determination, and local self-identity (Benedjma & Mahmoud, 2021; Jaafaret al.,

2020). While the commercial benefits of tourism stem from tourist spending, the role of the DMS is to expand opportunities for the community to capitalise on these benefits. It does so by offering better links to the broader tourism market and by informing the community of emerging opportunities within the tourism industry.

On the other hand, the intrinsic motivation for communities to engage in tourism can be cultivated through the DMS by promoting local culture, history and traditions, which can foster social recognition within the community. Although social recognition is highlighted in the literature as one of the intrinsic motivations, it remains challenging to measure due to the subjective nature of the concept. Related to this challenge, Jaafar et al. (2020) argue that intrinsic motivation is developed through meaningful relationships among all tourism actors, rather than being immediately influenced by the benefits of local tourism activities. Therefore, for the DMS to play a significant role in fostering community participation, its functions must effectively bridge relationships among all tourism actors, encompassing both the demand and supply sides, including the community on a consistent basis.

Current DMS platforms, including those in Indonesia, offer content and features designed to provide motivational elements to foster community participation; however, the implementation of these functions is not effectively aligned with serving the needs of the community. Most of the functions related to the motivational elements of the MOA framework discussed in this section primarily cater to external stakeholders, such as tourists and investors. The adoption of DMS functions must consider the perspectives of the community (tourism businesses, informal enterprises and residents) as users of the system, to effectively harness the DMS's capability to enable motivational factors for community participation.

To optimise the potential of the DMS to facilitate community participation it is essential that interactive functionalities like communication, relationship and transactions are integrated with DMSs to enable motivation dimension. However, the website evaluations findings and literature contend that the adoption of interactive functionalities in the DMS has not yet fully optimised, highlighting the significant shortcomings of DMS development (Benckendorff et al., 2019; Estêvão et al., 2014, 2020a). Motivational factors closely associated with the positive impacts of tourism arise from meaningful interactions between tourists and the local community, underscoring the critical role of the DMS in effectively supporting and facilitating these connections.

### **9.2.2. The DMS-Enabled Opportunity Dimension**

The analysis of the data from both the website evaluations and the Delphi study indicates that several DMSs are perceived as capable of enabling a medium for community engagement in tourism development (see Table 9.2).

Table 9.2 summarises the findings from the website evaluations and Delphi study regarding DMS functions that offers a medium for community participation. The functions found in the global website evaluation include providing communication channels between host communities, DMOs, and potential tourists; platforms for community involvement in DMS content creation; and access to information on tourism initiatives relevant to the community. Such functions encourage community engagement by enabling interactive communication among tourism stakeholders and supporting co-production of tourism value both within and beyond the ICT platform.

The Delphi study reinforces these findings, highlighting DMS functions with potential to support community participation, particularly those promoting interaction among tourism actors and enabling content co-production, which align with the results of the global website evaluation. Thus, findings from both the website evaluation and the Delphi study illustrate the potential of DMS functions to provide avenues for meaningful community involvement in tourism.

**Table 9.2. DMS Functions that Can Enable Opportunity Dimension**

<b>Destination Website Evaluations</b>		<b>Delphi Study</b>
<b>Themes</b>	<b>DMS Functions</b>	<b>DMS Functions that Can Enable Community Participation</b>
<b>Channels for the community to contribute to the DMS content creation</b>	<ul style="list-style-type: none"> <li>• Social media promotional content</li> <li>• Community-authored promotional blog(s)</li> <li>• Function to add tourism events on the website</li> <li>• Functions to add tourism businesses' information on the website</li> </ul>	<ul style="list-style-type: none"> <li>• Content in the DMS is produced by the local community and community groups.</li> </ul>
<b>Communication channels between host communities and the DMO</b>	<ul style="list-style-type: none"> <li>• Messaging, chat and comment functions</li> </ul>	<ul style="list-style-type: none"> <li>• An interactive communication channel between tourists and destination stakeholders.</li> </ul>
<b>Information about tourism programmes for the community</b>	<ul style="list-style-type: none"> <li>• Information about tourism volunteering programmes</li> <li>• Tourism-related competitions</li> <li>• Donations for tourism development</li> <li>• Tourism destination ambassador programmes</li> </ul>	
<b>Communication tools to foster interaction between destination communities and potential tourists</b>	<ul style="list-style-type: none"> <li>• Discussion forum for tourists and community members.</li> </ul>	

### **Providing Communication Channel Between Tourism Stakeholders**

The DMS functions that enable the opportunity dimension can address practical limitations to community participation, such as poor coordination among tourism stakeholders and the financial costs associated with participation. These practical limitations, particularly in developing countries, are often linked to the customary operations of participatory approaches such as lack of information related to tourism planning for community, poor coordination among tourism stakeholders and limited funding for participatory initiatives (Bello et al., 2017; Cole, 2006; Tosun, 2000). Poor coordination among local tourism stakeholders is a significant barrier in this context (Bello et al., 2017; Saufi et al., 2014; Tosun, 2000).

Some scholars emphasise the importance of having communication channels between destination communities and tourism authorities to enhance coordination for community participation (Le et al., 2022; Rasoolimanesh et al., 2017a). In this context, the DMS can enhance coordination among tourism stakeholders in developing countries by providing communication channels. Centralised governance and low levels of democracy often create barriers to community participation by widening the gap between communities and authorities (Bello et al., 2017). An interactive communication functions in the DMS can enable the local community to engage directly with tourism authorities or DMOs without relying on formal forums, which are often hindered by complex bureaucratic processes and distance of the government and destination community in remote areas, especially in Indonesia. Thus, the DMS offers an alternative solution to communication and coordination challenges. However, while the DMS communication channel provides an alternative solution for practical limitations, it does not address structural barriers to community participation, such as a centralised government system.

To effectively use DMS communication functions in addressing coordination challenges among destination stakeholders, destination governance must adopt a more inclusive and collaborative approach. The findings from the website evaluations, including those in Indonesia, indicate that while some DMS have incorporated interactive communication features, these functions are predominantly used to connect potential tourists with the DMO. Communication features, although recognised as common functions of the DMS, are rarely used to facilitate interactions between the local community and tourists (Estêvão et al., 2020a, Sourak, 2015). Previous studies further confirm the limited adoption of synchronised interactive communication tools, such as chat functions or message boards, within DMSs (Benckendorff et al., 2019; Estêvão et al., 2020a). This limitation may be attributed to the low level of interactivity provided by these features, as they are often constrained by the operational hours of DMO staff.

Moreover, this doctoral research found that even when interactive communication tools are present, they primarily serve the marketing objectives of the DMO by addressing tourist needs. This can be seen in the common topics of discussion found in the online communication forum, such as public transport availability. From a different perspective, experts in the Delphi study highlight that communication channels can benefit both communities and DMO by enabling them to provide input on tourism development, report disturbances, and identify hazards at the destination. This engagement offers valuable first-hand insights that enhance inclusivity in destination management and support social sustainability in tourism practices. By enabling community voices and local knowledge to be integrated into tourism management, DMSs facilitate communication among tourism stakeholders, addressing a key barrier to effective community participation. This approach embodies the core purpose of community participation, which is to incorporate community needs into the development process (Basile et al., 2021; Eyisi et al., 2021; Murphy, 1985).

### **The DMS facilitated Co-production**

Two of the themes that relate to DMS functions that enable the opportunity dimension, “Channels for the community to contribute to DMS content creation” and “Information about tourism initiatives for the community”, include functions that have the potential to foster co-production initiatives in tourism development. *Co-production*, a concept central to the Service-Dominant (S-D) logic framework, involves the collaboration of local stakeholders in creating a value proposition for customers (Alam, 2021; Edwards et al., 2017). The DMS functions can facilitate both digital and traditional co-production. Specifically, the four functions under the “Channels for the community to contribute to DMS content creation” theme allow communities to co-produce DMS content, particularly through social media posts and blogs (see Table 8.2). Meanwhile, the functions under the “Information about tourism initiatives for the community” theme inform host communities of co-production opportunities within tourism development.

The concept of community co-production within a DMS has been previously explored, albeit under different terminology. Related to the coproduction approach, Sigala (2014) advocates the integration of the DMS into an inter-organisational information system (IOIS) and the adoption of a community marketing approach, where the tourism community actively participates in marketing initiatives. The distinction between the term co-production and Sigala’s (2014) concept of community marketing lies in how the term community is understood. In the context of co-production as discussed in this research, the host community is the primary participant in the process. In contrast, the community marketing framework interprets the community more broadly, encompassing all stakeholders involved in the DMS including tourists. Moreover, positive perspectives

from travel communities, often expressed through word of mouth (WOM), are highly effective in motivating tourists to visit and purchase tourism products (Suryaningsih et al., 2020). In this context, community marketing and co-production through the DMS can significantly encourage tourist engagement, potentially leading to greater economic benefits, particularly for local tourism businesses.

The co-production medium, either ICT-mediated or traditional face-to-face initiatives, can offer a method of participation in which the community can be involved. The co-production opportunity presented on the DMS website can tackle the shortage of participatory programmes available, as addressed in Bello et al. (2017). Moreover, the limited information about community participation initiatives, as raised in the literature (Reindrawati, 2023; Saufi et al., 2014), can be addressed by using the DMS as one of the information-sharing mediums. ICT-facilitated co-production on the DMS is much more efficient and challenges the notion of traditional co-production, which builds on face-to-face interactions and long-term relationships and requires intensive resource integration (Alam, 2020). Providing digital co-production methods for communities on the DMS, such as having functions that enable authoring of website content, provides an alternative solution to the high cost of providing participatory initiatives, which is one of the participation challenges raised by Bello et al. (2017). Thus, providing co-production methods on the DMS would address some of the practical challenges community face when engaging in tourism, particularly in facilitating a medium for community to participate that aligns with their interests and aspirations.

Despite the potential value of community co-production functions, the analysis of the 52 global destination websites revealed that adoption of such functions remains limited, leading to missed opportunities for the DMS to act as a catalyst for collaboration within destinations. This limitation is even more evident in the Indonesian cases, where co-production functions were identified only in a few DMSs managed by community groups. Previous reports have suggested that functions such as community-authored blogs and social media galleries, though present in some DMS, are not commonly applied (Estêvão et al., 2020a). This research corroborates those findings, as functions related to co-production were found only in a few of the evaluated websites including those in Indonesia.

Digital co-production has potential to enhance community participation and maintain high-quality content in DMSs, as indicated by interviews with DMS stakeholders. This approach allows local stakeholders to contribute directly to the DMS, which can lead to more authentic, diverse, and timely information. However, a study by Estêvão et al. (2020) highlights a division among DMO managers regarding the co-production strategy. Some managers express reservations, primarily due to concerns about content quality

of the DMS when authored by local stakeholders. On the other hand, incorporating local knowledge into tourism products, including promotional content, fosters the authenticity of the destination (Basile et al., 2021; Cole, 2006). This can enhance the quality of information on the DMS while simultaneously increasing tourism purchases, and so extending the economic benefits of tourism to the community.

In the same vein, Delphi experts suggest that the community involvement in content creation is significant to improve information quality in the DMS and should be the main distinction between DMS and traditional DMO's website. Moreover, involving the community in DMS content creation signals community consent and support for DMS operations. While previous studies have highlighted concerns about the community's capability and capacity to produce quality content, initiatives to enhance community skills for co-production functions could offer a solution. Such skill development can be seen as an indirect benefit of tourism, as it enhances community members' authorship capacity, which may extend beyond tourism-specific applications. In the interviews, DMS Stakeholders also emphasised the need for government-facilitated capacity building to promote effective community involvement in content creation.

In terms of promoting traditional non-digital forms of co-production, the global website evaluation revealed that some DMSs have adopted functions that promote community participation initiatives, such as local competitions and ambassador programmes. This contrasts with the literature, which suggests that such functions are generally absent from DMS platforms (Estêvão et al., 2020a). The fact that the DMSs evaluated in this research provides information on opportunities for local community involvement in tourism initiatives suggests that some DMOs are starting to recognise the potential of DMS to convey information such as participation initiatives specifically directed at local communities.

Data from the website evaluations and the Delphi study related to the DMS's capability to enable the opportunity dimension for community participation in tourism reveals a mixed picture. While some of the DMSs have recognised and leveraged the system's potential to facilitate information exchange with the community, the majority of the 52 evaluated websites remain tourist-centric, adhering to traditional practices. This trend is also evident in Indonesian regional DMSs, as revealed by the evaluation of Indonesian websites. This focus on tourists indicates that many DMSs continue to prioritise visitors over local community engagement, thereby limiting the system's potential to contribute more effectively to inclusive tourism development.

The discussion in this section illustrates the limited application of community engagement functions within the DMS. Some destination websites, such as Destination Ann Arbor's "Get Social" page, Travel Oregon's "Ask Oregon" page, and Saskatchewan's

Ambassador Programme, do provide avenues for resident involvement. However, these opportunities are often restricted to selected community members, reflecting a low level of community representation in the DMS functions designed to encourage participation in tourism. This situation may be related to the structural barriers of community participation identified by Tosun (2000), where tourism-related decision-making is dominated by those with structural power, such as authorities, especially when such programmes and functions are not discussed with local stakeholders. Furthermore, the findings suggest that the concept of co-production in the DMS may still be aligned with a collaborative approach to DMS operation, a concept that is prevalent in the literature and which tends to focus on collaboration between DMO and business entities (Benckendorff et al., 2019; Buhalis, 2003; Estêvão et al., 2014; Estêvão et al., 2020a). In summary, DMS functions related to the opportunity dimension have the potential to support community participation in tourism if they can facilitate community communication and integration within the tourism network at the destination, allowing local aspirations and knowledge to be embedded in tourism initiatives.

### **9.2.3. The DMS-Enabled Ability Dimension**

The analysis of the data from both the website evaluations and the Delphi study indicates that several DMS functions are perceived as capable of supporting the factors that can improve community capability to participate in tourism development. The DMS functions that have the capability to enable the ability dimension for community participation are listed in Table 9.3.

The DMS functions presented in Table 9.3 can support raising community awareness of tourism development at the destination and building the capabilities of community members, including tourism businesses, by providing resources to enhance their knowledge and skills for effective participation in tourism. These functions include certification programmes designed to boost community engagement and enable them to benefit from tourism. The only DMS function recommended by the Delphi panel related to the ability dimension is “Feedback and recommendation features for users, including the community”, which overlaps with the “Online reviews” function identified in the website evaluations. Both functions serve as valuable sources of knowledge about tourism development from the DMS users' perspective.

**Table 9.3. DMS Functions that Can Enable Ability Dimension**

Destination Website Evaluations		Delphi Study
Themes	DMS Functions	DMS Functions that Can Enable Community Participation
<b>Awareness of local tourism development</b>	<ul style="list-style-type: none"> <li>Local tourism-related news</li> <li>Information about sustainable tourism projects</li> <li>Information about tourism destination development strategies and programmes</li> <li>Online reviews</li> </ul>	<ul style="list-style-type: none"> <li>Feedback and recommendation features for users, including the community</li> </ul>
<b>Community capacity building</b>	<ul style="list-style-type: none"> <li>Tourism-related training and workshops</li> <li>Membership benefits</li> <li>Guidelines to write promotional content</li> </ul>	
<b>Certification</b>	<ul style="list-style-type: none"> <li>Tourism product certification</li> </ul>	

### **Awareness of Local Tourism Development**

This study found that the DMS has the potential to enhance a community's capability to engage in tourism, particularly by increasing awareness of tourism development at the destination and building both community and local business competencies. The global website evaluation highlights the DMS enabled 'ability' dimension of the MOA framework, emphasising factors that develop competencies for effective community participation in tourism. Specifically, a community's ability to participate in tourism is closely linked to three core elements: awareness, capacity and financial resources (Hung et al., 2011; Jepson et al., 2014; Le et al., 2022; Rasoolimanesh et al., 2017b).

According to Rasoolimanesh et al. (2017b), awareness is correlated with access to up-to-date information regarding the current state of the tourism destination, including local tourism development strategies, which in turn fosters community consciousness about the progress of tourism within their area. The evaluation of the 52 tourism destination websites reveals that just under half of the DMSs offer content reflecting the current state of local tourism development, with a few also publishing strategic plans for future tourism initiatives. This trend is also evident in Indonesian regional DMSs, as shown by the evaluation of Indonesian websites. These elements are integral to raising local community awareness and encouraging engagement in tourism. In this research, awareness is conceptualised as knowledge of local tourism issues, which enables the

community to participate more actively, particularly during the planning stages of destination management.

Cole's (2006) ethnographic study of a local community in Ngadha Village, Indonesia, highlights that one of the barriers preventing a community from benefiting from tourism is a lack of knowledge about ongoing tourism initiatives and issues. Therefore, the first three DMS functions under the "Awareness of local tourism development" theme could help add to the community's knowledge of local tourism issues and so reduce one of the cultural barriers to community engagement, as introduced by Tosun (2000).

Both global and Indonesian website evaluations revealed that functions providing local tourism strategies and plans are only evident on a small number of websites, whereas local tourism news is more commonly found across many of the DMSs. This finding appears to be inconsistent with Estêvão et al.'s (2020a) statement that both local tourism strategic plans and tourism-related news are generally common in DMSs. The contradiction between the prevalence of tourism strategic plan content in the findings and the literature may be attributed to the origin of the DMS samples examined. Estêvão et al. assessed DMS based in Europe and the USA, while this research examined DMS practices globally and in Indonesia, incorporating a more heterogeneous sample.

Furthermore, data from the interviews with DMS stakeholders suggest that some DMSs, particularly those in Indonesia, were developed primarily to promote and enhance the image of the destination. This finding might explain the rarity of tourism strategic plans content found in the DMSs, as such content lacks direct promotional appeal. Nevertheless, local tourism news, especially positive reports, could contribute to improving the region's image as a tourism destination, hence the common application of this function.

### **Community Capacity Building**

The DMS possesses the potential to strengthen both individual and community capital resources in terms of skills and knowledge, thereby contributing to the improvement of community capabilities through the facilitation of training and workshop-related functions, including those offered via DMS membership programmes. By providing the community with avenues to acquire knowledge and skills, the DMS can play a crucial role in cultivating the community's capability to participate effectively in tourism. Previous literature has underscored the importance of knowledge and skills in enhancing community capability to engage in tourism initiatives (Cole, 2006; Rasoolimanesh et al., 2017b). In the context of this research, community capability for community participation comprises both knowledge and skills, where knowledge is understood as a profound comprehension of the processes and responsibilities involved in tourism development,

while skills are the competencies required for active participation in tourism initiatives and the ability to derive benefits from tourism activities (Rasoolimanesh et al., 2017).

The website evaluations also revealed that some of the 52 global DMSs are equipped with functions that provide training, guidance or workshops, particularly in areas such as copywriting for blog content and tour guide training, whereas none of the Indonesian DMSs included in the evaluation adopt this function. Alternatively, Delphi experts suggested that DMS platforms could be leveraged to promote tourism-related training and associated incentives, often organised by DMOs in collaboration with various stakeholders, such as private companies. These findings align with scholarly recommendations that suggest that offering training and workshops to the local community on tourism-related topics, such as conservation and entrepreneurship, can significantly enhance community knowledge and skills, thereby facilitating greater involvement in local tourism development (Hung et al., 2011; Kala & Bagri, 2018; Tosun, 2000). Furthermore, the knowledge gained from local tourism training can increase community awareness and motivation to participate in tourism development. Additionally, online visitor feedback collected through the DMS can serve as valuable business intelligence, helping to refine and improve tourism offerings based on visitor preferences and perceptions of local tourism products. This function has been highlighted in the literature as a means of enhancing business competitiveness, with the DMS acting as a mediator in this process (Zehrer et al., 2005).

The website evaluations also revealed that capacity-building functions have been adopted by only a limited number of the global 52 DMSs and by none of the 29 Indonesian websites. This finding aligns with previous research, which also reported that training and workshop related functions, while acknowledged in earlier studies, are not commonly featured in the DMS (Estêvão et al., 2020a). Notably, one of the websites that offers tour guide training and workshops does so by outsourcing these services to external private providers. This suggests that the DMO may lack the internal capability and capacity to deliver training, particularly in areas related to business management, thereby limiting the implementation of training-related functions within the DMS. However, at the same time, this finding indicates that the DMO can overcome such limitations by leveraging outsourcing initiatives, using the global networks facilitated by ICT platforms to provide specific skill-training functions through external partnerships. This approach represents an adoption of ICT platform that can support the strategic management of the destination as advocated in Gössling (2021).

### **Tourism Businesses Certification**

The website evaluations revealed that the DMS has the potential to enhance the competitiveness of local tourism businesses by acknowledging them as integral

components of destination value co-production through certification programmes. Several of the DMSs evaluated in the research introduce local businesses on their websites via such certification programmes, offering social recognition that can benefit businesses, including informal enterprises, by granting them acknowledgment from both the tourism market and government bodies (Janjusevic & Perovic, 2020). This is particularly significant for informal businesses, which often lack recognition due to their absence of licences or adherence to different regulatory frameworks (Damayanti et al., 2017; Hampton et al., 2018; Saufi et al., 2014). However, none of the evaluated DMSs adopting certification function are from Indonesia.

Despite the critical role that informal businesses play as co-creators of destination value from an S-D logic perspective, the nature of tourism, where the safety of tourism products is paramount, renders the recognition of these businesses crucial (Fletcher et al., 2018). As a result, tourists often prefer to engage with recognisable and certified products (Li et al., 2018; World Economic Forum, 2024). Certification can, therefore, improve the competitiveness of local SMTEs, especially informal businesses with limited legal legitimacy, thus enabling them to acquire benefits from tourism. The literature contends that certifications like green certifications, which require businesses to adhere to specific quality standards and undergo regular audits, can enhance brand value, increase market exposure, and bolster the competitiveness of local businesses (E'Lisha & Duffy, 2018; Janjusevic & Perovic, 2020).

Certification supports the socio-economic sustainability of destination management by improving the competitiveness of SMTEs and informal businesses, ultimately helping to reduce economic leakage and retain a greater share of the visitor economy within the destination (Bramwell & Lane, 2011). However, the certification programme cannot be treated as a simple audit. DMOs must actively support tourism businesses by providing training and workshops to help them meet certification standards. Therefore, capacity-building initiatives for tourism businesses should be integrated into the DMS certification function. Interestingly, certification-related functions were identified in only a few of the 52 evaluated websites and have not been widely reported as a DMS function in previous research (Estêvão et al., 2020a). This finding is particularly significant as many destinations in developing countries, consist of informal businesses within their tourism ecosystems. These businesses need recognition as legitimate tourism service providers and, more importantly, support to enhance their capability to meet growing demand.

The limited adoption of certification functions for local businesses and products may stem from DMOs' focus on promoting tourism products, with less emphasis on enhancing the competitiveness of tourism businesses, including informal businesses, through certification programmes. Additionally, the inability of DMOs to effectively deliver training

and workshops that help businesses meet certification standards may contribute to the absence of the certification function of the DMS, as businesses must improve their capabilities to achieve certification to be valuable for promotion. Additionally, the literature also mentioned the cost of acquiring and retaining certification also hindered businesses to join the certification programs (Dunk et al., 2016; Sashidaran et al., 2001).

### **9.3. The Effective Implementation of DMS Functions in Supporting Community Participation: Internal Marketing and Collaborative Production**

This section examines the DMS functions that enable the three dimensions of the MOA framework that have been adopted to optimise their role to support community participation. The discussions in earlier sections of this chapter have highlighted various DMS functions with the potential to support community participation through the MOA framework. The previous discussion suggests that the majority of DMS functions have not yet fully embraced their potential to support community participation; however, certain functions have been adopted to meet community needs. These functions demonstrate a growing recognition of the community as a significant element of the DMS, either as the primary source of content or as the main users of these functions.

Several DMS functions that have been identified as instrumental in supporting the community participation process merit further discussion due to their exemplary adoption particularly in involving community. Functions such as tourism job information, tourism development and website traffic statistics, and profiles of community members and their contributions to tourism development position the local community as the intended audience. These functions align with internal marketing theory and are discussed within that framework in the following paragraphs. Additionally, functions like community-authored tourism blogs and social media-sourced promotions engage the community in co-creating DMS content, a topic explored under the collaborative production framework.

#### **Internal Marketing Adoption in DMS Function**

Internal marketing is a valuable concept for DMOs to implement, as it ensures community satisfaction while simultaneously contributing to the co-production of destination value. Traditionally established within management disciplines, *internal marketing* is defined as a strategic effort to deliver customer satisfaction by empowering motivated and customer-oriented employees, thus enhancing employee satisfaction (Kaurav et al 2017). Conceptually, internal marketing seeks to motivate and educate employees about the company's objectives, helping them to understand their role in achieving these goals (Crick, 2003). However, the management model of a DMO, acting as a facilitator of tourism destinations, differs significantly from that of a traditional corporation (Corak &

Zivoder, 2017). Unlike a corporation, a DMO does not manage employees who are contractually obligated to fulfil specific responsibilities. In the context of destination management, Zhang et al. (2022) argue that internal marketing can foster soft governance approaches through negotiation and persuasion, aimed at sharing governance values and encouraging the community to achieve common goals. This aligns with the broader objective of co-creating tourism destination value, which seeks to foster collaboration among tourism stakeholders to enhance the well-being of the destination and all its actors.

In the specific context of DMOs, Suzuki and Morimoto (2014) propose adapting internal marketing strategies, particularly by leveraging ICT platforms, to enhance destination management efforts. They suggested replacing traditional employees in the internal marketing framework with local tourism businesses, as these entities are the primary drivers of the tourism industry within a destination. This thesis extends Suzuki and Morimoto's (2014) argument by proposing that, from a S-D logic perspective, the community, comprising local tourism businesses, informal businesses and residents, should be considered as subjects of internal marketing, given their collective role in co-producing destination value. The DMS functions identified in the website evaluation, such as the community acknowledgement feature, integrate the community into content creation. This involves showcasing the destination community's stories and perspectives, fostering shared value for both tourists and the community itself.

The traditional commercial concept of internal marketing, which relies on employee reciprocity, such as remuneration for extra effort made to meet company objectives, is impractical in the context of destination management. In the case of DMOs, the relationship with the community is more complex, as community members are not employees but rather stakeholders who contribute to the destination's value creation. As discussed in section 9.2.1, the community is motivated not only by extrinsic benefits, such as economic gain, but also by intrinsic factors, such as place attachment. Supporting this argument in a different context, Suzuki and Morimoto (2014) explained that internal marketing could be effectively adopted in destination management by incorporating incentives and rewards for tourism businesses through the DMO as part of internal marketing initiatives.

When applied effectively, DMS functions can deliver significant value to the community including residents by expanding access to economic benefits, enhancing social recognition of community identity through promoting local traditions, and improving local capabilities to participate in tourism development. DMS functions, such as tourism-related job information, demonstrate the system's capability to convey valuable information to the community, thereby shaping tourism's value for residents. The DMS

functions potential to support community participation will only be realised effectively if the DMOs consider the community as significant stakeholders, central for sustainable tourism development. Consequently, integrating community in the destination tourism network is essential.

A DMS that optimises its interactive functionalities has the capacity to support the DMO in facilitating all tourism actors to be connected in the tourism network. Suzuki and Morimoto (2014) suggested that ICT platforms can enable the adoption of internal marketing in the tourism industry if a certain level of interactivity is available to facilitate information exchange between local businesses, DMOs and tourists. This thesis posits that interactive communication between all the tourism actors including the community, comprising local tourism businesses, informal businesses and residents, DMOs, and tourists is essential for communicating the needs of all actors and facilitating the sharing of resources, ultimately fostering the wellbeing of the tourism system. However, traditional destination websites typically function as one-directional information feeders, which limits their capability to facilitate internal marketing, as they are unable to support consistent communication between tourism stakeholders.

The Delphi study primarily identifies tourism businesses, DMOs, and tourists as the main beneficiaries of DMS, and unfortunately overlooks the broader community as a beneficiary. The current state of DMS may have influenced the Delphi findings regarding system beneficiaries. However, by integrating the concept of internal marketing with enhanced DMS interactivity, there is potential to broaden this perspective and include community members as active beneficiaries of DMS. An interactive DMS as discussed in the previous section (section 9.2.2), can mediate communication of all tourism actors. Regular communication between government entities and local communities can lead to the formation of a governance community, characterised by thinning barriers, equal positions, mutual trust and shared responsibility (Zhang et al., 2022). Such a governance community would enhance collaboration among local stakeholders, thereby contributing to the overall well-being of the destination.

The DMS, conceptually, possesses interactive functionalities such as communication, transactional and relationship functionalities that can facilitate the adoption of internal marketing practices. For example, the application of interactive functionalities in the Destination Ann Arbor website's workforce development section provides a platform where users can apply for jobs and local businesses can advertise job opportunities. Although the interactive functionality available on the Destination Ann Arbor website is not synchronised (real-time), it still bridges the interaction between tourism actors by enabling resource sharing, which can eventually foster collaboration among tourism stakeholders. The concept of community governance, rooted in internal marketing, offers

an alternative to structural barriers that hinder community participation under centralised governance. While formal governance remains top-down, grassroots practices can evolve into governance communities through regular communication fostered by the internal marketing approach.

The internal marketing framework provides a strategic foundation for DMS adoption, particularly in enabling the MOA framework. By leveraging internal marketing principles, a DMS can facilitate community engagement by helping community members recognise the value of tourism and participate in co-creating value propositions for visitors. The DMS has the capability to deliver motivational factors that highlight the benefits of tourism for the community, while also contributing to capacity building, equipping the community to engage effectively in tourism activities. Both motivation and capacity building are essential dimensions of internal marketing, encouraging destination stakeholders, including local communities, to actively participate in the co-production of tourism value for visitors and residents alike.

### **Collaborative Production (Co-production) Strategies in the DMS**

The global website evaluation also identified DMS functions that were either produced by the community or had content sourced directly from the community. These types of functions are prime examples of how that DMS can adopt the MOA framework to actively involve the community in co-production in the content creation process. The DMS can effectively support community co-production by providing avenues for community members to contribute to tourism development according to their interests. Section 9.2.2 explores the role of DMS in both facilitating co-production and acting as community marketer for destinations, with a focus on providing functions that enable community input into content creation. Examples include the "Get Social" page on the Destination Ann Arbor website and the "Street" feature on the Kyoto City Official Travel Guide website. These DMS functions serve as platforms for integrating local knowledge, thereby promoting the authentic identity of the destination and fostering inclusiveness and democracy (Basile et al., 2021; Cole, 2006). These values are embedded in the co-production process and align with the participatory approach.

While DMS functions that facilitate community co-production are generally classified under the opportunity dimension, as they provide a medium for community participation, they can also foster intrinsic motivation for community members to engage in tourism. Previous study suggests that contributing to website content can motivate community members to participate in tourism development, as individuals are driven by their own aspirations and interests (Benedjma & Mahmoud, 2021). For instance, a community member who authors a blog on a destination website can express their passion for writing. Some websites, like Travel Oregon, offer guidelines for blog authorship

(<https://traveloregon.com/write-travel-oregon/>), providing a means for capability building for community members interested in writing. Thus, DMS functions that facilitate community content contribution not only engage the community in tourism development but also stimulate intrinsic motivation to participate.

#### **9.4. Summary**

This thesis posits that DMS functions that facilitate community connections within the network can be regarded as an institutional arrangement. The DMS is conceptualised as an institutional structure established by the DMO. Existing literature suggests that the purpose of institutional arrangements is to coordinate rules and norms governing the interactions of actors within the destination ecosystem in the value co-creation process (Vargo & Lusch, 2008). Viewing the destination as a complex network grounded in S-D logic, social and economic actors play a crucial role in creating destination value (Vargo & Lusch, 2008).

This chapter emphasises that the three dimensions of the MOA model can be considered pull factors driving community participation. Based on the DMS's capability to enable these pull factors, it is suggested that the DMS has the functional capability to serve as an institutional arrangement within the destination ecosystem. However, findings of this research reveal that only few DMS functions are currently designed to facilitate information sharing between community members, particularly residents and informal businesses, and other actors. This is evident from the limited and often ineffective adoption of functions that could enable the MOA framework, suggesting that many DMSs have yet to fully embrace this approach. Nevertheless, the discussion in this chapter highlights that some DMSs have begun to adapt these functions, such as positioning the community as one of primary users of information and providing avenues for community contributions to website content.

Frameworks such as internal marketing and co-production describe the norms and rules for community engagement with other actors within the DMS network, particularly in co-producing the destination's value proposition for destination marketing. Another critical element of the S-D logic framework is the interrelationship of actors for individual survival/well-being, which collectively contributes to the well-being of the entire system (Vargo & Lusch, 2016). Therefore, for the DMS to function as an institutional arrangement within the system, a community-focused DMS, one that positions the community as both users and content co-creators, should ensure that more actors within the destination are connected than would happen under the traditional tourist-oriented DMS.

The ongoing discussion suggests that a community-focused DMS is one that enables the three dimensions of the MOA model (the pull factors that drive community

participation) by expanding opportunities for community benefit and enhancing community capability to participate in tourism through facilitation and capacity building. Thus, the community-focused DMS would meet the goal of achieving both actor and system well-being, as outlined in the literature. Zhang et al. (2022) also argue that adequate participation opportunities in tourism development for residents can be provided through various forms of institutional arrangements. Thus, one of the key roles of the DMS as an institutional arrangement is to facilitate community participation in the co-creation process, both through the website and within the broader tourism destination.

## **Chapter 10. DMS and Destination Community in Indonesia: Examples from the Wakatobi and Banyuwangi Tourism Destination Websites**

This chapter integrates the theoretical and empirical aspects of this research to examine the DMS operation in Indonesia, particularly in enabling community participation in tourism, with a focus on the DMS for regional destinations in Indonesia. It begins by discussing the current adoption of the DMS in regional destinations in Indonesia, using as examples the DMSs for the Wakatobi and Banyuwangi Regencies. This analysis informs the formulation of a proposed framework for DMS practices aimed at strengthening community participation in tourism development. The final section of the chapter explores the application of the Motivation–Opportunity–Ability (MOA) framework in the DMS context.

### **10.1. DMS Adoption in Indonesia**

This section delves into the adoption of the DMS in regional destinations in Indonesia, focusing on how these systems support community participation. Drawing from the findings from the Indonesia regional destination website evaluation, DMS stakeholder interviews and the Delphi study, the discussion begins with a clarification of DMS terminology, comparing the definition with how DMSs are implemented in Indonesia. It then examines the application of DMS functions in supporting community involvement, using the Banyuwangi Tourism and Wakatobi Tourism websites as examples of DMS adoption in Indonesia's regional destinations. The section concludes with a discussion on Indonesia DMS application for regional destination management.

#### **10.1.1. Digital Management System Terminology: Proposal from Delphi Experts.**

The review of DMS terminology in the extant literature (see in section 2.4.2) highlights the lack of a unified and clear definition of a DMS, with most definitions derived from practical applications. Early in that section, this research proposed a broad definition of DMS as an ICT application representing a tourism destination, operated by the DMO, and focused on providing various tourism-related information. The Delphi study was employed to explore DMS definitions from the perspective of experts. The resulting definition proposed by the expert members of the Delphi panel is:

A destination management system (DMS) is a destination-focused knowledge-based information and communication technology (ICT) platform operated by the destination management organisation (DMO).

The DMS facilitates collaboration and decision-making processes of all tourism stakeholders by connecting them through the DMS network and supports the DMO to perform its marketing and management responsibilities.

The Delphi panel members' characterisation of a DMS as a "knowledge-based ICT platform" represents a significant shift from traditional understandings of the DMS as primarily web-based applications that cater to a limited range of destination stakeholders. Historically, scholars such as Benckendorff (2019), Horan (2010) and Sigala (2013) have largely defined the DMS within the confines of web-based platforms designed to manage and disseminate tourism-related information. However, the Delphi panels' definition aligns more closely with the concept of a knowledge-based destination, which views a destination as a dynamic network of competencies that coordinates tourism actors and resource configurations to facilitate and enhance tourist experiences, thereby contributing to regional development (Fuchs et al., 2013; Trunfio & Campana, 2019).

In the practical context, a DMS, envisioned as a knowledge-based ICT platform, is expected to connect all stakeholders within the destination ecosystem, including the local community, and to support decision-making processes through the aggregation and dissemination of knowledge. This expanded role necessitates that the DMS not only acts as an information provider but also as a facilitator of stakeholder collaboration, ensuring that both the supply and demand sides of tourism are effectively integrated in its network and included in the information sharing process within the network. The integration of local knowledge into the DMS, as emphasised by Trunfio and Campana (2019), is crucial for fostering innovation in tourism practices and ensuring that the platform remains relevant and beneficial to all the actors involved.

While the concept of a knowledge-based ICT platform has predominantly been associated with smart tourism frameworks, its application to the DMS has been less common, with only a few scholars, like Gretzel (2022) and Sheehan et al. (2016), acknowledging the DMO's potential role in coordinating knowledge-sharing within destinations. The Delphi panel's proposed redefinition of DMS reflects a forward-thinking approach that suggests the DMS should evolve to incorporate the ecosystem perspective of destinations and embrace advanced ICT adoption in tourism, in line with the principles of the S-D logic framework. This evolution highlights the potential for the DMS to play a more integral role in destination management by facilitating comprehensive stakeholder engagement and supporting the co-creation of value within the destination ecosystem.

The conceptualisation of the DMS as a knowledge-based ICT platform carries significant implications for its responsibilities, particularly in facilitating stakeholder collaboration, decision-making processes, and supporting marketing functions. This broader role requires the active involvement of all the actors within the destination ecosystem, moving beyond the traditional focus on marketing. While the notion of a DMS extending its role to facilitate stakeholder collaboration is not entirely new, as highlighted by scholars such as Estevão et al. (2020a, 2020b), Le et al. (2021), Martins et al. (2021) and Zehrer et al. (2005), the Delphi panel's proposed definition marks a distinct shift. It places greater emphasis on the inclusion of all the actors within the destination including community, rather than focusing solely on commercial stakeholders. This perspective aligns with the evolving understanding of the DMO's broader management role, where the DMS is not merely a tool for marketing but a comprehensive platform for stakeholder management.

The inclusion of all the actors in the destination ecosystem reflects a more holistic approach to destination management, recognising the importance of diverse contributions in the co-creation of tourism value. Zainal-Abidin et al. (2023) support this view, suggesting that a DMO's ICT platform, when managed effectively, can play a crucial role in coordinating these expanded responsibilities, thereby enhancing the overall governance and success of the destination. Importantly this current study reveals how this can occur in practical terms related to implementation processes, specifically through DMS functions. In proposing a new terminology for the DMS, the Delphi panel of experts suggested that the aims and functions of a DMS should align with its definition as a knowledge-based ICT platform.

Table 10.1 provides a summary of the purposes of the DMS, along with the DMS functions, grouped under themes, that emerged from the Delphi study (see in Table 7.7).

Those themes are:

- (1) "Content Management", encompassing functions that manage information flow within the system, including content dissemination on the website.
- (2) "Visitor Information Services", comprising tourism-related details such as available public services and links to digital platforms of local businesses.
- (3) "Tourism Destination Monitoring", which includes functions for tracking and reporting the current status of the destination.
- (4) "Communication Channels", facilitating interactions among stakeholders.
- (5) "Data Aggregation System", involving the collection, storage, and analysis of incoming information.

**Table 10.1. Summary of DMS Purposes and Functions**

<b>DMS Purpose</b>	<b>DMS Functions</b>
<b>To facilitate collaboration among tourism destination stakeholders.</b>	<ul style="list-style-type: none"> <li>• DMS Content Management</li> <li>• Communication Channel</li> </ul>
<b>To be the official portal to access information about the tourism destination.</b>	<ul style="list-style-type: none"> <li>• Visitor Information Services</li> <li>• Communication Channel</li> </ul>
<b>To promote individual tourism products as well as the destination as a whole</b>	<ul style="list-style-type: none"> <li>• Visitor Information Services</li> </ul>
<b>To support the DMO to manage the distribution and the standard of tourism products.</b>	<ul style="list-style-type: none"> <li>• DMS Content Management</li> <li>• Visitor Information Services</li> </ul>
<b>To frequently monitor tourism development in the destination for evaluation purposes.</b>	<ul style="list-style-type: none"> <li>• Tourism Destination Monitoring</li> <li>• Data Aggregation System</li> </ul>

Among the five DMS purposes in Table 10.1, the role of the DMS as a destination monitoring tool stands out as a significant finding when compared with the existing literature on DMS roles. The literature predominantly emphasises DMS roles in facilitating collaboration among tourism stakeholders and promoting tourism products, which aligns with the purposes most frequently mentioned by the panel (Benckendorff et al., 2019; Estêvão et al., 2020a, 2020b; Le et al., 2021; Zainal-Abidin et al., 2023; Zehrer et al., 2005). Additionally, Benckendorff et al. (2019) noted that the DMS often serves as the official information source for tourism destinations, with URLs typically reflecting a region or destination name. The Delphi panel members, however, recommended that the DMS should also incorporate a data aggregation system to inform tourism stakeholders, particularly in destination management and future planning decisions. This recommendation aligns with the smart tourism framework, where data aggregation systems are essential for automatically generating knowledge, an integral aspect of a knowledge-based ICT platform (Boes et al., 2016; Gretzel et al., 2015).

The work by Fuchs et al. (2013) on knowledge-based ICT platforms further illustrates that these platforms can produce reports on local tourism development, a concept reflected in the Delphi panel's vision of DMS monitoring outputs for evaluation purposes. This finding underscores the forward-thinking nature of the Delphi panel in advocating the integration of smart tourism concepts within DMS platforms, despite practical challenges related to data safety and security. Additionally, this study identifies novel DMS functions, such as those related to dynamic content management, tourism destination monitoring and data aggregation systems, which have not been previously recognised in the literature. These new functions suggest an evolving role for DMS, expanding its responsibilities beyond traditional applications.

The DMS content management function was emphasised by the Delphi panel as a distinguishing feature of the DMS, with the panel experts advocating a structural approach in content creation that involves the local community. This aligns with Sigala's (2013) concept of the DMS as a community marketer, facilitating co-production in which local communities, as original inhabitants, play a key role in content creation. The key distinction, however, is that community marketing also involves a wider range of actors, including tourists who recommend businesses to other DMS users. Thus, the Delphi experts' views on content management function more closely reflects the principles of internal marketing and co-production, as detailed in section 8.3.

An interesting finding related to the DMS concept is the identification of its primary users. The Delphi findings suggest that the functions of DMS are primarily designed to benefit tourists, tourism authorities and tourism businesses. This perspective aligns with the existing literature on DMS, which contends that these groups are generally regarded as the primary beneficiaries (Estêvão et al., 2020a, 2020b; Le et al., 2022; Martins et al., 2021; Zehrer et al., 2005). The Delphi panel did not view residents as primary beneficiaries, despite recommending the DMS as a knowledge-based ICT platform that considers residents as integral co-creators of destination value. This finding illustrates the tourist-centric approach to DMS adoption, as destinations are often represented by DMOs that emphasise traditional marketing roles (Corak & Zivoder, 2017; Gartrell, 1994; Pike & Page, 2014).

The Delphi panel did not reach a consensus on considering the community as primary beneficiaries of the DMS. In the initial round, however, the Delphi panel identified the destination community, comprising tourism businesses, informal enterprises, and residents, as one of the primary beneficiaries. The Delphi panel did not reach a consensus on identifying the community as the primary beneficiaries of the DMS. However, in an earlier round, the panel recommended that the destination community, comprising tourism businesses, informal businesses, and residents, be considered the main beneficiaries. The lack of consensus may stem from insufficient communication channels and information flow from the DMS to the local community, both in current practices and academic literature, with only a limited number of articles addressing this issue. Consequently, this suggests that the current DMS lacks the necessary capability to engage with the destination community, particularly its residents. Nevertheless, applying the concept of the DMS as a knowledge-based ICT platform suggests that the community, as active tourism actors, should be beneficiaries of the DMS.

While some experts may view the community as secondary beneficiaries, previous discussions, particularly those concerning the MOA model as means for community participation, emphasise the need to apply the MOA dimensions collectively due to their

interrelated nature. The Delphi experts may perceive the DMS primarily as a medium for community engagement, considering that the community could derive value from other tourism initiatives. However, this perspective represents a missed opportunity, as the Delphi experts may overlook the DMS's potential to facilitate the creation of tourism value propositions for the community. the significance of recognising value in tourism as a catalyst for community participation. Consequently, extending tourism benefits to the community through the DMS is essential to fulfilling its role in supporting community participation.

### **10.1.2. DMS Adoption in Indonesia: Reflections from the Banyuwangi Tourism and Wakatobi Tourism Destination Websites and Regional Destination Websites Evaluation**

The stakeholders associated with the Banyuwangi and Wakatobi tourism websites presented a clear contrast to the concept of a knowledge-based ICT platform as outlined by the Delphi panel. In both examples, the DMS are primarily focused on functioning as digital tourism information centres and marketing platforms for promoting local tourism products and destinations. The DMS aims, in these cases, reflect the traditional role of the DMS in communicating individual or collective tourism offerings to tourists (Sigala, 2013; Sourak, 2015), rather than embracing the broader, integrative functions recommended by the Delphi panel. This is consistent with the regional destination evaluation, which indicates that most destination websites primarily focus on promoting tourism services and events. Findings from both the regional destination website evaluation and stakeholder interviews indicate that the current DMS models in Indonesia continue to adopt a traditional marketing approach, with limited consideration for how the benefits of tourism can extend to local businesses and the wider community.

A disparity exists between the DMS concept proposed by the experts in the Delphi panel and the existing state of DMS in Indonesia. This lies in the nascent stage of regional destination website development in the country. Insights derived from the Delphi study highlight the minimal discourse about DMO and DMS in Indonesia, as illustrated by Wakatobi and Banyuwangi, which are among the few destinations with stand-alone websites that are independent of government services. An Indonesian tourism expert participating in the Delphi interviews expressed concerns regarding the delayed development of destination websites. The Indonesian website evaluation further suggests that DMS development in Indonesia is lagging, as only a few regional destinations within the strategic tourism areas have established websites, and even fewer provide regularly updated content, reflecting static nature of the systems. The Delphi expert attributed this issue to the complex bureaucratic procedures dictated by the Public Information Transparency Act (No. 14, 2008) and the Public Services Act (No.

25, 2009), which regulate and slow down destination website development. Consequently, much of the tourism-related information remains embedded within tightly regulated government websites, limiting DMS progress. This aligns with previous literature that underscores the importance of leadership, governance and social capital in ICT adoption in tourism (Buhalis, 2003; Boes et al., 2016).

As discussions on destination management and the role of DMOs progress, there is a growing need for discourse surrounding the development of DMS as a knowledge-based ICT platform. Such a discussion is crucial to accelerate DMS evolution in Indonesia from its emerging stages to a more advanced, integrated system that supports the broader goals of destination management and stakeholder engagement. The DMS as a knowledge-based ICT platform were characterised by involvement of all tourism actors in the system networks; features notably absent in Indonesian regional destination websites and their operation. The stakeholders connected to the Wakatobi and Banyuwangi tourism websites further revealed a lack of engagement with the community, including local businesses, residents and informal enterprises, who remain largely uninformed about DMS developments. This was evident from the lack of updated content, particularly in the promotional information on tourism businesses and services identified in the website evaluations.

The limited interaction between DMS operators and community illustrates centralised control exercised by regional governments that function as both DMOs and DMS operators, which restricts meaningful stakeholder participation with consultations largely occurring only when necessary. The top-down approach demonstrated by the regional governments reflects Indonesia socio-political situation particularly in governing tourism development. The national government often sets the priority initiatives that the regional government must follow. An example of this disconnect is the "tourism village" programme, which aims to transform villages in Indonesia into tourist attractions, drawing on the concept of community-based tourism (CBT). However, as the programme is predominantly a top-down approach, the involvement of residents is often lacking, even though the village has been officially designated as a "tourism village". As a result, many tourism villages fail to sustain their activities, and in some cases, social conflicts arise between residents who actively participate in the tourism programme and those who do not. Another example is found in the rare cases where destination websites adopted a booking system. However, these systems only feature products from government-owned business entities, highlighting a lack of inclusivity and limited coordination with other stakeholders, particularly private and informal tourism businesses.

This limited engagement can be described using Tosun's (1999) concept of tokenism in community participation, where stakeholder involvement is symbolic rather than

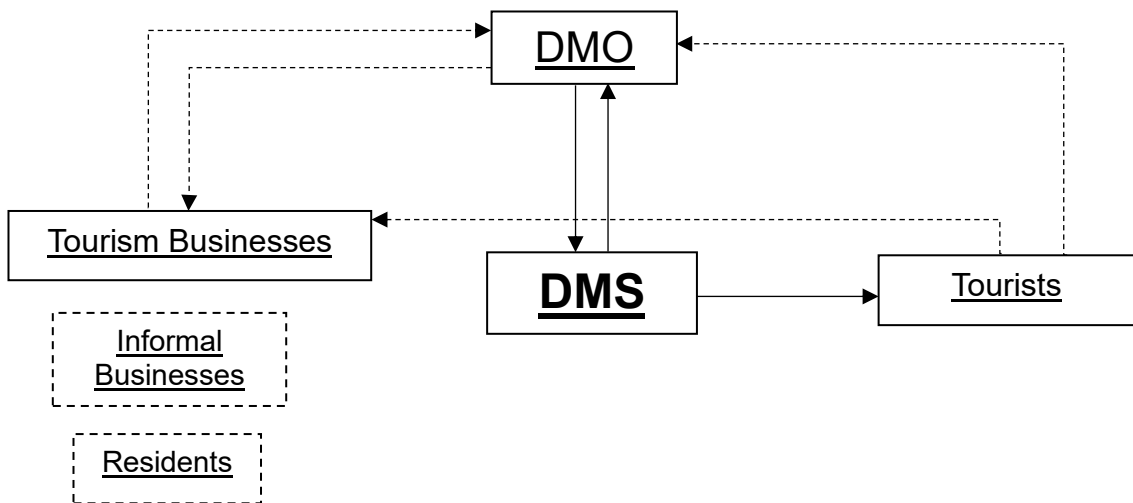
substantive. In essence, the operation of these DMS models involves a narrow group of stakeholders, namely the DMOs, tourism businesses and tourists, supporting the literature's observation (Estêvão et al., 2020a; 2020b; Le et al., 2021; Martins et al., 2021; Zehrer et al., 2005) that traditional DMS platforms are often designed to facilitate collaboration among a limited set of actors. Consequently, the two DMSs in these case studies fail to embody the knowledge-based ICT platform's principles of interconnectivity and inclusivity, which are essential for supporting the broader tourism ecosystem, including the local community.

The findings from the stakeholder interview highlight that both the Banyuwangi Tourism and Wakatobi Tourism websites were primarily developed for marketing purposes, with minimal evidence on either website of functions that enable collaboration among tourism stakeholders. Although the Indonesian regional destination website evaluation suggests that the communication and relationship functionalities are increasingly being adopted in DMSs, their application remains largely focused on facilitating communication between tourists and the DMOs. Collectively, these findings suggest that the DMSs in these cases adhere to a traditional model, focusing more on destination promotion rather than facilitating a comprehensive stakeholder network. A key stakeholder from the Banyuwangi DMS operator highlighted that destination websites were developed in response to the growing trend of consumer demand, where purchasing behaviour is increasingly shaped by internet-sourced information. However, the internet encompasses a vast network of platforms, and DMSs or destination websites are not the sole source of destination information. In fact, word-of-mouth (WOM) is often argued to be more effective in influencing tourists' purchasing decisions, as noted by Suryaningsih et al. (2020).

While DMSs are traditionally viewed as marketing platforms, they also have the potential to facilitate collaboration among destination stakeholders, as proposed in numerous studies (Estêvão et al., 2020a, 2020b; Le et al., 2022; Martins et al., 2021; Zehrer et al., 2005) and can be extended to include social actors as proposed in this research. The findings of this research demonstrate an example of collaborative efforts for DMS marketing function through social media posts from destination communities, which also leverage the advantages of WOM marketing. However, findings indicate that this collaborative capability of DMS has yet to be fully considered by DMOs or regional governments in Indonesia in their DMS development efforts.

Figure 10.1 illustrates the current operational structure of these two DMS platforms. The arrows in the diagram depict the flow of information: solid lines indicate direct information exchanges facilitated by the DMS, while dashed lines represent communication that

occurs through alternative channels outside of the DMS framework such as face-to-face communication in formal forum or through Whatsapp.



**Figure 10.1. The Operational Structure of the Banyuwangi Tourism and Wakatobi Tourism DMS Platforms**

Figure 10.1 also illustrates that the current DMS model in Banyuwangi Tourism and Wakatobi Tourism primarily facilitates one-way information sharing between the DMO and tourists, without offering significant communication channels between stakeholders. This observation is reinforced by findings from the Indonesian regional destination website evaluations and stakeholder interviews for Wakatobi and Banyuwangi, which show that interactive functionalities facilitating communication among community members, tourists, and website operators are very limited. These findings echo concerns raised by the DMS stakeholders, who noted the absence of communication from the DMO to local community members, including tourism businesses, regarding the initiation and operation of the DMS.

In contrast, an ideal DMS should include interactive functionalities to foster communication between tourists and destination stakeholders, as suggested by Benckendorff et al. (2019), Estêvão et al. (2020a), and Wang and Russo (2007). However, in these two DMS examples, the websites provide only basic contact details, such as phone numbers or WhatsApp accounts, for the businesses featured, rather than interactive communication tools. In a few Indonesian websites, a comment box is available on business pages; however, this feature is rare and appears to be seldom used based on the reviews found. This limited approach means that most tourism businesses and DMOs rely on traditional communication methods like phone calls or messaging platforms. These findings align with Estêvão et al.'s (2020a), which identified minimal application of communication, transactional and relationship functionalities in DMS platforms across Europe and the USA, suggesting that DMS adoption in developing countries, specifically Indonesia shows little difference to that in developed countries.

Limited interactive communication in Indonesia stems from both communication patterns and inadequate infrastructure in remote areas. WhatsApp is the primary ICT tool for communication and business transactions, including tourism, as noted by Adayana et al. (2022). However, reliance on WhatsApp is restricted by smartphone and internet access, potentially excluding certain communities. This underscores the need for DMS platforms with interactive features to offer more inclusive communication. For example, the Stay Raja Ampat website processes bookings via SMS, bridging the gap between visitors and local hosts in areas with poor internet access. Such features not only enhance communication but also support community participation, addressing barriers highlighted by Tosun (2000) particularly related to the practical barriers such as lack of coordination and infrastructure to organise participatory initiatives. By providing accessible communication channels, DMOs can foster greater inclusion and engagement at the destination level, making DMS a valuable tool for both marketing and community participation.

DMS adoption in Indonesia, as evidenced by the cases of Banyuwangi Tourism and Wakatobi Tourism, reveals a lack of a collaborative approach with local tourism businesses and community members, particularly in their marketing strategy. In their interviews, the stakeholders indicated minimal communication was initiated by the DMO to involve the community in DMS operations. Businesses and community groups featured in the DMS expressed a desire for training programmes from the DMO to enable them to effectively contribute to create content for the website. The lack of communication about DMS development with the community, coupled with limited community capacity-building initiatives, has resulted in static tourism product information on Indonesian regional destination websites. The absence of a transaction functionalities such as booking system within the DMS, especially for local businesses, further highlights the lack of collaboration. A distribution channel, allowing tourists to book or complete transactions through the system, could better connect local businesses to tourism demand. While not all DMSs globally include such functionality (Benckendorff et al., 2019; Horan, 2010; Sourak, 2015; Sigala, 2014), it could be particularly beneficial in Indonesia where, for example, small archipelago destinations face unique logistical challenges to approaching third-party distribution systems.

The limited collaborative effort evidenced on the Banyuwangi Tourism and Wakatobi Tourism websites contrasts with the broader conceptual role of the DMS in the literature, where collaboration among tourism stakeholders, especially for promoting tourism products, is central (Estêvão et al., 2020a; 2020b; Le et al., 2021; Martins et al., 2021; Zehrer et al., 2005). This reiterates an earlier point in this section that Indonesia's DMS adoption is an early form of DMS development and is focused on its role as a promotional tool and utilised mostly information functionalities which create limited promotional

functions that resemble enhanced but static e-brochures. This DMS model resembles the earlier model of DMS as introduced in Pollock (1995). Although advancements in multimedia presentation have improved website design, the lack of interactive functions results in mostly static content, as seen in the two examples of the DMS in Indonesia.

In summary, the evidence of DMS operation in Indonesia reveals that the existing functions within these systems have not been sufficiently adapted to address the broader management needs of DMOs, particularly in facilitating the information requirements of all stakeholders in the destination. The discussion highlights that the top-down governance approach of DMS, characterised by limited communication between DMO and tourism stakeholders, hinders the development of the system. As a result, the potential of DMS to support community participation, as illustrated by two case studies, remains largely underutilised. This top-down approach not only restricts the DMS's effectiveness in engaging the community but also undermines its potential to foster a more collaborative and inclusive model of tourism development in Indonesia. Given that DMS development in Indonesia is still in its early stages, there is an opportunity to enhance their adoption to better meet the specific needs of the country's tourism sector.

## **10.2. A Community-Focused DMS for Indonesia**

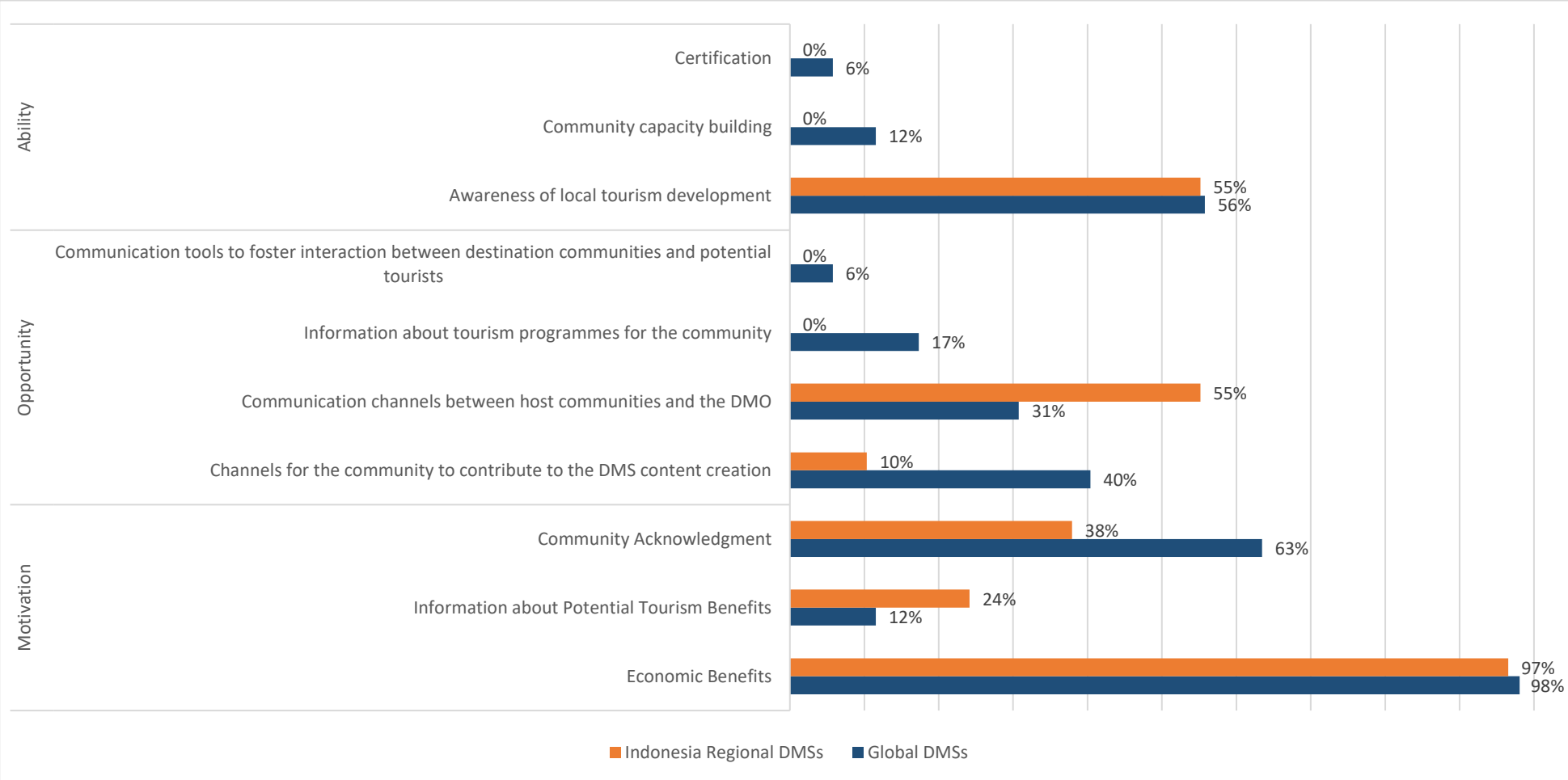
This section proposes a recommended approach for the development of Destination Management Systems (DMSs) in Indonesia, aimed at optimising their potential to support community participation in tourism development. The proposed approach also seeks to bridge the gap between the management functions of Destination Management Organisations (DMOs) and the traditional marketing functions of DMSs. The formulation of this approach draws on insights from earlier discussions on DMS adoption in Indonesian regional destinations, particularly concerning the integration of community related elements within their functions.

This research has revealed that Indonesian regional destination websites, similar to many global DMS practices, include functions that can facilitate community participation, albeit with some discrepancies in the types and prevalence of these functions. When comparing global and Indonesian regional destination websites, only minor differences are evident in motivation, opportunity, and ability related functions, as motivation-related functions remain dominant in both contexts. However, a notable distinction lies in the community acknowledgment functions, which are more prevalent in global websites. This difference can be attributed to Indonesia's tourism development priorities, which tend to emphasise tourism growth over community representation. This is exemplified by culture-based attraction content on Indonesian websites, which primarily highlights available tourism services rather than conveying the cultural significance of these attractions to local communities.

Another key discrepancy appears in several themes under the opportunity and ability dimensions, such as information on community-oriented tourism programmes, communication tools facilitating interaction between destination communities and potential tourists, and initiatives related to community capacity-building and certification. These functions are designed to empower local communities and encourage their engagement with both DMS operations and tourism activities more broadly. Their absence from Indonesian DMSs suggests that these systems are developed with limited community involvement, resulting in inadequate attention to community information needs. The top-down nature of DMS development in Indonesia, as discussed in Section 10.1, may also explain the lack of functions that enable community contributions to DMS content creation, features that are considerably more common in global destination websites. The comparison of findings between global and Indonesian regional destination website evaluations is illustrated in Figure 10.2, which presents the proportion of websites adopting functions that facilitate community participation in both contexts.

While Indonesian DMSs possess functions that could support community participation in tourism development, their implementation has yet to be optimised for this purpose. As discussed in Section 10.1, DMSs in Indonesia remain largely focused on one-way marketing capabilities and have not fully leveraged their potential for interactive and participatory engagement. Evidence from the Banyuwangi Tourism and Wakatobi Tourism websites indicates that the limited development of Indonesian DMSs, particularly in providing services to local communities, stems from the top-down approach adopted in their design and operation.

Accordingly, the discussion that follows outlines a framework for developing DMSs in Indonesia that serve not only tourists but also local communities. This framework addresses the current limitations of regional destination websites by outlining key challenges and offering recommendations for future DMS development. Drawing upon insights from the study's findings and preceding discussions, these recommendations inform the development of a community-focused DMS framework, one that prioritises local community needs and fosters greater participation in tourism development, specifically tailored to the Indonesian context.



Note: Based on 52 global and 29 Indonesia regional destination websites in Indonesia

**Figure 10.2. The Comparison of Global and Indonesia Regional Destination Websites Evaluations Findings**

### **10.2.1. DMS Development Challenges and Recommendations**

The findings from the interviews with stakeholders in Banyuwangi Tourism and Wakatobi Tourism suggest that current DMS development in Indonesia is hindered by a top-down management approach, which has led to several operational inefficiencies. These inefficiencies include frequent technical issues such as website access problems, as well as outdated and inaccurate content as observed in many evaluated Indonesian destination websites. Local business operators expressed frustration with having to repeatedly submit their information, indicating a lack of coordination and proper management. This reflects a broader issue of governance, where the DMO, typically a local government entity, is not adequately equipped to handle the technical and management demands of operating a DMS. Effective governance is critical to the successful implementation of ICT in tourism, as emphasised by scholars like Buhalis and Law (2008), Boes et al. (2016), and Gretzel (2022). Without addressing these management and operational challenges, the potential of the DMS to support community participation and improve tourism outcomes remains unrealised.

The findings from both the Delphi study and the stakeholders' interviews highlight that Indonesia's socio-political landscape presents significant challenges for the continuity of DMS development at the regional level. One key issue is the country's political cycle, which changes every five years, affecting the ability of local governments to manage long-term initiatives like DMS projects. This shifting political landscape directly influences development priorities, and subsequently, policies and funding for sectors such as tourism. Although Indonesia adopted a decentralised approach over two decades ago, the national government still exerts substantial control over regional governments in terms of policy making and financial support, reflecting the centralised nature often apparent in developing countries (Bello et al., 2017). This centralisation leads to frequent shifts in tourism development policies, as seen with the shift from the "10 New Bali" initiative announced in 2016 to the "5 Super Priority Destinations" project that launched in 2019. These policy changes disrupt consistent tourism development at the destination level. Additionally, the Delphi panel members expressed concerns over the political appointments of DMO leaders, which further destabilises long-term tourism projects, undermining their continuity and effectiveness.

To avoid social and cultural disruptions in the development of the DMS, it is crucial to incorporate a bottom-up approach to balance the top-down national governance framework of tourism development in Indonesia. This approach is vital for comprehending the development challenges faced by each region, especially given the geographic vastness of the nation in which the government exerts control. This approach can leverage local knowledge from regional governments and communities to address

tourism-related issues. As Magnusson et al. (2024) suggest, sustainability challenges in tourism are context dependent. At the regional level, adopting a bottom-up approach alongside the top-down governance framework can foster collective decision-making in the planning and management of tourism initiatives, including DMS development.

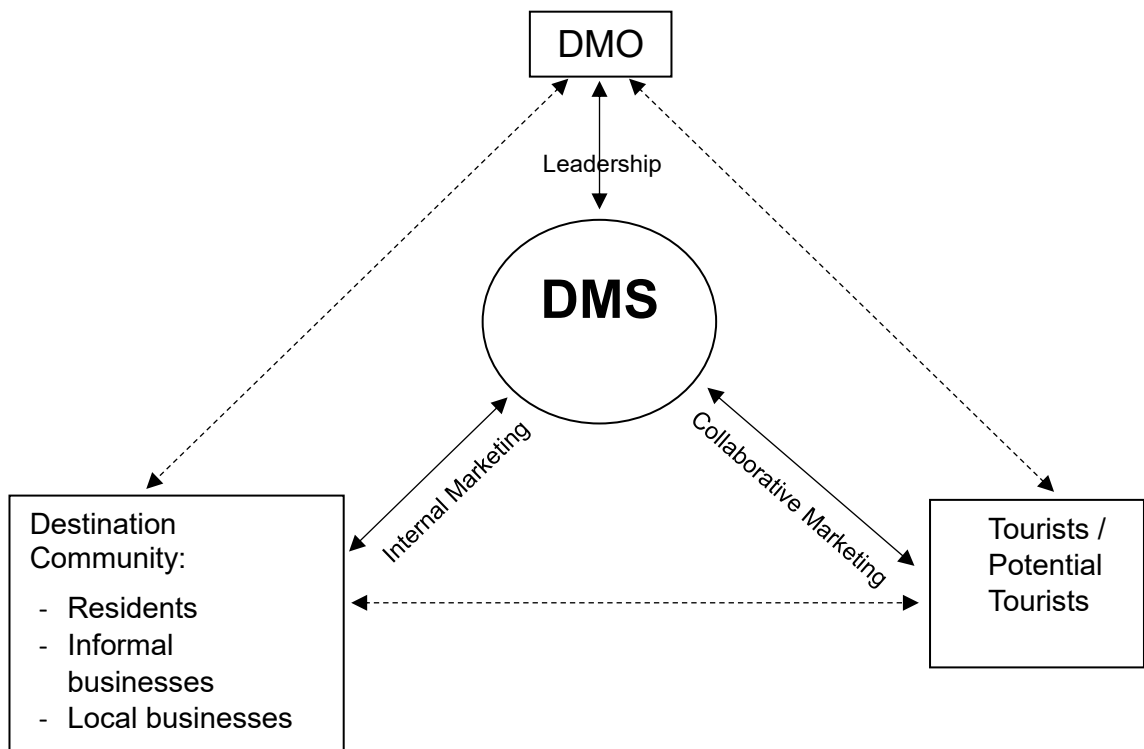
The dominant findings from both the DMS stakeholders' interviews and the Delphi study highlight that development of the Banyuwangi Tourism and Wakatobi Tourism websites could be more effective if a bottom-up governance approach were adopted to foster a collaborative model. The Delphi panel members strongly recommended engaging local communities in the DMS development process, suggesting that a participatory framework could address critical tourism challenges, including its operational sustainability. In their interviews, the DMS stakeholders similarly proposed that providing training for community members to assist in the operation of the DMS, particularly in content creation, would alleviate the burden on DMOs, which are often overloaded by their dual responsibilities as both government bodies and tourism managers, particularly in the Indonesian context.

Inclusion of the collaborative approach in the DMS operation not only creates opportunities for community members to contribute directly to tourism initiatives but also strengthens their capabilities through targeted skill-development programmes, which will eventually provide value for community members. A bottom-up approach, characterised within a participatory framework, would facilitate the incorporation of local knowledge, especially in effectively communicating DMS projects to key tourism stakeholders. Such involvement would ensure that the DMS is more closely aligned with the local context and better equipped to address specific tourism challenges. This argument is supported by the literature, which asserts that community participation strengthens the link between tourism initiatives and local benefits (Cole, 2006). Furthermore, adopting a collaborative approach would also uphold ethical principles of democracy and inclusivity in destination management, as emphasised by various scholars (Basile et al., 2021; Eyisi et al., 2021; Scheyvens & Biddulph, 2018). Therefore, the collaborative approach in DMS governance would engage a larger group of communities including residents, tourism businesses and informal enterprises, reduce the workload on DMOs, and enhance the effectiveness of the DMS in addressing local tourism issues.

Considering the status of tourism destination websites and the challenges associated with the evolving roles of the DMS, this research proposes a framework for the DMS that is grounded in an ecosystem view of the destination. A key element of the destination ecosystem, as informed by S-D logic, is the co-creation of destination value, requiring the engagement of both social and economic actors (Vargo & Lusch, 2008). Findings from the global website evaluations highlight the potential of DMS functions not only to

disseminate tourism-related information but also to support community participation in the co-production of DMS content and wider tourism initiatives. This potential to foster community involvement supports the bottom-up approach to DMS adoption, as recommended by the Delphi panel of experts and the DMS stakeholders. Collaboration within the destination community ensures that DMS objectives are more closely aligned with local needs.

Figure 10.3 depicts the proposed community-focused DMS framework for Indonesia. The lines in Figure 10.3 represents the interactivity between the DMS and the DMO, tourists (including potential tourists), and the destination community, with the solid lines representing DMS facilitated interactions and the dashed line representing interactions outside the digital network. Thus, Figure 10.3 illustrates the interrelationship between the DMS and the three main groups of tourism actors.



**Figure 10.3. A Community-Focused DMS Framework for Indonesia**

In this proposed community-focused framework, the three main groups of tourism actors interact both through the DMS and outside the system creating the collaborative approach to the DMS operation. The non-digital relationships represent the social, non-technological dimension, which plays a crucial role in the effectiveness of digital tools in supporting the co-creation process within the destination ecosystem. These social elements reflect the concept of *soft smartness*, which is a key factor in the success of co-creation in smart tourism systems (Boes et al., 2016). Social elements influencing the effectiveness of ICT adoption include open innovation, human and social capital, leadership and collaborative governance (Boes et al., 2016; Buhalis, 2003).

The findings suggest that socio-political factors and limited dialogue about DMS development derived from the top-down approach of DMS governance are significant challenges. These insights highlight the importance of considering the social and political context when developing DMSs for Indonesia regional destinations. The integration of the internal marketing concept could offer a practical governance framework by fostering a 'governance community' that complements the formal structure of Indonesia's government and addresses the socio-political challenges within the tourism sector. The reciprocal relationships between tourism actors outside digital networks are a prerequisite for the effective adoption of ICT platforms in tourism management.

This argument is consistent with empirical studies showing that the success of ICT platforms in promoting sustainable tourism often hinges on how strategically they are integrated into tourism development initiatives (Barandiaran et al., 2019; Valls & Roca, 2021). The "non-digital" relationships of tourism actors are tied to resource sharing, encompassing knowledge and services, in co-creating destination value as framed by the S-D logic model (Vargo & Lusch, 2008). According to S-D logic, resource sharing among destination actors should be mutually beneficial, creating a system of well-being (Vargo & Lusch, 2008). This ensures that all actors derive value for themselves and the destination (Rong-Da Liang et al., 2023). In practice, DMOs can share information with the local community on aspects like tourism demand, development strategies and capacity-building opportunities, thereby improving the community's access to tourism benefits.

From the tourist's perspective, they can receive information about local services and products, enhancing their overall experience. Simultaneously, the DMO can leverage insights from both the supply and demand sides to shape tourism destination development strategies. In the context of the DMS, knowledge sharing between all actors provides the DMO with the necessary local context to design the DMS adoption in support of their management role. As one Delphi panel member noted, the success of DMS adoption is closely linked to the social conditions of the host destination. In the proposed framework, the DMS presents as a catalyst for the co-creation process by providing a digital platform that enhances the connectivity of tourism actors within the destination network ecosystem.

The advancement of mobile technology has significantly increased this connectivity, allowing a larger proportion of the population to engage with digital networks, including the DMS (Buhalis, 2020). Indonesia, with 77% of its population connected to the internet as of 2023 (Kemp, 2023), ranks in the upper half of the 2022 Network Readiness Index (NRI), indicating a strong digital foundation. However, DMSs implemented in Indonesia regional destinations remain limited in essential interactive features, such as

communication, relationship management, and transactional capabilities, as observed in the website evaluation. These shortcomings hinder their ability to foster effective stakeholder engagement. The integration of user-generated content (UGC) and content management systems (CMS) has been identified as a means of enhancing system connectivity, particularly with the supply-side stakeholders, including local communities.

While much of the literature on DMS collaboration frameworks has overlooked certain community groups (Estêvão et al., 2014, 2020a), successful examples of digital engagement through social media and tourism blogs (Buhalis, 2020) demonstrate the value of UGC and CMS in facilitating wider community participation. Therefore, for the proposed framework to be effective, the incorporation of interactive functionalities within the DMS is essential to create meaningful connections between all the tourism actors and the destination network ecosystem. This proposed framework shown in Figure 10.3 illustrates that the DMS facilitates interactive connections of three groups of tourism actors: tourists, the community and the DMO within the destination network ecosystem. Within the proposed framework, the role of the DMS in facilitating interactivity between tourists and the destination network can be understood within a collaborative marketing model.

Evidence from Indonesia suggests that DMSs remain focused on promotional content aimed at potential tourists, with marketing activities being primarily one-directional and dominated by the DMO, typically the regional government (as discussed in section 10.1.2). In contrast, the proposed community-focused framework advocates a shift towards collaborative marketing, where all the actors, including the local community and the DMO, engage in shared marketing initiatives. *Collaborative marketing*, as defined in the literature, involves stakeholders pooling resources, such as knowledge, to achieve common marketing goals (Garrod & Fyall, 2017; Pascual-Fraille et al., 2024). This approach, recommended by the DMS stakeholders and the Delphi panel experts, emphasises the importance of a bottom-up model to encourage more inclusive and collaborative DMS operations, including in marketing to potential tourists.

While collaborative marketing has been shown to aid brand-building for lesser-known destinations and businesses, its full impact on tourists remains under-researched (Pascual-Fraille et al., 2024). However, studies show that community interaction with tourists significantly enhances destination value (Basile et al., 2021; Cole, 2006), and positive WOM effectively drives tourist behaviour (Suryaningsih et al., 2020). Although further research is needed to explore the full potential of collaborative marketing, existing studies on community engagement and WOM suggest that the involvement of local

actors in the community effort if facilitated can help improve the destination and tourism services brand, which in this context of this research, means facilitation from the DMS.

The DMO, which in Indonesia is typically represented by regional government, plays a unique and pivotal role in destination management. Conceptually, the DMO serves as both a facilitator for ensuring the sustainable functioning of the tourism system and the principal operator of the DMS, thus DMO holds a leadership role on the DMS operation. The leadership role of the DMO related to the DMS operation should focus on coordinating and facilitating value creation among all stakeholders within the system, ensuring that the DMS effectively contributes to the broader goals of destination sustainability and community engagement. This role requires the DMO's oversight of both the system's content and functional capacities, executed in collaboration with other key actors.

By positioning itself as the leader of the DMS, the DMO can reinforce its role as the coordinator of institutional arrangements, a function that aligns with the S-D logic framework (Moliner-Tena et al., 2023). Within this framework, the DMO not only facilitates value co-creation among stakeholders but also enhances its governance and decision-making capacities within the destination ecosystem. As a critical institutional structure, the DMS enables the DMO to fulfil its overarching objectives of promoting sustainable tourism while ensuring the active participation of the host community in the development process. However, for the proposed framework to be effective, it is imperative that the DMO shifts its perspective from a supply-oriented view of the destination, which focuses on the aggregation of tourism businesses, to an ecosystem-oriented perspective. In this latter view, the destination is conceptualised as a networked ecosystem comprising a diverse array of tourism actors, including both commercial and social stakeholders.

A key element of the proposed community-focused DMS framework is the interaction between the local community and the DMS. This interaction can be analysed within the internal marketing framework, yet it remains underexplored in the literature. While some studies have examined the collaboration between local tourism businesses and DMO within the DMS's marketing initiatives (Benckendorff et al., 2019; Estêvão et al., 2020a), this research reveals a different dynamic. Specifically, findings from this case study of the tourism destination websites for the Wakatobi and Banyuwangi regions suggest that there is minimal collaboration in DMS implementation in the context of Indonesia. As previously discussed, the DMS possesses the potential to support community participation by fostering an environment conducive to engagement in tourism. This is achieved through enabling the motivation, opportunities and ability dimensions of the MOA framework for communities to participate in tourism development.

The internal marketing framework offers a useful lens through which these three dimensions, or pull factors, can be effectively delivered. For example, the availability of tourism-related job opportunities and information about community members and groups on tourism destination websites exemplifies successful adoption of two DMS functions that can facilitate the motivation dimension for community participation (see Table 8.1). Internal marketing theory posits that enhancing employee satisfaction leads to improved service delivery (Suzuki & Morimoto, 2014; Zhang et al., 2022). Within the proposed framework, the DMS can extend access to the benefits of tourism thus creating value proposition for community, provide avenues for community to engage in tourism, and enhance community capacity to participate in tourism (inside or outside the DMS) by enabling the pull factors.

Applying internal marketing within destination management through DMS not only facilitates community participation and value creation for all stakeholders, including enhancing tourists' experience, but also fosters the development of a governance community (Zhang et al., 2022). This governance community, characterised by reduced hierarchical power structures and shared responsibilities, offers a practical alternative for managing regional destinations in Indonesia, even within a top-down, centralised government formal structure. The governance community concept is another significant aspect of applying internal marketing, particularly in addressing the socio-political dynamics within Indonesia's tourism sector. Further discussion on the integration of internal marketing frameworks and the MOA model is presented in the concluding section of this chapter.

While the preceding paragraphs have elaborated on the elements of the proposed community-focused DMS framework for Indonesia in Figure 10.3, this paragraph underscores the importance of a paradigm shift towards a destination ecosystem perspective and the optimisation of interactive functionalities within the DMS for the framework to be effective. The integration of the DMS into the destination value co-creation process, particularly in facilitating community participation, is not traditionally recognised as a primary role of the DMS, nor was it recommended by the expert members in the Delphi study. However, as previously discuss, from a destination ecosystem perspective, the role of the community in the creation of destination value is increasingly acknowledged.

Within a S-D logic and knowledge-based destination framework, the community plays a crucial role in contributing local knowledge to foster unique value creation and innovation, ultimately aimed at enhancing the well-being of the system and its actors (Trunfio & Campana, 2019; Vargo & Lusch, 2006). Although current DMS practices in Indonesia do not identify residents and informal businesses as primary users and beneficiaries of the

system, it remains the responsibility of the DMO to facilitate participation from all tourism actors to ensure the sustainability of the tourism system. Thus, there is a clear necessity for the DMO to leverage the DMS as a platform for enabling community participation in local tourism development. For the DMS to serve as an effective platform for the exchange of information among all tourism actors, particularly the local community, its interactive functionalities must be optimised. Therefore, the DMS in Indonesia must evolve into a more interactive ICT platform.

While the proposed community-focused framework for Indonesia presented in Figure 10.3 may diverge from the characteristics of a traditional DMS, it remains consistent with the social construction of technology (SCOT) and social construction of digital technologies (SCODT). According to SCOT, technological artefacts can be redefined in multiple ways, as technological development is not always linear (Selwyn, 2012). Similarly, SCODT suggests that the digital environment created by ICT platforms can be reshaped by its users (van Baalen et al., 2018). Consequently, the proposed community-focused DMS framework for Indonesia merely represents an alternative utilisation of the digital space provided by the DMS, optimising the system's interactive functionalities to support co-creation activities by and for all tourism actors.

### **10.3. Providing “Means” for Community Participation Through Internal Marketing**

The discussion in section 10.2.1 has established the value of integrating internal marketing into destination management. This section will now explore the effective delivery of internal marketing within destination management practices, particularly how delivery can be enabled by relevant DMS functions. A significant distinction between the application of internal marketing in conventional corporate management and its implementation in destination management lies in the identification of the subject and object of internal marketing. In destination management, as discussed in this research, the subject is the DMO, which assumes a leadership role in managing the destination, while the community, comprising residents and local tourism businesses, serves as the co-producers of destination value, consistent with the destination ecosystem perspective. Therefore, when adopting the internal marketing concept for a tourism destination, the focus must shift towards the supply-side actors of the destination (Kaurav et al., 2017; Suzuki & Morimoto, 2014; Zhang et al., 2022), namely the host community, which comprises residents and local tourism businesses, including both formal and informal enterprises. Several challenges arise when applying the internal marketing concept in the context of destination management, particularly concerning governance, as DMOs often lack the authority enjoyed by corporations to enforce rules on employees

(Kaurav et al., 2017). As a result, the objectives of internal marketing in destination management must consider the nature of value delivery in the tourism system, specifically through the co-creation process.

This thesis proposes that internal marketing within a destination should centre on fostering collaboration among all tourism actors in the destination value co-creation process by promoting the well-being of the destination ecosystem and empowering local tourism stakeholders. The previous discussion highlighted the DMS's capability to facilitate interactive communication between the DMO and the community, a critical aspect for effectively implementing the internal marketing model. In the context of internal marketing delivery within destination management, Suzuki and Morimoto (2014) identified two essential activities: (1) gathering input from local tourism actors regarding tourism development, and (2) disseminating information to them; for example, information about the economic impacts of tourism, destination goals and tourism policies. While this approach emphasises capacity-building and offers a platform for community engagement in tourism planning, it overlooks the crucial aspect of motivating the community, which is a fundamental component of internal marketing.

From a different perspective, Kaurav et al. (2017) argue that the internal marketing process should include motivating, empowering and enhancing the capacity of local stakeholders to engage in destination value co-creation. Although the DMS has the potential to facilitate communication with tourism actors, a comprehensive framework that guides internal marketing in providing motivation and capacity-building for community participation in the co-production of destination value is needed. This thesis argues that the MOA model can serve as a guide for the DMS in facilitating internal marketing by encouraging spontaneous community participation. From the community's perspective, internal marketing can be linked to fostering their involvement in local tourism development.

The concept of community participation adopted in this research is anchored in two key objectives: active involvement of the local community in tourism programmes, and equitable access to the benefits generated by tourism activities within the destination. One scenario worth considering is that internal marketing aims to create an environment in which the local community willingly engages in the service delivery process characterising a spontaneous form of participation. In this context, the MOA framework can be employed as a prescriptive tool for DMS facilitated information sharing, enabling the "means" for community participation. This research proposes that internal marketing, delivered by the DMO, should focus on offering motivational factors, providing opportunities for involvement in tourism, and enhancing the capability of local stakeholders to actively engage in the co-creation of tourism value.

The community within tourism destinations consists of individuals who are not obligated to engage in tourism. Therefore, they need motivating factors that encourage them to participate. In this research, the MOA framework is conceptualised as a form of stimulation that enables community participation. Specifically, the motivation dimension of the MOA framework in this study focuses on supporting local businesses, residents and informal businesses to understand the benefits of engaging in tourism. To do this, motivation dimensions can be incorporated in DMS functions to aid in developing these value propositions for the community. Originally, the MOA framework, as introduced by Hung et al. (2011), was perceived as a set of conditions or factors under which community participation could occur. The MOA framework, then, can be used as a tool to understand the factors influencing community participation levels in a destination.

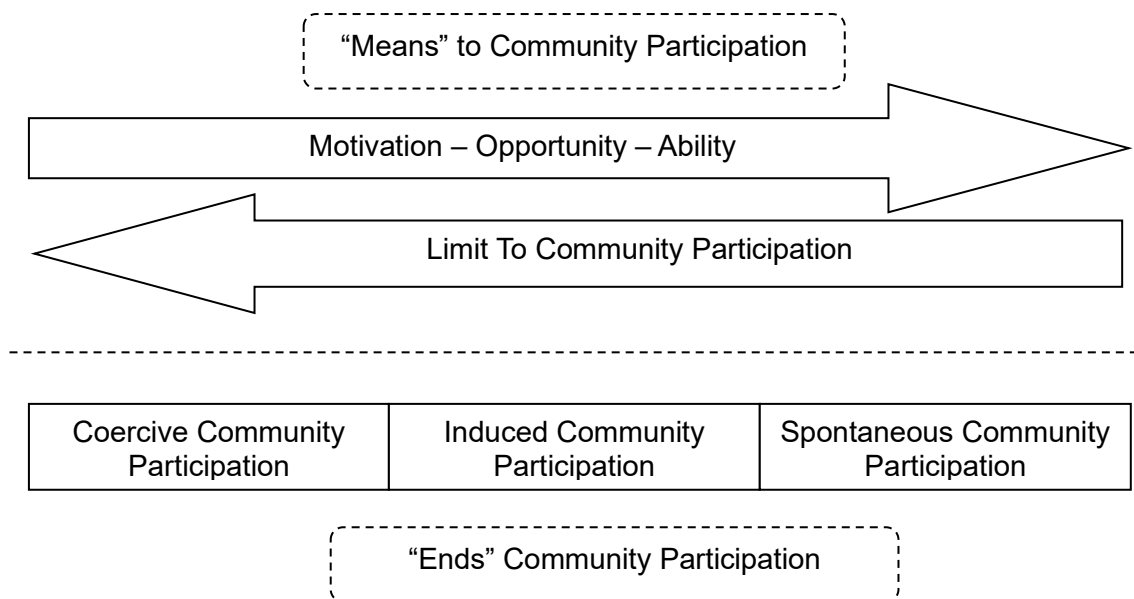
However, the findings of this research suggest that the MOA framework, particularly when facilitated by the DMS, does not fully capture all the factors or dimensions that determine individual community members' participation in tourism. First, the discussions surrounding the DMS enabled motivation dimension reveal that the DMS primarily facilitates community access to tourism benefits. While the most direct benefits felt by the community arise from meaningful interactions with the tourism system, the DMS also extends opportunities for the community to access tourism-related benefits. However, the negative impacts of tourism are not addressed in DMS content, despite the literature highlighting that such impacts can influence community support for tourism (Hung et al., 2011; Latip et al., 2018; Rasoolimanesh et al., 2017a). The findings of this research also indicate that the DMS largely enables extrinsic motivations, such as income generation and employment opportunities, while stimulating intrinsic motivations **such as** place attachment and social recognition, only if it facilitates consistent interactions between the community and the tourism sector and acknowledges the community's contributions.

In terms of the motivation dimension, the DMS can only stimulate the community to participate in tourism, by giving them information about the economic and other benefits of tourism and by acknowledging their contribution to the destination (see Table 4.2). While the DMS functions that enable motivation increase the likelihood a community will want to access tourism benefits, the DMS functions that enable opportunity and ability equip the community with the tools and capabilities to effectively engage in tourism. The DMS functions that enable opportunity facilitate pathways for the community to participate in tourism through co-production functions, while the functions that enable the ability dimension to enhance the community's capability, particularly related to the knowledge, skills and recognition needed to engage in tourism and access its benefits. Thus, integrating the three dimensions, or pull factors, of the MOA model into the DMS, will be a powerful way to enable community engagement in destination value co-creation

that benefits both supply and demand actors. Additionally, the MOA model can be a valuable tool for internal marketing and information sharing, facilitated by the DMS.

While pull factors, such as the three dimensions of the MOA model, can stimulate community participation in tourism activities, this research also acknowledges the challenges that limit community engagement in tourism development, particularly in the context of DMS operation. The research findings have identified political structures and human capital as the primary obstacles to community engagement in DMS development and operation, especially in Indonesia. For example, only a small number of community members possess the necessary copywriting skills to contribute to DMS content creation. A similar issue is reported by Estêvão et al. (2020a), where some DMS managers prefer the DMO to produce promotional content due to concerns about the quality of material generated by local businesses. Additionally, the research has found that when the local tourism authority does not engage with the community when developing the DMS, this also inhibits community involvement in both the planning and operational stages of the DMO. These challenges align with Tosun’s (2000) classification of limitations to community participation in developing countries as practical, structural and cultural barriers.

Although this research has identified only a few examples of these barriers, it recognises that various challenges may emerge in different destinations. Figure 10.4 illustrates the relationship between factors that stimulate community participation and the barriers that discourage participation. Similarly, this thesis suggests that the means to community participation consist of factors that both stimulate and hinder engagement. The interaction between these motivating factors and limitations shapes the trajectory of community participation, as reflected in the levels of participation.



**Figure 10.4. “Means” and “Ends” to Community Participation**

While the three dimensions of the MOA model encourage participation, barriers (practical, structural and cultural), such as those identified by Tosun (2000), can impede progress. The relationship between the means and ends of community participation, as conceptualised by Hung et al. (2011), appears static, implying that providing certain conditions will directly lead to specific types of participation (Tosun, 1999). However, the findings of this research demonstrate that community participation is more fluid and dynamic than that. For example, the interviews with stakeholders associated with Indonesian DMSs revealed that while destination websites are accessible for local businesses, allowing the businesses to engage in the tourism system, further initiatives are required to fully integrate these businesses into the system. When a business can fully promote itself on the DMS, then its capacity to benefit from the DMS is increased. Additionally, intrinsic motivation, another critical factor in encouraging community participation, can evolve in response to changes in social conditions (Benedjma & Mahmoud, 2021). While Hung et al.'s (2011) "means to ends" model, which applies the MOA model, has been widely used by scholars (Jepson et al., 2014; Le et al., 2022; Rasoolimanesh et al., 2017a; Sakitri, 2018) to analyse community participation, this thesis proposes an alternative framework. This framework is designed to nurture community engagement more effectively, aiming to realise the ideal of spontaneous community participation, as proposed by Tosun (1999). In practical terms, the framework provides DMOs with a structured approach to adopting a more active role in managing sustainable tourism development, with a particular focus on promoting meaningful community involvement.

# Chapter 11. Conclusion and Future Research

## Agenda

This chapter addresses the main research question: “How can the DMS support the implementation of community participation in tourism development in Indonesia?” It begins by summarising key findings and discussions throughout this thesis. Additionally, this chapter outlines the contributions of this research to academic literature and practical destination management. The chapter then reflects on the study's limitations and concludes by offering recommendations for future research directions.

### 11.1. Summary of Key Findings

The research findings reveal that DMSs do indeed have the capability and potential to stimulate community participation in tourism development. The primary assertion of this thesis is that challenges associated with the implementation of community participation can be addressed particularly in developing countries through DMS functions that are specifically designed to integrate pull factors, or the external motivations that influence individuals' decisions to engage in tourism. In its capacity to offer pull factors, the DMS can support community participation not only by enhancing access to tourism benefits, which serve as motivational factors, but also by mediating engagement and improving community capacity for effective participation. These pull factors, enabled by the DMS functions, are framed by the MOA (Motivation, Opportunity, and Ability) framework, which aims to provide the necessary "means" for community participation.

The analysis of the findings shows that some DMSs have adopted functions that can contribute to creating a “means” for the community to participate in tourism development. Specifically, the DMS can influence community motivation to participate in tourism by outlining the benefits of doing so. This can be achieved by adopting functions that enable the community to gain economic advantages, provide information on potential tourism benefits, and receive recognition from destination authorities. DMS functions have the capability to enable extrinsic and intrinsic motivation for community participation particularly in improving community access to economic benefits and stimulating place attachment through social recognition. Thus, DMS enabled motivation dimensions should focus on establishing a value proposition for the community, which will subsequently serve as motivational factors encouraging active participation in tourism.

The research also found that some DMSs have functions that offer an opportunity for the community to participate in tourism development. This is achieved by establishing a platform that enables community involvement in the creation of DMS content, by facilitating communication between host communities and the DMO, by disseminating

information regarding tourism programs to the community, and by offering communication tools that promote engagement between the destination community and prospective tourists. The adoption of these DMS functions can establish interactive communication channels for all tourism actors and facilitate the co-production process in creating tourism value. Thus, the opportunity dimension enabled by DMS functions refers to the mediation of community participation.

Likewise, some DMSs possess functions that can potentially improve the destination community's ability to engage in tourism development and access its benefits by helping to improve community awareness of local tourism development, capacity building of the local community, and certification of local tourism products. The aim of these functions is to provide resources that enable community members to effectively participate in tourism through capacity building initiatives. Capacity building is achieved by supplying resources to enhance community skills and knowledge, thereby enabling effective participation in tourism and sharing the benefits of tourism. Additionally, certification function aims to improve the competitiveness of tourism businesses through recognition from the tourism industry; this is especially advantageous for informal enterprises. Thus, the DMS functions associated with the ability dimension seek to enhance community capability and capacity to participate in and gain value from tourism.

Findings from the DMS evaluations in both Indonesia and globally reveal functions with the potential to support community participation within destinations. However, many of these functions have primarily been adopted for commercial purposes, reflecting the traditional role of the DMS as a marketing platform. In contrast, this study positions internal marketing and collaborative production as frameworks to guide the effective adoption of DMS functions to facilitate community participation. Internal marketing posits that empowering supply side stakeholders enhances service delivery and overall satisfaction for both supply and demand. In the context of destination management, the notion of internal marketing is adapted and adopted in this study to emphasise the importance of delivering a value proposition for tourism to the local community, which includes tourism enterprises, informal businesses, and residents. This approach aims to motivate these stakeholders to engage in the co-creation of destination value, benefitting all actors in the tourism system and ultimately fostering both tourist satisfaction and the well-being of the community.

As a result of internal marketing, supply-side actors are encouraged to engage in the co-production of tourism value propositions that enhance the experiential value for visitors. Concurrently, the community gains value from its involvement, as active participation offers a channel for community members to express their life aspirations, such as through writing blogs or sharing their cultural traditions. The adoption of internal marketing and

co-production frameworks in the DMS platform require interactivity between tourism actors through the network system. Conceptually, DMS would therefore ideally be equipped with information, communication, relationship, transaction and technological functionalities. However, aligned with extant literature, this study found that the application of DMS interactive functionalities specifically communication, relationship and transactional, remains limited, especially in providing synchronised or real-time interactivity.

Predominantly, DMS including those in Indonesia regional destinations, rely on information provision functionalities, which provide one-way information flows. Thus, most DMS adoption continues to be characterised by a traditional marketing-focused approach, which places minimal emphasis on other aspects of its role, such as facilitating community participation. Consequently, to address the first objective of this research: “To investigate how DMSs around the world facilitate community engagement with tourism”, this study concludes that despite the indication of DMS capability to support community participation, DMS adoption has not yet focused on realising its potential to support strategic destination management of sustainable tourism in terms of the implementation of community participation. DMS functions have the capability to enable the MOA framework, the “means” for community participation, and eventually offer pull factors that encourage community to engage in tourism. DMS capability to support community participation could be realised subject to its strategic adoption such as the application of the internal marketing and collaborative production framework; and optimisation of DMS interactive functionalities.

This research found that several regional DMSs in Indonesia possess some of the functions that are capable of supporting community participation particularly those that can extending tourism benefits and raising awareness of local tourism initiatives. However, the examples of tourism websites for Wakatobi and Banyuwangi demonstrate that these functions have not yet been adopted to prioritise approaches that facilitate and encourage community participation. Interviews with both DMS operators reveal that both DMSs were developed to support the marketing effort of the destination, highlighting the tourism products offered in the region to foster a tourism destination image. Additionally, the evaluation of destination websites of five regional destination websites in Indonesia indicates limited application of interactive functionalities particularly those that that enable co-production. Combined with the findings from the evaluation of regional DMSs in Indonesia, it can therefore be concluded that the application of DMSs in the country continues to rely on traditional marketing strategies that prioritise consumer-centric approaches.

These findings highlight important insights into the opportunities for future DMS development unique to the Indonesian context. The research indicates that the current state and goals of DMS development in Indonesia remain in the early stages. Moreover, an analysis of regional DMSs shows that Indonesian DMSs have not yet adopted the ideal knowledge-based ICT platform model advocated by experts and instead often reflect earlier, marketing-focused structures. In comparison, DMS designs and implementations in other countries, including developing nations, show minimal differences from those in Indonesia. Given Indonesia's unique geographical, socio-cultural, and political landscape, DMS development in Indonesia must adopt a tailored approach to address challenges and opportunities arising from these local characteristics, particularly one that is related to sustainable tourism development.

The study's second objective focused specifically on the strategic implementation of DMSs in Indonesia's regional destinations, particularly in relation to strengthening community involvement in tourism development. This research found that the regional DMSs, exemplified by the Wakatobi and Banyuwangi destination websites, are not designed or utilised to their full potential for supporting community participation. Instead, both DMSs primarily function as marketing platforms for promoting the destination. These findings are supported by insights from Indonesian regional destination websites, which reveal the unsustainable nature of DMS operations, reflecting an outdated model characterised by static content. The top-down governance structure of these DMSs, coupled with the limited use of interactive features, significantly hinders their capacity to engage and involve the community effectively. As a result, there is a clear indication that DMS adoption in Indonesia tends to marginalise the local destination community. The current state of regional website adoption in Indonesia is illustrated in Figure 10.1.

The study reveals that the development of destination websites in Indonesia is significantly hindered by the country's socio-political context. Interviews with stakeholders from Wakatobi and Banyuwangi indicate that the centralised government structure, extending to regional governance, has resulted in a top-down approach to destination management, including the development and operation of DMSs. Delphi panel experts highlighted that short political cycles disrupt long-term projects and funding, such as DMS development. Additionally, rigid bureaucracy and political intervention, particularly in the appointment of Destination Management Organisation (DMO) personnel, pose challenges to building the capacity of DMS developers and operators. These findings illustrate structural challenges that inform the development of a community-focused DMS framework for Indonesia.

This study's third research objective was to develop a community-focused DMS framework for Indonesia. DMS stakeholders and experts from the Delphi panel

advocated for a more collaborative approach to future DMS development, one that engages a broad range of actors at the destination, either as users or co-creators of DMS content. This bottom-up, collaborative approach could address ongoing challenges, including restricted platform accessibility and unsustainable management practices, which frequently stem from the prevailing top-down governance model and the socio-political realities in Indonesia, especially considering the five-year governmental cycle. By redistributing operational responsibilities and incorporating the destination community into DMS management, the system could leverage local knowledge, enhancing its relevance and effectiveness in addressing tourism development issues. Accordingly, this thesis argues for a shift in DMS operations and proposes a framework for a community-focused DMS for Indonesia. The recommended framework for DMS adoption in Indonesia, the community-focused DMS, is presented in Figure 10.3.

In the proposed community-focused DMS framework, the DMS is introduced as a knowledge-based ICT platform. The knowledge-based ICT platform represents a new perspective for the DMS to define what is meant by reference to the “destination”. In the knowledge-based ICT platform, the destination is seen as an ecosystem resembling a complex network of tourism actors constantly interacting to create destination value. The destination ecosystem in the knowledge-based ICT concept adopts the S-D logic perspective to the destination. In the proposed community-focused DMS framework, the DMS is considered the catalyst for destination value co-creation. The framework emphasises several criteria: the involvement of both the commercial and social actors of the tourism destination in DMS management and operation, a non-digital interaction between each actor associated with resource sharing to create innovation in tourism offerings, and DMS capability to share information among destination actors.

As the principal management body of the DMS, the DMO’s role is to design the DMS according to its strategic role in destination management, particularly in responding to local issues. The information exchange between the DMS and the local community including, residents, local tourism and informal businesses, adopts the concept of internal marketing. On the other hand, information sharing, between the DMS and potential tourists, focuses on interactive communication that catalyses the creation of destination value underpinned by the collaborative marketing concept. For the DMS to be a catalyst in destination value cocreation, it must optimise all its interactive (communication, relationship and transaction) functionalities.

Internal marketing is a significant concept in the proposed community-focused DMS framework for Indonesia. The notion of internal marketing represents a strategy that underscores the interconnections between DMS and host community - comprising residents and tourism businesses including the informal enterprises - which emphasises

the need for reciprocity in providing value. The internal marketing concept provides an underlying framework to the delivery of a tourism value proposition guided by the MOA framework. On the flip side, MOA provides a framework that guides the value offerings to the tourism actors that was previously absent in the adaptation and adoption of the concept of internal marketing in destination management.

Another key aspect of the implementation of internal marketing as outlined in the proposed community-focused Destination Management System (DMS) is its ability to cultivate a governance community. This offers a practical framework that complements the centralised nature of tourism governance in Indonesia, effectively addressing the socio-political challenges associated with the development of the DMS in the country.

In summary, the DMS must adopt a more collaborative approach to support the implementation of community participation in tourism development in Indonesia, recognising the destination community as an essential component of the tourism ecosystem engaged in the co-creation of destination value. Although DMSs, including those in Indonesia, possess features that could encourage community participation, these functions have generally not been strategically employed to foster such involvement. The community-focused DMS framework proposed in this thesis offers an alternative approach, integrating community elements into DMS operations and advocating for a collaborative model of DMS adoption tailored to the Indonesian context.

## **11.2. Implications of the Research**

The findings of this research hold substantial academic and practical implications. These implications are categorised into three areas: theoretical contributions, methodological implications, and practical recommendations.

### **11.2.1. Theoretical Contribution**

Academically, this study contributes to the broader discourse on the application of DMS in Indonesia, with empirical evidence, including findings from this Delphi study, suggesting that it remains underdeveloped. Specifically, the thesis adds to the discussion on how Indonesian regional DMSs can support the implementation of community participation. It highlights that, with advancements in ICT, DMS now possesses both the capability and capacity to facilitate community involvement in tourism development. However, the lack of strategic design to harness this potential has limited their effectiveness in promoting sustainable tourism practices. This research suggests that adopting an internal marketing framework targeting supply-side stakeholders in destination management, including local communities and tourism businesses, can enhance DMS adoption strategies and unlock the system's potential to encourage community participation.

The internal marketing approach aligns well with the network ecosystem perspective of destination management, where all tourism actors, including both supply and demand stakeholders, are co-creators and beneficiaries of destination value. The internal marketing framework is not known adopted by ICT platform particularly DMS. This research reveals that the internal marketing framework is applicable to DMS operations, as the findings suggest that the system has the capacity to facilitate tourism value creation for local communities through its functions. Therefore, internal marketing offers a novel conceptual approach to understanding and enhancing DMS practices. Applying an internal marketing framework to DMS adoption would help integrate the community within this network. However, since internal marketing was not originally developed for destination management, adaptation is necessary. Specifically, there is a gap in understanding how to tailor internal marketing to provide value to internal tourism stakeholders, which include social actors. To address this, the thesis proposes that the MOA framework can be applied to deliver tourism value to internal stakeholders through DMS functions that facilitate and encompass Motivation, Opportunity, and Ability (MOA) factors, thereby fostering their active participation in tourism development.

This research proposes a community-focused DMS framework for Indonesia, offering an alternative approach to DMS adoption that emphasises meeting community needs. One key contribution is the framework itself, illustrated in Figure 10.3. Although the collaborative structure of the framework is specifically adapted to Indonesia's unique context, it demonstrates how DMS adoption in any part of the world can be designed to meet tailored goals. In particular, the framework highlights the application of an internal marketing strategy to motivate community involvement in co-production, thereby fostering a governance community. This approach emphasises how a DMS can be strategically adopted to enhance sustainable tourism practices including community participation, which is a core focus of this research.

Theoretically, this research offers an alternative way of utilising the means and ends of the community participation model. In their introduction of the model, Hung et al. (2011) used the concept of means and ends to holistically examine the process of community participation at different levels. Following its introduction, the means and ends model was mainly used as an analytic framework to examine the level of community participation and the factors fostering it (Jepson et al., 2013; 2014; Rasoolimanesh et al., 2017a; Sakitri, 2018). This thesis proposes to position the means and ends as a prescription to foster community participation. From this perspective, the ends of community participation are presumed to be dynamic, and the participation level can progress depending on the means for community participation. While the MOA model is used to describe the means of community participation, this thesis considers that there are some factors that hinder the community participation process. Thus, the means for

community participation that this thesis proposes are the motivating (pull) factors in the MOA model (Hung et al., 2011) and the discouraging factors are the limitations to community participation proposed by Tosun (2000). The availability of the means factors for the community will determine the level of community participation in the destination. The proposed refined framework of mean and ends to community participation is illustrated in Figure 10.4.

The community-focused DMS framework proposed in this thesis provides an alternative way to conceptualise the DMS specifically within the Indonesian context. Within the proposed framework, the DMS is defined using the new terminology, as a knowledge-based ICT platform, instead of the web-based ICT platform used in extant literature. The new definition suggests that the DMS concept adopts the ecosystem view of a tourism destination, which is underpinned by the S-D logic framework. The proposed framework also builds on the smart tourism destination concept (Boes et al., 2016). Thus, the framework offers an alternative concept of the DMS, one that is applicable in a smart tourism framework. Using the knowledge-based ICT platform concept, the DMS has a crucial role in facilitating the collaboration of tourism actors. This underscores the importance of each actor's role in destination management and marketing.

### **11.2.2. Contributions to broader research methodology**

This research also makes a methodological contribution, particularly in the application of content analysis (CA) for website evaluation. Conventional website evaluations have often adopted a deductive, quantitative CA method, focusing on pre-established themes derived from prior research. In contrast, this research employs an inductive approach to CA. By using the MOA framework to interrogate qualitative data from the website, the study identifies categories and themes relevant to this framework. This inductive approach characterises a qualitative form of CA, which proves beneficial for addressing novel research questions and challenges in website evaluation.

This research demonstrates a recruitment and engagement strategy within the Delphi approach that minimises participant attrition over three rounds. Attrition is a common challenge in Delphi studies due to the extended time commitment often required from participants. To address this, the research maintained consistent communication with the experts, particularly about the study's progress and upcoming data collection schedules. This communication was primarily conducted via email, where formal invitations were sent, alongside alternative platforms like LinkedIn and WhatsApp to enhance accessibility. This multi-platform engagement approach contributed to maintaining a high retention rate, with at least 90% of participants completing each round. This highlights the effectiveness of consistent, informal communication in building trust and maintaining participant engagement, particularly in long-term research projects like Delphi studies.

### **11.2.3. Practical implications for Indonesia**

This research suggests that Indonesian tourism authorities should adopt the DMO concept, specifically one that incorporates an ecosystem perspective of destination management. Currently, many Indonesian tourism authorities, predominantly government entities, focus primarily on supply-side management, often neglecting the roles of social actors and demand in destination management. This results in governance frameworks that are largely top-down. By embracing an ecosystem perspective, tourism authorities can gain a more comprehensive understanding of destinations. The idea that tourism authorities recognise the DMO's role within an ecosystem framework can foster more collaborative governance and facilitate value co-creation among stakeholders. This approach encourages a fairer distribution of benefits across tourism stakeholders, contributing to the overall wellbeing of the tourism system. Ultimately, this shift could bring Indonesian tourism management closer to achieving sustainable tourism principles by promoting more inclusive and balanced stakeholder involvement.

In relation to ICT adoption in destination management, such as DMS, destination authorities should place greater emphasis on the strategic functions of these platforms, rather than focusing solely on their marketing value, as is currently practiced. This research underscores the importance of ICT adoption in addressing the specific needs of the destination. Therefore, the development and implementation of ICT platforms in tourism management should cater to the needs of both local communities and tourists. Involving the community in the development and operation of these platforms is crucial to ensuring that local knowledge is embedded within the ICT systems. This approach will ensure that the ICT platform provides value for all tourism actors and contributes to more strategic destination management.

The findings of this research highlight DMS functions with the potential to promote community involvement in tourism. While some of these functions appear in regional DMSs within Indonesia, the research argues that they have not been fully leveraged to foster meaningful community engagement. This research offers valuable insights to guide DMOs and DMS developers in Indonesia on ways to optimise DMS capabilities for more effective strategic destination management, with a specific focus on enhancing community participation. The research further discusses how certain DMS functions, grounded in internal marketing strategies, can be applied to maximise their impact in facilitating community involvement and co-creation.

The proposed community-focused DMS framework provides an alternative approach for tourism authorities in adopting the DMS. The community-focused DMS framework offers DMOs and destination managers an avenue to develop a collaborative model of DMS management and operation which focus on providing value for both communities and

tourists. The framework can be used as a guidance in developing a DMS that is both relevant to the destination context and can resolve tourism development issues in the destination using local knowledge through a collaborative approach.

### **11.3. Limitations and Future Research**

This thesis concedes a few limitations in the research process. The rapid and ongoing evolution of ICT and website content presents challenges in data collection, particularly when evaluating destination management system (DMS) websites. While some websites maintain relatively static content, others frequently update their features and information, leading to inconsistency in the data collected over time. As a result, some of the information analysed and discussed in this thesis may no longer reflect the current state of the websites. To mitigate this, data collection was carefully timed, with notes documenting the date and details of the website content at the time of analysis. Any corrections to the data were made prior to the analysis phase to ensure consistency. This approach helps prevent discrepancies in the data analysis process, ensuring that the research is based on the most accurate and up-to-date information available at the time of data collection.

Additionally, the online data collection limited the researcher's perspective on the context of the study area. Not being able to visit the two case study sites restricted the use of purposive sampling in the selection of potential interviewees, as purposive sampling requires robust background information on the participants, and it also limited the researcher's ability to follow up relevant information and sources provided during the interviews. Furthermore, a lack of information on the study case context can limit researcher interpretation, particularly when executing qualitative analysis. While the main subject of this research is an ICT platform, which can be accessed remotely, extra information on how the DMS is operated daily would have provided better insight for the analysis. Despite these limitations, the research design was still valuable in exploring how a DMS can support community participation in the destination, considering the difficult (and extraordinary) circumstances brought about by the COVID-19 pandemic under which this research is conducted.

The findings of this research pave the way for future investigations. This study has identified several DMS functions that exemplify best practices in accommodating community needs. For instance, the Destination Ann Arbor website includes features for advertising tourism-related job opportunities and posting social media content that promotes the destination. Similarly, the Bundaberg Region website allows community members to write and post promotional blogs, while the Kyoto City Official Travel Guide provides information about local members and groups, thereby tacitly acknowledging the value of community contributions to the destination. Exploring these websites and their

functions from the perspective of the destination community under the internal marketing framework would offer valuable insights into the impact of these DMS functions on community participation.

This thesis proposes a community-focused DMS framework specifically for Indonesian DMS. Future research could further develop this framework through action research that incorporates the views of a destination community which encompasses residents, tourism businesses and informal enterprises. Such an approach would provide significant insights into the proposed framework, particularly regarding its impact on community participation and how it addresses barriers to participation. Additionally, the proposed concept of means and ends in community participation merits further exploration. Investigating both the encouraging (pull) and discouraging factors as means to participation would enrich academic discourse related to the concept and practices of community engagement in tourism development. From a practical standpoint, a deeper understanding of these means' factors could assist DMOs and tourism policymakers to understand the value proposition process that can enhance community participation, ultimately leading to improved community well-being within the destination.

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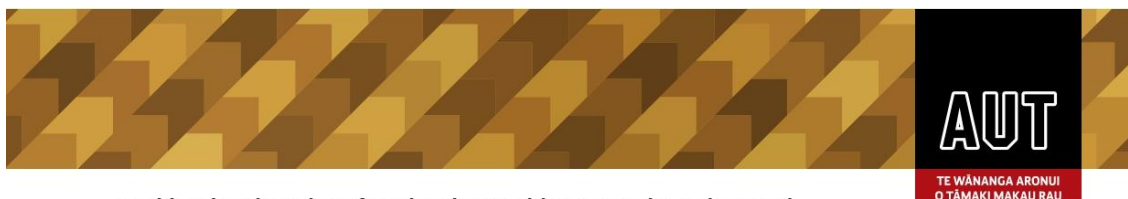
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# Appendices

## Appendix 1: Main Ethics Approval



### Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology  
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E: [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)  
[www.aut.ac.nz/researchethics](http://www.aut.ac.nz/researchethics)

30 June 2021

Simon Milne  
Faculty of Culture and Society

Dear Simon

Re Ethics Application: **21/189 Destination Management System and Community Participation: Indonesia Case**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 30 June 2024.

#### Standard Conditions of Approval

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

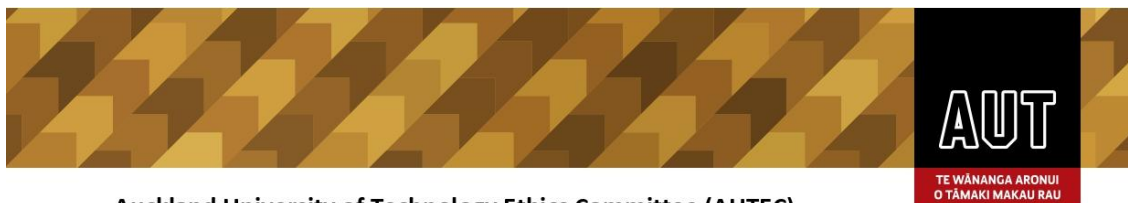
For any enquiries please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz). The forms mentioned above are available online through <http://www.aut.ac.nz/research/researchethics>

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat  
Auckland University of Technology Ethics Committee

Cc: [dhafan.akbar@aut.ac.nz](mailto:dhafan.akbar@aut.ac.nz); Carolyn Deuchar

## Appendix 2: Face to Face Interview



### Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology  
D-88, Private Bag 92006, Auckland 1142, NZ  
T: +64 9 921 9999 ext. 8316  
E: [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)  
[www.aut.ac.nz/researchethics](http://www.aut.ac.nz/researchethics)

21 June 2022

Simon Milne  
Faculty of Culture and Society

Dear Simon

Re: Ethics Application: **21/189 Destination Management System and Community Participation: Indonesia Case**

Thank you for your request for approval of amendments to your ethics application.

The amendment to the data collection protocol (now face to face interviews) has been approved

#### Non-Standard Conditions of Approval

1. Insert in the Information Sheet that confidentiality will be limited if the interviews take place in the work place.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

#### Standard Conditions of Approval.

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted. When the research is undertaken outside New Zealand, you need to meet all ethical, legal, and locality obligations or requirements for those jurisdictions.

Please quote the application number and title on all future correspondence related to this project.

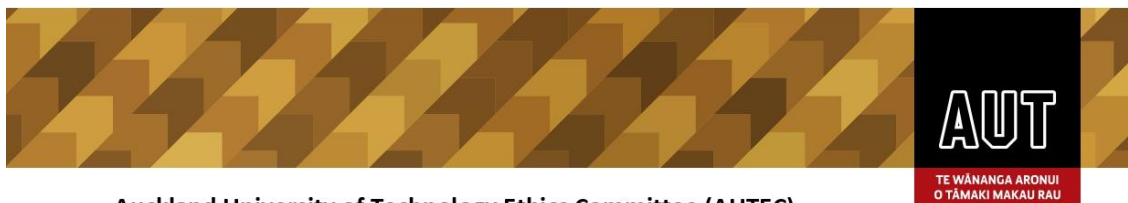
For any enquiries please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz). The forms mentioned above are available online through <http://www.aut.ac.nz/research/researchethics>

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat  
Auckland University of Technology Ethics Committee

Cc: [dhaifan.akbar@aut.ac.nz](mailto:dhaifan.akbar@aut.ac.nz); Carolyn Deuchar

## Appendix 3: Delphi Round 2 Ethic Approval



### Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology  
D-88, Private Bag 92006, Auckland 1142, NZ  
T: +64 9 921 9999 ext. 8316  
E: [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)  
[www.aut.ac.nz/researchethics](http://www.aut.ac.nz/researchethics)

18 November 2022

Simon Milne  
Faculty of Culture and Society

Dear Simon

Re: Ethics Application: **21/189 Destination Management System and Community Participation: Indonesia Case**

Thank you for your request for approval of amendments to your ethics application.

The questions and translations for next (2nd) round of Delphi study has been approved.

#### Standard Conditions of Approval.

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted. When the research is undertaken outside New Zealand, you need to meet all ethical, legal, and locality obligations or requirements for those jurisdictions.

Please quote the application number and title on all future correspondence related to this project.

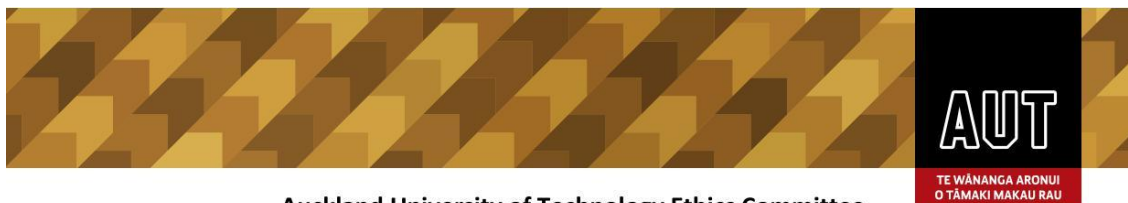
For any enquiries please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz). The forms mentioned above are available online through <http://www.aut.ac.nz/research/researchethics>

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat  
**Auckland University of Technology Ethics Committee**

Cc: [dhaifan.akbar@aut.ac.nz](mailto:dhaifan.akbar@aut.ac.nz); Carolyn Deuchar

## Appendix 4: Delphi Round 3 Ethics Approval



### Auckland University of Technology Ethics Committee (AUTEC)

2 March 2023

Carolyn Deuchar  
Faculty of Culture and Society

Dear Carolyn

Re: Ethics Application: **21/189 Destination Management System and Community Participation: Indonesia Case**

Thank you for your request for approval of amendments to your ethics application.

Round 3 of the Delphi study has been approved.

The change of primary supervisor and enrolment to the School of Hospitality & Tourism has been noted.

#### Standard Conditions of Approval

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online <http://www.aut.ac.nz/research/researchethics>

For any enquiries, please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat  
**Auckland University of Technology Ethics Committee**

Cc: [dhaifan.akbar@aut.ac.nz](mailto:dhaifan.akbar@aut.ac.nz)

## Appendix 5: Example of the Note of Web Evaluation

Name of Website

<https://kyoto.travel/en/index.html>

Managing organisation

Kyoto City Tourism Association (DMO)

Information Dimension

Most of the information of this website is presented in the form of blog, short story mostly presented by the Kyoto tourism online community in Japan, consists of social media and blog group or online magazine.

There are 5 main tabs in the homepage of the website which classify the information themes of the website

"see & do" provides stories which are curated from online sources about tourism activities and attractions in Kyoto classify by interests.

"eat & drink" consists compiled blog about various eatery in Kyoto, including famous matcha tea and beer and sake.

"street" provides stories about famous or notable streets or neighbourhood in Kyoto. The stories are presented from local guide perspective which is also members of local residents perspective.

"people" provides information about people / residents of Kyoto which have a big contribution to conserve local culture and shape up new culture of Kyoto.

"insider blog" provides tips and tricks to visit Kyoto.

"local-info" consists of two main information, which are practical information and tourism destinations.

practical information provides essential services and local etiquette around Kyoto, including local wisdom which applicable in daily life.

Local destinations, provides information about local tourism attraction based on different category.

Communication Dimension

Not Applicable

Transaction Dimension

not applicable

Relationship Dimension

Link to corporate website, which provides information about training to local tourism business, tourism insight through research, strategies and future projects, news, etc.

## Appendix 6: Example of NVivo Facilitated the Categorisation and Decontextualisation Phase

The screenshot displays the NVivo 12 Plus interface. The top ribbon includes 'File', 'Home', 'Import', 'Create', 'Explore', and 'Share'. The 'Document Tools' ribbon is active, showing various analysis tools. The left pane shows a list of project files under 'Files', with columns for Name, Codes, and References. The main workspace shows a document titled 'Tourism Web Ann Arbor, USA' with highlighted text and a 'Code At' field at the bottom.

Name	Codes	References
Tourism Web Ann Arbor, USA	20	32
Tourism Web Azores, Spain	18	24
Tourism Web Bonaire, Netherland	25	48
Tourism Web Campbell River, Canada	21	35
Tourism Web Com Island, Nicaragua	13	23
Tourism Web Destination BC, Canada	23	32
Tourism Web Easter Island, Chile	14	22
Tourism Web Fernie, Canada	23	47
Tourism Web Jordan	22	29
Tourism Web Koh Yao, Thailand	11	19
Tourism Web Nara, Japan	19	50
Tourism Web Palau	25	48
Tourism Web Puglia, Italy	14	25
Tourism Web Sahara, Marocco.	14	17
Tourism Web The Catlins, NZ	21	35
Tourism Web Toronto, Canada	15	45
Tourism Web Wakatobi, Indonesia	12	16
Tourism Web Yap,	19	28
Tourism Web Yogyakarta, Indonesia	13	20
Tourism Web, Atauro, Timor Leste	18	25
Tourism Web, Banyuwangi Indonesia	14	22
Tourism Web, Bermuda	15	21
Tourism Web, Bundaberg, Australia	16	23
Tourism Web, Cook Island	25	52
Tourism Web, Dubai, UAE	20	26
Tourism Web, Durham, UK	20	29
Tourism Web, El Hierro, Canary Islands.	18	28
Tourism Web, El Nido, Philippine	19	23
Tourism Web, Erfurt, Germany	19	22
Tourism Web, Glasgow, the UK	21	30
Tourism Web, Great Barrier Island, New Zealand	22	47
Tourism web, Ha Long Bay, Vietnam	16	19
Tourism Web, Hanoi, Vietnam	19	49

The main workspace shows the following text from the document 'Tourism Web Ann Arbor, USA':

Name of Website  
<https://www.annarbor.org/>

Managing organisation  
 This website is managed by Destination Ann Arbor (non-profit Organisation)

Information Dimension

There are several themes or features in the drop-down menu from the mainpage.

- "Events" provides general information about tourism related events in Ann Arbor.
- "submit your event" tab provides a feature to add tourism related events.
- "Things to do" provides information about tourism spots and various tourism attractions.
- "Restaurants" provides information about food and beverages businesses in Ann Arbor.
- "Hotels" provides promotion about accommodation services including hotels and bed and breakfasts and its deals.
- "Plan" provides visitor with essential information to visit Ann Arbor, including guide, transportation services and neighbouring community.
- "Blog" tab provides story-telling style information about tourism development and activities in Ann Arbor. story is produced by Destination Ann Arbor and its member or community members.
- "Social" tab provides pic galleries from the perspective of local community from their social media account.
- "University of Michigan" provides information around university of Michigan including its facilities and activities.

There are several additional information which can also be found in the drop down list.

- "meetings" tab promotes event organising services including services that support event.
- "Sport Comission" tab promotes services to organise and host sport events and its supporting businesses.
- "About" tab provides information about Ann Arbor Destination tourism development principle and strategies.
- "Store" tab is link to connect to sovereign onlineshop of Ann Arbor Destination.
- "Workforce Development" tab is the information for local tourism workforce, including job list and opportunities for individual who wants to have a career in tourism industry.
- "Neighbouring Communities" tab is the information about neighbouring area within Michigan Region.
- "Media" tab provides PR related information for media who wants to produce Ann Arbor news.
- "Contact" tab provides contact details and adress of Ann Arbor Destination (organisation)
- "Blog" tab provides story-telling style information about tourism development and activities in Ann Arbor. story is produced by Destination Ann Arbor and its member or community members.
- "Sitemap" is tab to open the sitemap.
- "copyright" tab provides information about privacy policy of the website for the user
- "Destination Ann Arbor partner" is a portal for Ann Arbor member/partner to acces personalised information.

These information is also visualised on the main page; particularly information from vital information tab.

Communication Dimension

Code At: Enter node name (CTRL+Q)

MDA 52 Items Codes: 20 References: 32 Read-Only Line: 1 Column: 0 120%

## Appendix 7: Example of Themes and Categories of Content Analysis in NVivo

Web Evaluation (DMS) PhD.mvp - NVivo 12 Plus

File Home Import Create Explore Share

Paste Copy Merge Clipboard Properties Open Memo Link Add To Set Create As Code Create As Cases Query Visualize Code Auto Code Range Code Uncode Case Classification File Classification Detail View Sort By Undock Navigation View List View Find

Quick Access: Files, Memos, Nodes

Data: Files, File Classifications, Externals

Codes: Nodes, Sentiment, Relationships, Relationship Types

Cases: Cases, Case Classifications

Notes, Search, Maps, Output

Nodes

Name	Files	References	Created On	Created By	Modified On	Modified By
Press services		1	27/09/2021 11:23	MDA	27/09/2021 11:23	MDA
Managing Organisation Membership Benefit		33	27/09/2021 13:17	MDA	19/11/2021 10:35	MDA
Special page for local tourism stakeholders		1	21/10/2021 09:08	MDA	21/10/2021 09:08	MDA
Motivation		52	18/11/2021 11:38	MDA	18/11/2021 12:54	MDA
Recognition		33	19/11/2021 08:26	MDA	19/11/2021 08:32	MDA
Economic Benefit		51	19/11/2021 08:49	MDA	19/11/2021 09:00	MDA
Information of Tourism Benefit		6	19/11/2021 08:53	MDA	19/11/2021 09:01	MDA
Opportunity		38	18/11/2021 11:38	MDA	18/11/2021 12:54	MDA
Communication Tools to Managing Organisation of the Website		16	19/11/2021 09:14	MDA	19/11/2021 09:15	MDA
Communication Tools Between Community and Tourist		3	19/11/2021 09:24	MDA	19/11/2021 09:34	MDA
Participate in Tourism Activities through Events		9	19/11/2021 09:34	MDA	19/11/2021 10:33	MDA
Adding Information in the Website		21	19/11/2021 09:54	MDA	19/11/2021 09:58	MDA
Ability		30	18/11/2021 11:38	MDA	28/01/2022 10:11	MDA
Increase Community Awareness of Tourism Development		29	19/11/2021 10:02	MDA	28/01/2022 10:11	MDA
Capacity Building		6	19/11/2021 10:06	MDA	28/01/2022 10:11	MDA
Certification		3	19/11/2021 10:12	MDA	28/01/2022 10:11	MDA
This website is managed by group of locals from the Bay		0	20/12/2023 18:25	MDA	20/12/2023 18:26	MDA

MDA 71 Items

## Appendix 8: DMS Stakeholders Interviews Information Sheet



### **Lembar Informasi Wawancara untuk Pemangku Lepentingan DMS**

Lembar informasi ini ditujukan untuk peserta wawancara (Pemangku Kepentingan DMS).

#### **Tanggal Lembar informasi ini disiapkan:**

7 June 2022

#### **Judul Penelitian:**

“Destination Management System (DMS) and Community Participation in Tourism: Indonesia Case”

“*Destination Management System (DMS) dan partisipasi masyarakat dalam pariwisata: studi kasus Indonesia*”

#### **Undangan untuk berpartisipasi dalam penelitian**

Dengan hormat, perkenalkan nama saya Muhammad Dhaifan Akbar. Saat ini saya sedang menjalani program doktorat dengan *New Zealand Tourism Institute (NZTRI)* di *Auckland University of Technology (AUT)*. Penelitian ini merupakan bagian dari disertasi yang menjadi persyaratan kelulusan pada program doktorat. Dalam hal ini, saya mengundang anda untuk berpartisipasi dalam penelitian ini dengan ikut membagi ide dan pandangan terkait dengan pengembangan *website* daerah tujuan wisata atau DMS di destinasi anda. Sebagai pemangku kepentingan dari DMS yang menjadi studi kasus penelitian ini, anda diharapkan dapat memberikan informasi untuk memahami fungsi strategis dari pembuatan DMS dan fungsinya dalam mendukung proses partisipasi masyarakat dalam pengembangan pariwisata. Pandangan anda dapat mendukung perumusan model alternatif bagi DMS yang menjadi hasil dari penelitian ini.

#### **Apakah Tujuan Penelitian ini?**

Penelitian ini bertujuan untuk memahami bagaimana DMS dapat mempengaruhi partisipasi masyarakat dalam pengembangan pariwisata di Indonesia. Untuk mencapai tujuan tersebut, penelitian ini akan menyelesaikan 3 objektif yaitu:

- Menginvestigasi bagaimana DMS di berbagai wilayah di dunia mengakomodasi partisipasi masyarakat dalam pariwisata;
- Mengevaluasi dan menginvestigasi implementasi DMS di berbagai wilayah di Indonesia dalam meningkatkan partisipasi masyarakat dalam pengembangan pariwisata;
- Mengembangkan model “community-focused DMS”.

Temuan dalam penelitian ini akan digunakan dalam publikasi dan presentasi.

#### **Bagaimana saya sebagai peserta dipilih dan bagaimana sayakn diundang dalam penelitian ini?**

Porsi dari penelitian ini ditujukan untuk mengumpulkan informasi mengenai alasan strategis dari pembuatan dan pengembangan DMS yang menjadi studi kasus. Bila anda menerima undangan ini anda dianggap memenuhi kriteria untuk terlibat dalam penelitian ini. Kandidat peserta dalam penelitian ini adalah pengelola DMS, pengembang DMS dan otorita destinasi pariwisata.



### **Bagaimana cara saya menerima undangan sebagai peserta penelitian?**

Bila anda memutuskan untuk ikut berpartisipasi anda dapat mengontak saya melalui kontak peneliti yang tercantum didalam lembar informasi ini dan menyampaikan keinginan anda untuk berpartisipasi dalam penelitian ini. Bila anda memiliki pertanyaan terkait penelitian ini, anda dapat mencantulkannya dalam komunikasi anda dengan peneliti agar dapat ditindak lanjuti. Sebelum putaran penelitian ini dilakasanakzn anda akan diminta mengisi lembar persetujuan untu menjadi peserta penelitian yang dikirim bersama dengan undnagan ini.

Keputusan anda untuk tidak atau ikut serta dalam penlitian ini tidak akan menguntungkan atau merugikan anda. Anda dapat mengundurkan diri dari proses penelitian ini kapan pun. Bila anda memutuskan untuk mengundurkan diri dari penelitian ini anda akan diberikan pilihan untuk menarik atau tidak temuan dari informasi yang anda berikan, bila temuan akhir penlitian belum dihasilkan.

### **Apa yang akan dilakukan dalam penelitian ini?**

Ketika anda memilih berpartisipasi, anda akan mengikuti proses wawancara yang akan dilakukan oleh saya sebagai peneliti. Proses wawancara diharapkan akan memakan waktu kurang lebih 45 – 60 menit. Jadwal wawancara akan didiskusikan lebih lanjut dengan anda untuk menyesuaikan dengan preferensi anda. Pertanyaan – pertanyaan dalam wawancara akan berkisar tentang alasan strategis yang melatarbelakangi pembuatan dan desain DMS serta kaitannya dengan partisipasi masyarakat. Perlu disampaikan bahwa setiap interview proses akan direkam untuk kebutuhan penelitian ini dengan seizin anda. Rekaman dari hasi wawancara dengan anda hanya akan digunakan untuk kebutuhan penelitian ini. Wawancara ini akan dilakukan secara tatap muka baik langsung ataupun melalui daring.

### **Apakah hal yang mungkin menyebabkan ketidaknyamanan dan resiko dari keikutsertaan dalam penelitan?**

Sabagai peneliti saya menyadari dalam era pandemic Covid-19 pertemuan tatap muka secara langsung dapat menyebabkan ketidaknyamanan bagi beberapa orang. Maka dari itu, partisipan wawancara dapat merkomendasikan alternatif lian dalam bentuk format daring untuk wawancara ini. Saya tidak melihat adanya potensi resiko bagi anda terkait dengan pertanyaan wawancara.

### **Bagaimana potensi ketidaknyamanan dan resiko dapat dihilangkan?**

Bila anda memilih untuk terlibat dalam penelitian ini anda dapat mengirmkan keperluan yang saya harus ikuti dalam proses wawancara kepada saya melalui email saya. Untuk kemudian dapat menentukan format wawancara serta waktu yang sesuai dengan preferensi anda.

Selain itu, saya juga mengingatkan bahwa pertanyaan – pertanyaan yang ada dalam wawancara ini tidak wajib untuk anda jawab. Bila anda merasa menjawab pertanyaan wawancara akan mendatangkan resiko tertentu dan menimbulkan ketidak nyamanan, anda dapat memilih untuk tidak menjawab pertanyaan tersebut.



**Apakah keuntungan yang akan saya dapatkan bila terlibat dalam penelitian ini?**

Keterlibatan anda dalam penelitian ini dapat berkontribusi terhadap pengembangan DMS di lokasi studi kasus. Hasil dari penelitian ini dapat membuka kesempatan untuk DMS agar dapat meningkatkan partisipasi masyarakat dan berkembang dari hanya sebagai media pemasaran. Selain itu, hasil penelitian ini dapat memberikan masukan kepada anda sebagai pemangku kepentingan DMS untuk mengembangkan model alternatif bagi DMS di daerah anda.

**Bagaimana *privacy* saya dapat dijaga dalam penelitian ini?**

Nama dan kontak detail anda tidak akan dicantumkan dalam temuan penelitian dan akan dijaga kerahasiaannya dalam semua bentuk publikasi penelitian ini.

**Apa yang harus saya berikan untuk berpartisipasi dalam penelitian ini?**

Proses wawancara akan menggunakan akan menggunakan 45 – 60 menit dari waktu anda. Selain itu karena setiap bentuk komunikasi dalam penelitian ini akan dilakukan secara daring, anda akan membutuhkan akses *internet*.

**Apakah saya akan mendapatkan waktu untuk mempertimbangkan undangan ini?**

Anda akan mendapatkan waktu selama 2 minggu untuk mempertimbangkan undangan ini.

**Apakah saya mendapatkan umpan balik dari hasil penelitian ini?**

Anda dapat menerima rangkuman dari temuan penelitian ini sesuai dengan permintaan anda – ketentuan ini diatur dalam lembar persetujuan.

**Apakah yang saya lakukan bila saya memiliki masalah dengan penelitian ini?**

Semua permasalahan terkait dengan proyek penelitian ini harus diberitahukan secepatnya kepada *supervisor* proyek, Prof. Simon Milne, [simon.milne@aut.ac.nz](mailto:simon.milne@aut.ac.nz)

Permasalahan terkait pelaksanaan penelitian ini harus diberitahukan sesegera mungkin kepada *Executive Secretary* of AUTEK, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), (+649) 921 9999 ext 6038.

**Siapa yang harus saya hubungi bila ingin mendapatkan informasi lebih detail tentang penelitian ini?**

Sebelumnya anda harus menyimpan lembar informasi dan formulir persetujuan sebagai referensi ke depan. anda juga dapat menghubungi tim peneliti seperti yang tercantum di bawah ini:

***Kontak peneliti:***

Muhammad Dhaifan Akbar, [Dhaifan.akbar@aut.ac.nz](mailto:Dhaifan.akbar@aut.ac.nz)

***Kontak supervisor proyek:***

Prof. Simon Milne, [simon.milne@aut.ac.nz](mailto:simon.milne@aut.ac.nz)

Lembar ini disetujui oleh Auckland University of Technology Ethics Committee pada 30 Juni 2021, AUTEK Nomor Referensi 21/18

## Appendix 9: Consent Form for DMS Stakeholders Interviews



### Form Konsen Bagi Peserta Wawancara

*Judul penelitian:* Destination Management System (DMS) and Community Participation in Tourism: Indonesia Cases

*Destination Management System (DMS) dan Partisipasi Masyarakat dalam Pariwisata: Kasus Indonesia*

*Supervisor Penelitian:* Prof. Simon Milne

*Peneliti:* Muhammad Dhaifan Akbar

- Saya telah membaca dan memahami informasi yang diberikan tentang penelitian ini dalam Lembar Informasi Penelitian tertanggal 7 Juni 2022
- Saya telah mendapatkan kesempatan untuk bertanya dan sudah mendapatkan jawaban dari pertanyaan tersebut.
- Saya menegtahui bahwa wawancara saya akan dicatat dan bahwa wawancara saya dapat direkam dan ditranskrip dengan seizin saya.
- Saya menyadari bahwa keterlibatan saya dalam penelitian ini adalah secara suka rela dan saya dapat mengundurkan diri penelitian ini dalam waktu kapanpun tanpa dapat merugikan saya.
- Saya menyadari bahwa ketika saya mengundurkan diri, saya akan diberi pilihan untuk menghapus semua data yang teridentifikasi berasal dari saya atau membiarkan data tersebut dapat digunakan. Namun ketika temuan studi sudah dihasilkan, maka penghapusan data saya sudah tidak mungkin dilakukan.
- Saya setuju untuk terlibat dalam penelitian ini.
- Saya ingin menerima rangkuman dari temuan penelitian (*klik salah satu*): Yes  No

Tanda Tangan Peserta: .....

Nama Lengkap Peserta: .....

Detail Kontak Peserta (bila diizinkan):

.....  
.....  
.....  
.....

Date:

**Disetujui oleh Auckland University of Technology Ethics Committee pada 30 Juni 2021 AUTEK Nomor Referensi 21/189**

*Catatan: Peserta harus menyimpan salah satu salinan dari formulir ini.*

## **Appendix 10: Interview Questions Draft for DMS Stakeholders Interviews**

### **Draft Pertanyaan Wawancara**

**Judul Penelitian:** *Destination Management System and Community Participation: Indonesia Case*

**Tujuan Wawancara:** *wawancara ini ditujukan untuk memahami kondisi terkini dari Destination Management System (DMS), termasuk fitur-fiturnya dan perannya dalam pengembangan pariwisata; dan juga pengaruhnya terhadap partisipasi masyarakat di destinasi pariwisata yang menjadi studi kasus. Interview ini juga akan mendiskusikan tentang pengembangan DMS dari sudut pandang pemangku kebijakan dalam DMS.*

Wawancara ini akan berjalan selama 45 menit dan 60 menit.

#### **Peran dalam pengembangan pariwisata dan DMS**

1. Bisakah anda bercerita sedikit mengenai latar belakang anda terkait dengan pengembangan pariwisata di daerah anda?
2. Menurut anda, bagaimanakah peran anda dalam pengembangan pariwisata di daerah anda?
3. Bagaimanakah peran anda dalam pengembangan DMS atau platform destinasi pariwisata di Kabupaten Banyuwangi? Saat pembuatan dan pengelolaan?

#### **DMS role and evolution**

4. Menurut anda, apakah tujuan awal dibuatnya DMS atau platform teknologi pariwisata di daerah anda?
5. Apakah fungsi peran DMS telah berubah atau bergeser dari saat di buat?
6. Apakah saat ini DMS di daerah anda sudah memenuhi fungsi dan tujuannya?
7. Bagaimanakah keberhasilan DMS ini dapat diukur?

#### **DMS dan Pengembangan Pariwisata Berkelanjutan**

8. Apakah menurut anda DMS, dapat membantu penerapan pengembangan pariwisata berkelanjutan?
9. Apakah DMS saat ini dapat membantu peningkatan partisipasi masyarakat di daerah anda?
10. Apakah ada sebuah contoh DMS yang menjadi referensi anda?

#### **Perkembangan DMS kedepan**

11. Bagaimana harapan anda terhadap pengembangan DMS di masa depan?
12. Bagaimana keberhasilan DMS di masa depan?
13. Apakah DMS memiliki potensi untuk meningkatkan partisipasi masyarakat dalam pengembangan pariwisata?
14. Apakah ada fitur-fitur yang dapat meningkatkan partisipasi masyarakat dalam pengembangan pariwisata?

## Appendix 11: Information Sheet for the Delphi Method (Round One)



Destination Management Systems (DMS) and Community Participation in Tourism: Indonesia Case

### An Invitation

Greetings, my name is Muhammad Dhaifan Akbar. I am a PhD student at the New Zealand Tourism Research Institute (NZTRI), Auckland University of Technology (AUT). I would like to invite you to participate in my research.

This PhD research is seeking to understand current Destination Management System (DMS) development and its influence on community participation in tourism development. The research will inform the development on alternative models of DMS that can incorporate community participation more effectively. Data collection for this research will include interviews, and input from a panel of experts using the Delphi Method.

Your participation on this research is to share your ideas on the future development DMS through the Delphi process. As the experts in tourism development, your input will contribute to the development of an alternative model of DMS as an expected outcome of this research.

- **What is the purpose of this research?**

This research aims to understand how the DMS influences local community participation in tourism development in Indonesia. Three objectives focus on the completion of this aim:

- To Investigate how DMS around the world facilitate community participation in tourism.
- To review and understand Indonesia Regional DMS practices related to empowering community participation in tourism development.
- To inform and develop a community-focused DMS model

The findings of this research may be used for academic publications and presentations.

- **How was I identified and why am I being invited to participate in this research?**

You are identified as a panel candidate because of your expertise in information and communication technology (ICT) in tourism or on community participation concept in tourism. You can also be selected because of your contribution for tourism development in Indonesia.



- **How do I agree to participate in this research?**

If you agree to participate you can contact me through the researcher's contact details enclosed in this sheet and express your interest to participate in this research. If you have any queries about this research process, please do not hesitate to contact me to discuss it. You will also be asked to complete a Consent Form before participating in this research. Please be advised that the consent form covers the entirety of the Delphi process which will extend over 6 months.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You can withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

- **What will happen in this research?**

Should you choose to participate in this Delphi research, your role will be as a member of a panel of experts which will discuss the DMS development and its influence on community participation in tourism development. This Delphi research will be conducted in four rounds which will involve interviews and questionnaire surveys. The first round of data collection will be conducted via an interview, which will take about 45-60 minutes. The second and third rounds will be conducted using two questionnaires that will be sent via email. It will take around 30 minutes to complete each questionnaire. The complete questionnaires will be expected to be returned within 2 weeks after distribution. The fourth and final round of the Delphi data collection process will be conducted via interview and this will take approximately 45-60 minutes. All interviews will use online communication tools. The interview schedule and communication medium will be discussed with you to fit with your preference. A detailed schedule of the data collection process will be provided in future communications prior to each round. The interviews will be recorded subject to your permission for the sole purpose of this research. The full Delphi research process will take about 5 to 6 months which will include the data collection, data analysis, and reporting of the findings.

- **What are the discomforts and risks?**

As a researcher I understand the Delphi technique runs for an extended period of time and will take a commitment from you which may sometimes be inconvenient. I also realise that remote communication might cause some discomfort, as some people are unused to this online format. I am not aware of any risk posed by questions of the interview.



- **How will these discomforts and risks be alleviated?**

To alleviate any inconvenience around your time commitment for the research, I am reminding you that your involvement in this research is specifically in the data collection process. The duration of the process itself will be quite short, which will take approximately 150 minutes over 5-6 months. The timing of inputs will be discussed with each panel member particularly for the interview schedule and your preference in terms of communication tools.

Finally, all questions in the interview or questionnaire are not compulsory for you to answer. If you feel that answering any questions may put you at risk or cause any discomfort you may choose not to answer the questions.

- **What are the benefits?**

By participating in this research, you will contribute to the discussion of the future development of ICT and its interrelationship with sustainable tourism, and more specifically to the development of an alternative model of DMS that can enhance levels of community participation in tourism development processes.

The PhD thesis that results from the work will be available in the public domain for anyone to use and learn from. The thesis also represents the major requirement of my PhD qualification.

- **How will my privacy be protected?**

Your name and details will not be stated in the findings and will remain confidential in any form of publications.

- **What are the costs of participating in this research?**

This research will take some amount of your time in during the whole Delphi processes. Moreover, since the interviews in the Delphi process will be conducted online, it will require an internet access.

- **What opportunity do I have to consider this invitation?**

You will have three weeks to consider this invitation.

- **Will I receive feedback on the results of this research?**

The final Delphi findings will be summarised and will be sent to each of the Delphi members on completion of the research.

- **What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Prof. Simon Milne, [simon.milne@aut.ac.nz](mailto:simon.milne@aut.ac.nz),

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz) , (+649) 921 9999 ext 6038.



- **Whom do I contact for further information about this research?**

Please keep this Information Sheet and a copy of the Consent Form for your future reference.

You are also able to contact the research team as follows:

***Researcher Contact Details:***

Muhammad Dhaifan Akbar, [Dhaifan.akbar@aut.ac.nz](mailto:Dhaifan.akbar@aut.ac.nz)

***Project Supervisor Contact Details:***

Prof. Simon Milne, [simon.milne@aut.ac.nz](mailto:simon.milne@aut.ac.nz),

**Approved by the Auckland University of Technology Ethics Committee on 30 June 2021, AUTEK Reference number 21/189.**

## Appendix 12: Consent Form for Delphi Panel Participants



### Consent Form (for Delphi participants)

*Project title:* Destination Management System (DMS) and Community Participation in Tourism: Indonesia Case

*Project Supervisor:* Prof. Simon Milne

*Researcher:* Muhammad Dhaifan Akbar

- I have read and understood the information provided about this research project in the Information Sheet dated 27 May 2021.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interview and that the interview will be recorded and transcribed with my permission.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I agree to be re-contacted for the follow up rounds of the Delphi: Yes  No
- I wish to receive a summary of the research findings (please tick one): Yes  No

Participant's signature: .....

Participant's name: .....

Participant's Contact Details (if appropriate):

.....  
.....  
.....  
.....

Date:

**Approved by the Auckland University of Technology Ethics Committee on 30 June 2021 AUTEC Reference number 21/189**

*Note: The Participant should retain a copy of this form.*

## **Appendix 13: Pilot – Interview Guide for the Delphi Panel Participants (Round One)**

**Project Title:** *Destination Management System and Community Participation: Indonesia Case*

**Interview Purpose:** *This research is intended to understand the role that DMS can play in the implementation of sustainable tourism principles – with a focus on community participation. This research is also designed to inform the formulation of an alternative model of DMS.*

This interview will take approximately 45 minutes to 60 minutes to complete.

### **DMS Definition, Features and Aims**

1. What is your understanding of a Destination Management System (DMS)? How would you define it?
2. Have you come across and/or engaged with Destination Management System(s) in your work?
3. What do you think are the purposes of a DMS? For whom it should be intended (beneficiaries)?
4. What are the critical features (information and functions) that a DMS should include? Why?
5. How should DMS performance be measured?

### **DMS – Sustainable Development and Community Participation**

6. Does DMS have an active role in supporting sustainable development? Why and how?
7. Is there any role for DMS in facilitating community participation in tourism? Why and how?
8. What features (information and function) in a DMS do you think can influence community participation in tourism development?

### **DMS Future**

9. How significant is DMS for sustainable tourism development in the future? What is the future role of DMS for tourism sustainable tourism development? – where should the focus lie?

### **Ideal DMS**

10. Do you have any suggestion of best example from DMS available today? Why?

## **Appendix 14: Interview Guide for the Delphi Panel Participants (Round One)**

**Project Title:** *Destination Management System and Community Participation: Indonesia Case*

**Interview Purpose:** *This research is intended to understand the DMS role on the implementation of sustainable tourism principles focusing on community participation. This research is also designed to formulate the alternative model of DMS.*

This interview will take about 45 minutes to 60 minutes.

### **DMS Definition and Aims**

1. What has been your engagement with and role in DMS?
2. What is your definition of Destination Management System (DMS)?
3. What are the main purposes of DMS?
4. Does DMS have an active role in supporting sustainable development? Why and how?

### **DMS Features and Community Participation**

5. What are the critical features that a DMS should include? Why?
6. How should DMS performance be measured?
7. Is there any role for DMS in facilitating community participation in tourism? Why and how?
8. What do you think the features in the DMS that can influence community participation in tourism development?

### **DMS Future**

9. What is the significance of DMS for tourism development in the future?
10. What is the future role of DMS – where should the focus lie?
11. Do you have any suggestion of best example from DMS available today?

## Appendix 15: The Delphi Round Two Questionnaire Form



### Delphi Round Two Questionnaire

This questionnaire is part of Muhammad Dhaifan Akbar's PhD research entitled *Destination Management Systems and Community Participation: Indonesian Cases*. This questionnaire is a continuation of the previous Delphi research interview you participated in and will explore the findings that emerged from that first round of the research. The purpose of this questionnaire is to enrich and sharpen the findings of the previous round of the Delphi research. The results and the findings of this questionnaire will only be used for this research.

#### **A. Destination Management System (DMS) Terminology**

1. The passage below is a DMS definition formulated from the keywords that emerged from the Delphi round 1 interviews.

*“A Destination Management System (DMS) is a destination focused digital representation platform operated by the Destination Management Organisation (DMO). The DMS supports the DMO to perform its management functions and facilitates collaboration of all stakeholders by connecting them through the DMS network.”*

*Do you agree with this definition,*

Yes

No

*If you choose **NO**, please comment in the box below :*

2. When participants were asked about the main purposes of a DMS the following themes emerged from round one of the Delphi. ***Please indicate which of the following you believe are main purposes of a DMS by ticking the boxes (tick as many as apply):***

- Facilitate tourism destination stakeholder collaboration
- Be the official portal to access information about the tourism destination
- Supporting the efficiency of tourism services delivery in the tourism destination
- DMS becomes a tool to support knowledge management for tourism development
- Promoting tourism products in the destination individually and collectively
- DMS is a supporting tool of the DMO to control the distribution and the standard of tourism products
- Monitor up to date situation of tourism development in the destination for evaluation purpose
- DMS is a supporting tool for sustainable tourism implementation of tourism destination

***You can add to the above list and provide any comments in the text box below:***

3. The list below shows the main content and features of a DMS that emerged from the round 1 Delphi research. ***Please indicate which content and features you see as key for a DMS (tick as many boxes as apply):***

- Providing certification for the tourism products that are presented in the DMS.
- The structure of information flows between destination stakeholders (producers and consumers) to be published on the website.
- General (Non-commercial) information of the tourism destination, for instance, destination profile, features and tourism related public services.
- Information about economic opportunities arising from tourism development, like supply line gaps, and job market openings.
- Information about tourism related volunteering opportunities.
- Information on tourism-related policies and their application in the destination.
- A portal that links with any digital platforms related to the tourism products in the destination

- Information of tourism destination development indicators and the latest progress toward achieving targets
- Live feed information on recent events in a tourism destination, for example, tourism impacts and disasters that impact tourism activity.
- A system that can collect, store and analyse information from users.
- Comments and feedback boxes that users can fill to provide information on their experiences.
- An interactive communication channel between tourists and destination stakeholders.
- Promotional content in various media for tourism products individually and the destination as a whole
- E-commerce and transactional functions for local tourism businesses represented in the DMS, enabling booking and the purchase of tourism services.

***You can add to the above list and provide any comments in the text box below:***

4. These are the beneficiaries of DMS that were identified in round 1 of the Delphi:

- Destination Management Organisation or Authority
- Local Community or Community Groups
- Tourists
- Tourism Businesses
- Key Tourism Resources e.g., environment, authentic local culture

***Please arrange these identified beneficiaries of the DMS in the table below. NB***

***You can add new or remove existing beneficiaries from the list***

Direct Beneficiaries	Indirect Beneficiaries

5. The following measures of DMS success were highlighted in round 1 of the Delphi research. **Please indicate which of these DMS evaluation criteria you feel should be adopted (tick as many boxes as apply):**

- Tourism's economic benefit to the local community, e.g., job creation, income.
- Tourism's impact on the environment.
- How user-friendly the interface of the website is for the users.
- The ease of managing and administrating the DMS for the system operator.
- The number and type of comments received from DMS users.
- The value and volume of tourism product sales through DMS.
- Quality of Information provided e.g., information accuracy, reliability, usability.
- Website position on search engines.
- Website Traffic Statistics.

**You can add to the above criteria and provide any comments in the text box below:**

**B. Destination Management System, Sustainable Tourism and Community Participation**

6. The following ways in which DMS can enable sustainable tourism practices and development were identified in round 1 of the Delphi. **Please indicate below which of the DMS enabled sustainable tourism practices you agree (tick as boxes many as apply):**

- Prevent leakage from the tourism economy by reducing dependence on external intermediaries such as online travel agents
- Provide information about sustainable tourism targets
- Monitor the progress of sustainable tourism implementation.
- Managing the carrying capacity of the destination by tracking number of tourists in the tourism destination.
- Managing tourism inventory e.g., tourism facilities
- Managing tourism key resources, e.g., environment

- The DMO can prioritise sustainable products to be promoted in the DMS
- DMS can provide education and raise awareness of sustainable tourism practices among all tourism stakeholders

***You can add to the above list and provide any comments in the text box below:***

7. The following ways in which DMS can enable community participation in tourism development were identified from round 1 of the Delphi. ***Please indicate below the statements about DMS enabled community participation practices that you agree with (tick as many boxes as apply):***

- DMS can help to improve community access to tourism opportunities in the destination by sharing information about community development programs provided by a tourism authority or tourism businesses
- DMS facilitates coordination of tourism products and communication between tourism destination stakeholders
- DMS can help to improve the community's sense of belonging towards their area and livelihood
- DMS can present local tourism products and enhance the competitiveness of the tourism offering
- DMS can offer information on commercial and non-commercial opportunities for local stakeholders that arise from tourism development.
- DMS can be a local sharing economy platform for tourism products in the tourism destination

***You can add to the above list and provide any comments in the text box below:***

8. The following content and features for the DMS were identified in round 1 of Delphi as being able to empower local community participation in tourism development.

***Please indicate the DMS content and features that you agree can empower community participation in tourism development (tick as many boxes as apply):***

- Local tourism businesses web page that can be managed by the business's owner.
- Interactive communication tool for local tourism stakeholders.
- Complaint and recommendation features for users, including the community.
- Content in the DMS produced by the local community and community groups.
- Incorporating game element with the DMS content and features to attract local stakeholders accessing the DMS.
- Information on local culture, customs, and events.
- Information on tourism destination development plans and strategy to raise community awareness.
- Providing tourism development-related education, training, and workshop content through the DMS.

***You can add to the above list and provide any comments in the text box below:***

### **C. DMS Future Development**

9. These following future challenges to DMS development were identified in round one of the Delphi. ***Please indicate below the challenges you feel will influence future DMS development (tick as many boxes as apply):***

- Tourism authorities lack awareness of the importance of information technologies in tourism.
- Community lack awareness of the importance of the information technologies in tourism.
- Many digital platforms for tourism destinations are not built to focus on and solve local tourism issues.
- There is a lack of clarity about which entity should have the authority to develop the DMS.
- Funding for DMS is often not able to be sustained.
- There is often insufficient human resource capacity to manage and use DMS.
- The political setting of Indonesia changes every 5 years, and this brings different development priorities.

***You can also add to the above list and provide any comments in the text box below:***

10. The following recommended management bodies, and funding approaches, for DMS emerged from round 1 of the Delphi. From the options below please identify the management and funding approaches you feel work well for DMS (select as many as apply):

- Management Body.
  - Community group
  - Public-private partnership
  - Private entity
  - Public entity
- Funding.
  - Public-private partnership funding
  - Public funding

***Please state your recommendation of what organisation will best manage the DMS and which funding scheme would be best applied for the DMS in the text below:***

11. When asked to outline the future development of DMS in round 1 of the Delphi, participants identified the following themes. ***Please indicate if you agree with these future developments in DMS by ticking the boxes below:***

- DMS will incorporate the latest advances in information technology.
- DMS will adapt to local technological needs to be able to ensure greater local access to DMS.
- DMS will accommodate interactive communication features to facilitate conversation between all stakeholders.
- Information from DMS will be the primary reference point for decision-making for all stakeholders particularly DMO.
- DMS is a key tool to collect and analyse data and distribute knowledge to all stakeholders.
- DMS will be a primary representation of tourism destinations, i.e. source of official information and communication to the visitor.
- DMS's capability to support sustainable tourism development practices will improve.

- DMS will be the main monitoring tool for tourism development performance in the destination.

***You can add to the above list and provide any comments in the text box below:***

## Appendix 16: The Delphi Round Three Questionnaire Form



### Delphi Round Three Questionnaire

This questionnaire is part of Muhammad Dhaifan Akbar's PhD research entitled *Destination Management Systems and Community Participation: Indonesian Cases*. This questionnaire is a continuation of the previous two rounds of Delphi research you participated in and to follow up Delphi round two findings. The purpose of this questionnaire is to find consensual answers to finalise the Delphi research findings. The results and the findings of this questionnaire will only be used for this research.

#### **D. Destination Management System (DMS) Terminology**

1. The passage below provides a definition of a DMS formulated from the keywords that emerged from the Delphi round one and has been revised based on Delphi round two findings. Please indicate your opinion of the following definition of a DMS by ticking one of the boxes below:

"A Destination Management System (DMS) is a destination focused knowledge-based Information and Communication Technology (ICT) platform operated by the Destination Management Organisation (DMO).

The DMS facilitates collaboration and decision-making processes of all tourism stakeholders by connecting them through the DMS network and supports the DMO to perform its marketing and management responsibilities."

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. When asked about the main purposes of a DMS, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on **the main purposes of the DMS** using the scale 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*, 4: *Agree*; 5: *Strongly Agree*).

<b>DMS MAIN PURPOSES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
To Facilitate collaboration among tourism destination stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be the official portal to access information about the tourism destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To support the efficient delivery of tourism services in the destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To support knowledge management for tourism development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To promote individual tourism products as well as the destination as a whole.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To support the DMO to manage the distribution and the standard of tourism products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To frequently monitor tourism development in the destination for evaluation purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To support sustainable tourism implementation in the destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. When asked what the main content and features of a DMS should be, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on the **main content and features of DMS** using the scale of 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*, 4: *Agree*; 5: *Strongly Agree*).

<b>DMS MAIN CONTENT AND FEATURES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Organisation and coordination of DMS content, to manage information flows and support back-office functions of the DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General visitor information about the destination, for instance, destination profile, features and tourism related public services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information about economic opportunities arising from tourism development, such as gaps in the tourism supply chain, and job market openings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on tourism-related policies, regulations, and experts' advice to business and community groups in the destination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A portal that links to any digital platforms related to distribution of the destination's tourism products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information about the destination tourism success indicators and the latest progress toward achieving targets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live feed or real time information about events in a tourism destination, for example, natural disasters that impact tourism activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A system that can be used to collect, store, and analyse information from users.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A feedback function where visitors can provide information about their experiences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
An interactive communication channel between tourists and destination stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destination sustainable tourism targets and the progress in achieving them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incorporating augmented reality for destination 3D interactive mapping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. When asked about the main beneficiaries of DMS, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on who should be the **main beneficiaries of the DMS** using the scale of 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*, 4: *Agree*; 5: *Strongly Agree*).

<b>DMS MAIN BENEFICIARIES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
National tourism organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sub-national or local Destination Management Organisation (DMO) or authority.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local residents, and community groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tourists.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tourism businesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-governmental organisations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Press and Media.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Academics for teaching and research purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. When asked about the evaluation criteria for DMS success, the following themes emerged from rounds one and two of the Delphi. Please indicate your opinion on the **evaluation criteria for the success of DMS** using the scale of 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*, 4: *Agree*; 5: *Strongly Agree*).

<b>DMS EVALUATION CRITERIA</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Tourism's benefit to the local community, e.g., job creation and income.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tourism's impact on the environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How user-friendly the interface of the website is for the users.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ease of managing and administrating the DMS for the system operator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of information provided e.g., information accuracy, reliability, usability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Website ranking on search engines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Website Traffic Statistics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List and evaluation of DMS enabled tourism programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E. Destination Management System, Sustainable Tourism and Community Participation**

6. When asked about sustainable tourism practices that can be facilitated by the DMS, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on **DMS facilitated sustainable tourism practices** using the scale of 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*, 4: *Agree*; 5: *Strongly Agree*).

<b>DMS ENABLED SUSTAINABLE TOURISM PRACTICES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Provide information about sustainable tourism targets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitor the progress of sustainable tourism implementation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manage the destination's carrying capacity by tracking number of tourists in the tourism destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify and map tourism assets in the destination e.g., tourism facilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitor tourism impacts on the destination's key resources e.g., natural resource.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The DMO can prioritise sustainable products to be promoted in the DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can house resources to support destination stakeholders as they learn about sustainable tourism practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can contribute to economic sustainability by providing tourism job information and as a marketing tool for tourism businesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. When asked how DMS can support community participation practices in tourism development, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on **DMS supported community participation practices in tourism development** using the scale of 1 to 5 below. (1: Strongly Disagree; 2: Disagree; 3: Neutral, 4: Agree; 5: Strongly Agree).

<b>DMS ENABLED COMMUNITY PARTICIPATION PRACTICES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
DMS can help to improve community capacity for tourism by sharing information about workshops and community development programs provided by a tourism authority or tourism businesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS facilitates coordination of tourism products and communication between tourism destination stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can help to sustain and improve the residents' sense of belonging to their area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can support promotion and conservation of community local culture, value, and custom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can present local tourism products and enhance the competitiveness of the tourism offering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can offer information on commercial and non-commercial opportunities for local stakeholders that arise from tourism development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can be a local sharing economy platform for tourism products in the tourism destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS can support the local community to become directly involved in tourism decision making (polls and e-voting as examples).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. When asked about DMS content and features that can support community participation, the following emerged from rounds one and two of Delphi. Please indicate your opinion on **DMS content and features that can enable community participation in tourism development** using the scale of 1 to 5 below. (1: Strongly Disagree; 2: Disagree; 3: Neutral, 4: Agree; 5: Strongly Agree).

<b>DMS CONTENT AND FEATURES THAT CAN ENABLE COMMUNITY PARTICIPATION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
A web page for local tourism businesses that can be managed by the business's owner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interactive communication tool for local tourism stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feedback and recommendation features for users, including the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content in the DMS produced by the local community and community groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on local culture, customs, and events.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on tourism destination development plans and strategy to raise community awareness towards local tourism development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing tourism development-related education, training, and workshop content through the DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information about awards for individual or organisation that excel in sustainable tourism practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**F. DMS Future Development**

9. When asked about DMS development challenges, the following emerged from rounds one and two of Delphi. Please indicate your opinion on **DMS development challenges** using the scale of 1 to 5 below. (1: *Strongly Disagree*; 2: *Disagree*; 3: *Neutral*; 4: *Agree*; 5: *Strongly Agree*).

<b>DMS DEVELOPMENT CHALLENGES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Tourism authorities lack awareness of the importance of information technologies in tourism.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of information, reference, and discussion about DMO and DMS in Indonesia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community lacks awareness of the importance of information technologies in tourism.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many digital platforms for tourism destinations are not built to focus on and solve local tourism issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a lack of clarity about which entity should have the authority to develop the DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Funding for DMS is often not able to be sustained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is often insufficient human resource capacity to manage and use DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The political setting of Indonesia changes every five years, and this brings different development priorities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. When asked about the recommended management and financing sources and approaches for DMS, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on **DMS recommended management body and financing scheme and sources** from the scale of 1 to 5 below. (1: Strongly Disagree; 2: Disagree; 3: Neutral, 4: Agree; 5: Strongly Agree).

<b>RECOMMENDED MANAGEMENT BODY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Public-private partnership scheme.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local scale government owned company such as village's owned corporation (Badan Usaha Milik Desa in Indonesia context).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community-based corporation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-stakeholder organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>RECOMMENDED FINANCING SCHEME AND SOURCES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Public-private partnership funding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public funding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Venture or shared capital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. When asked about what the future DMS looks like, the following emerged from rounds one and two of the Delphi. Please indicate your opinion on **the DMS future development** from the scale of 1 to 5 below. (1: Strongly Disagree; 2: Disagree; 3: Neutral, 4: Agree; 5: Strongly Agree).

<b>DMS FUTURE DEVELOPMENT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
DMS will incorporate the latest advances in information technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS will adapt to local technological needs to be able to ensure greater local access to DMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS will accommodate interactive communication features to facilitate conversation between all stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS is a key tool to collect and analyse data and distribute knowledge to all stakeholders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS will be a primary representation of tourism destinations, i.e., source of official information and communication to the visitor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS's capability to support sustainable tourism development practices will improve.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DMS will be the main monitoring tool for tourism development performance in the destination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix 17: The Evaluated Destination Website

Administrative Level	Evaluated DMS Locations	URL
<b>Country</b>	1. Bermuda	1. <a href="https://www.gotobermuda.com/">https://www.gotobermuda.com/</a>
	2. Cook Islands	2. <a href="https://cookislands.travel/islands">https://cookislands.travel/islands</a>
	3. Jordan	3. <a href="https://www.myjordanjourney.com/">https://www.myjordanjourney.com/</a>
	4. Palau	4. <a href="https://www.pristineparadisepalau.com/">https://www.pristineparadisepalau.com/</a>
	5. Singapore	5. <a href="https://www.visitsingapore.com/">https://www.visitsingapore.com/</a>
	6. Timor Leste	6. <a href="https://www.timorleste.tl/">https://www.timorleste.tl/</a>
	7. Yap	7. <a href="https://www.visit Yap.com/">https://www.visit Yap.com/</a>
<b>Region / Province / State</b>	1. Azores, Portugal	1. <a href="https://www.visitazores.com/en">https://www.visitazores.com/en</a>
	2. Bonaire, Netherland	2. <a href="https://www.tourismbonaire.com/">https://www.tourismbonaire.com/</a>
	3. British Columbia, Canada	3. <a href="https://www.destinationbc.ca/">https://www.destinationbc.ca/</a>
	4. Bundaberg Region, Australia	4. <a href="https://www.bundabergregion.org/">https://www.bundabergregion.org/</a>
	5. Durham County, the UK	5. <a href="https://www.thisisdurham.com/">https://www.thisisdurham.com/</a>
	6. Jeju Island, Republic of Korea	6. <a href="https://www.visitjeju.net/en/">https://www.visitjeju.net/en/</a>
	7. Luang Prabang, Laos	7. <a href="https://tourismluangprabang.org/">https://tourismluangprabang.org/</a>
	8. Malacca, Malaysia	8. <a href="https://tourismmelaka.com/">https://tourismmelaka.com/</a>
	9. Oregon, United States	9. <a href="https://traveloregon.com/">https://traveloregon.com/</a>
	10. Penang, Malaysia	10. <a href="https://mypenang.gov.my/?lg=en">https://mypenang.gov.my/?lg=en</a>
	11. Perak, Malaysia	11. <a href="https://www.tourismperakmalaysia.com/">https://www.tourismperakmalaysia.com/</a>
	12. Puglia, Italy	12. <a href="https://www.viaggiareinpuglia.it/hp/en">https://www.viaggiareinpuglia.it/hp/en</a>
	13. Sabah, Malaysia	13. <a href="https://sabahtourism.com/">https://sabahtourism.com/</a>
	14. Saskatchewan, Canada	14. <a href="https://www.tourismsaskatchewan.com/">https://www.tourismsaskatchewan.com/</a>
	15. Vipavska dolina, Slovenia	15. <a href="https://www.vipavskadolina.si/en">https://www.vipavskadolina.si/en</a>
	16. Yogyakarta, Indonesia	16. <a href="https://en.visitngjogja.com/">https://en.visitngjogja.com/</a>
<b>Sub-Region</b>	1. Atauro Island, East Timor	1. <a href="https://ataurotourism.org/">https://ataurotourism.org/</a>
	2. Banyuwangi, Indonesia	2. <a href="https://banyuwangitourism.com/">https://banyuwangitourism.com/</a>
	3. Corn Islands, Nicaragua	3. <a href="https://www.discovercornisland.com/">https://www.discovercornisland.com/</a>
	4. El Hierro, Canary Island, Spain	4. <a href="https://elhierro.travel/en">https://elhierro.travel/en</a>
	5. Great Barrier Island, New Zealand	5. <a href="https://www.greatbarrier.co.nz/">https://www.greatbarrier.co.nz/</a>
	6. Ha Long Bay, Vietnam	6. <a href="https://www.visithalongbay.com/">https://www.visithalongbay.com/</a>
	7. Koh Yao, Thailand	7. <a href="http://www.kohyaotravel.com/">http://www.kohyaotravel.com/</a>
	8. Lička Plješivica, Croatia	8. <a href="https://np-plitvicka-jezera.hr/en/">https://np-plitvicka-jezera.hr/en/</a>
	9. Nara Prefecture, Japan	9. <a href="https://www.visitnara.jp/">https://www.visitnara.jp/</a>
	10. Raja Ampat, Indonesia	10. <a href="https://www.stayrajaampat.com/">https://www.stayrajaampat.com/</a>
	11. Sahara, Marocco	11. <a href="https://moroccosaharatourism.com/">https://moroccosaharatourism.com/</a>
	12. The Catlins, New Zealand	12. <a href="https://www.catlins.org.nz/">https://www.catlins.org.nz/</a>
	13. Toraja, Indonesia	13. <a href="https://www.visittoraja.com/">https://www.visittoraja.com/</a>
	14. Wakatobi, Indonesia	14. <a href="https://www.wakatobitourism.com/">https://www.wakatobitourism.com/</a>

(Table continued over the page...)

<b>Administrative Level</b>	<b>Evaluated DMS Locations</b>	<b>URL</b>
<b>Urban Area / Metropolitan Area</b>	1. Ann Arbor, USA	1. <a href="https://www.annarbor.org/">https://www.annarbor.org/</a>
	2. Campbell River, Canada	2. <a href="https://www.campbellriver.travel/">https://www.campbellriver.travel/</a>
	3. Dubai, UAE	3. <a href="https://www.visitdubai.com/en/summer-in-dubai">https://www.visitdubai.com/en/summer-in-dubai</a>
	4. El Nido, Palawan, Philippines	4. <a href="https://elnidotourism.ph/">https://elnidotourism.ph/</a>
	5. Erfurt, Germany	5. <a href="https://www.erfurt-tourismus.de/en/">https://www.erfurt-tourismus.de/en/</a>
	6. Fernie, Canada.	6. <a href="https://tourismfernie.com/">https://tourismfernie.com/</a>
	7. Glasgow, the UK	7. <a href="https://tourism.hanoi.gov.vn/">https://tourism.hanoi.gov.vn/</a>
	8. Hanoi, Vietnam	8. <a href="https://www.itacare.com/">https://www.itacare.com/</a>
	9. Itacare City, Brazil	9. <a href="https://kyoto.travel/en/index.html">https://kyoto.travel/en/index.html</a>
	10. Kyoto, Kansai, Japan	10. <a href="https://www.pmbtourism.co.za/">https://www.pmbtourism.co.za/</a>
	11. Pietermaritzburg, South Africa	11. <a href="https://visitsaranda.net/">https://visitsaranda.net/</a>
	12. Saranda, Albania	12. <a href="https://www.destinationtoronto.com/">https://www.destinationtoronto.com/</a>
	13. Toronto, Canada	13. <a href="https://wheelingcvb.com/">https://wheelingcvb.com/</a>
	14. Wheeling, USA	

## Appendix 18: Indonesia Strategic Tourism Development Area

KSPN	Administrative Regions	Description
<b>KSPN Pulau Weh dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kota Sabang</li> </ul>	Sabang Island, situated at the westernmost tip of Indonesia, is famously known as the nation's "Zero Point" and is even referenced in a national song. Today, Sabang City is recognised not only for its historical significance but also as a prominent coastal and marine tourism destination.
<b>KSPN Teluk Dalam – Nias dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• South Nias Regency</li> </ul>	South Nias is widely recognised as the home of one of Indonesia's most renowned surfing destinations, Sorake Beach. Beyond its natural attractions, the regency is notable for its rich cultural heritage, being inhabited by the traditional Nias tribes who continue to preserve ancestral architecture and customs. Among its cultural highlights is the traditional village of Bawomataluo, where visitors can witness the iconic Nias stone-jumping tradition.
<b>KSPN Tangkahan dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Langkat Regency</li> <li>• Gayo Lues Regency</li> <li>• North West Aceh Regency</li> <li>• South Aceh Regency</li> <li>• South East Aceh Regency</li> </ul>	Tangkahan is a conservation area within the Leuser National Park, renowned as the natural habitat of the Sumatran elephant, orangutan, and Sumatran tiger.
<b>KSPN Toba dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Simalungun Regency</li> <li>• Tobasa Regency</li> <li>• Samosir Regency</li> <li>• North Tapanuli Regency</li> <li>• Humbang Hasundutan Regency</li> <li>• Dairi Regency</li> <li>• Karo Regency</li> <li>• Pakpak Bharat Regency</li> </ul>	KSPN Toba encompasses the area surrounding Lake Toba, one of the largest volcanic lakes in the world and the ancestral homeland of the Batak people. The region is deeply rooted in Batak culture and home to various Batak sub-tribes. It is also believed to be the site where the first Batak king descended. Notable cultural heritage sites include the tomb of King Sisingamangaraja XII, a revered Batak ruler and Indonesian national hero. Today, Toba is recognised as a tourism destination that combines breathtaking natural landscapes with rich Batakese cultural heritage.

*(Table continued over the page...)*

<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Mentawai-Sibeurut dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Mentawai Regency</li> </ul>	The Mentawai Islands are a group of small islands in western Indonesia, internationally renowned as a world-class surfing destination. Beyond their natural allure, the islands are also home to the Mentawai people, an indigenous ethnic group known for their distinct cultural practices and traditions, rooted in the heritage of their ancestors.
<b>KSPN Bukittinggi dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bukittinggi City</li> </ul>	Bukittinggi, located in the highlands of West Sumatra Province, is recognised as a heritage city. It is celebrated for its role in Indonesia's struggle for independence during the colonial period and is equally renowned for its distinctive local cuisine, particularly beef rendang. The city is also the hometown of Mohammad Hatta, Indonesia's first Vice President and a National Hero.
<b>KSPN Maninjau dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Agam Regency</li> </ul>	Lake Maninjau, one of the largest lakes in West Sumatra Province, is not only a natural landmark but also a place of cultural significance. One of the lakeside villages is the birthplace of Buya Hamka, a revered religious leader, poet, and National Hero of Indonesia.
<b>KSPN Singkarak dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Tanah Datar Regency</li> <li>• Solok Regency</li> <li>• Solok City</li> </ul>	This destination features three volcanic lakes in West Sumatra Province: Lake Singkarak, Lake Diatas, and Lake Dibawah.
<b>KSPN Rupat dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bengkalis Regency</li> </ul>	This destination is located on a small island in the Malacca Strait and is known as one of the coastal tourism destinations.
<b>KSPN Kerinci Seblat dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Sungai Penuh City</li> <li>• Kerinci Regency</li> <li>• Merangin Regency</li> <li>• Pesisir Selatan Regency</li> <li>• Muko – Muko Regency</li> </ul>	This area, known as Kerinci National Park, lies at the foot of Mount Kerinci, the highest mountain on Sumatra. The park is home to the Sumatran tiger and the Rafflesia arnoldii, one of the largest flowers in the world.
<b>KSPN Muaro Jambi</b>	<ul style="list-style-type: none"> <li>• Muaro Jambi Regency</li> </ul>	This tourism destination is renowned for its cultural heritage and archaeological sites, with key attractions including the Muaro Jambi Temple and the Archaeology Museum.

*(Table continued over the page...)*

<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Lagoi dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bintan Regency</li> </ul>	The destination is situated on Bintan Island, a small island in the Riau Archipelago Province, and is renowned for its coastal and marine attractions.
<b>KSPN Nongsa-Pulau Abang dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Batam City</li> </ul>	This archipelagic tourism destination is centred on Rempang Island and is home to the Melayu Rempang ethnic group, part of the broader Malay coastal community.
<b>KSPN Natuna-Anambas dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Natuna Regency</li> </ul>	KSPN Natuna is an archipelagic tourism destination in western Indonesia, with surrounding seas renowned as tuna habitats, making it a popular fishing area. Natuna is also recognised as a leading marine tourism destination.
<b>KSPN Tanjung Kelayang-Belitung dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Belitung Regency</li> </ul>	Tanjung Kelayang is a tourism destination on Belitung Island, a small island in Indonesia, known for its coastal attractions and cultural significance, particularly linked to Belitung Malay traditions. The destination gained widespread popularity following the success of the best-selling book and film <i>Laskar Pelangi</i> , which showcased the local culture and way of life of the Belitung community.
<b>KSPN Palembang Kota dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Palembang City</li> </ul>	Palembang is a popular urban destination in western Indonesia. The city was once a centre of colonial power and is renowned for its distinctive culinary offerings. It is home to one of the largest rivers in Sumatra, the Musi River, and the iconic Ampera Bridge, which has become a major tourist attraction.
<b>KSPN Pagaralam dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Pagaralam City</li> </ul>	Pagaralam is an ecotourism destination situated at the foot of Mount Dempo, with attractions primarily centred on its natural resources, including rivers, waterfalls, and tea plantations.
<b>KSPN Enggano dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• North Bengkulu Regency</li> </ul>	Enggano is a small island renowned for its marine and coastal tourism, with snorkelling and scuba diving among the most popular activities.
<b>KSPN Way Kambas dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Tulang Bawang Regency</li> <li>• Centre Lampung Regency</li> <li>• East Lampung Regency</li> </ul>	KSPN Way Kambas is a conservation-focused tourism destination, renowned as a sanctuary for the Sumatran elephant and a centre for ongoing conservation programmes.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Danau Ranau dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• South Ogan Komering Ulu Regency</li> </ul>	Lake Ranau is a volcanic lake situated in the southern part of Sumatra.
<b>KSPN Krakatau dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• South Lampung Regency</li> </ul>	Krakatau is an archipelago of renowned volcanic islands, with surrounding seas noted for their rich marine biodiversity..
<b>KSPN Ujung Kulon-Tanjung Lesung dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Pandeglang Regency</li> </ul>	Ujung Kulon National Park, located on the west coast of Java, is unique for its blend of rainforest and coastal ecosystems. It is also home to the Javan one-horned rhinoceros.
<b>KSPN Kepulauan Seribu dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Seribu Islands Regency, Jakarta Special Region</li> </ul>	Seribu Islands is an archipelago popularly known as a marine tourism destination, especially for snorkelling and diving.
<b>KSPN Kota Tua-Sunda Kelapa dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• North Jakarta City, Jakarta Special Region</li> </ul>	Kota Tua and Sunda Kelapa are heritage sites situated in the heart of Jakarta.
<b>KSPN Gunung Halimun dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Lebak Regency</li> <li>• Bogor Regency</li> <li>• Sukabumi Regency</li> </ul>	Gunung Halimun National Park, located at the foot of Mount Halimun, is a rainforest ecosystem and home to the Javan leopard.
<b>KSPN Puncak-Gede Pangrango dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bogor Regency</li> <li>• Cianjur Regency</li> <li>• Sukabumi Regency</li> </ul>	Mount Gede and Mount Pangrango are located within a national park in West Java Province, one of Indonesia's most popular hiking destinations.
<b>KSPN Bandung Kota</b>	<ul style="list-style-type: none"> <li>• Bandung City</li> <li>• Cimahi City</li> <li>• West Bandung Regency</li> </ul>	Bandung is an urban tourism destination renowned for its highland setting and the blend of Sundanese and colonial cultures. The city has also been the site of significant historic events, including the Asia-Africa Conference.
<b>KSPN Ciwidey dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bandung Regency</li> </ul>	Ciwidey is a conservation area and one of the most popular ecotourism destinations in West Java. Its most famous attraction, Kawah Putih, is a volcanic crater lake formed by past volcanic activity.
<b>KSPN Pangandaran dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Pangandaran Regency</li> </ul>	Pangandaran is a coastal tourism destination situated on the southern coast of West Java Province. It is also well known as a popular surfing spot.
<b>KSPN Karimunjawa dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Jepara Regency</li> </ul>	Karimun Jawa is a small archipelago north of Central Java, renowned as a marine tourism destination and popular for snorkelling and scuba diving.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Borobudur-Mendut – Pawon dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Magelang Regency</li> <li>• Yogyakarta Special Region</li> </ul>	Borobudur Temple, one of the Seven Wonders of the World and a UNESCO World Heritage Site, continues to host religious ceremonies and holds significant historical value linked to the ancient Majapahit Kingdom.
<b>KSPN Sangiran dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Sragen Regency</li> </ul>	Sangiran is an archaeological site of prehistoric humans and is recognised as a UNESCO World Heritage Site.
<b>KSPN Karst Pacitan dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Wonogiri Regency</li> <li>• Pacitan Regency</li> </ul>	Pacitan is a coastal tourism destination on the southern coast of East Java Province.
<b>KSPN Dieng dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Wonosobo Regency</li> </ul>	Dieng Highland is a heritage site that hosts Dieng Temple, a historic Hindu temple.
<b>KSPN Merapi-Merbabu dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Boyolali Regency</li> <li>• Magelang Regency</li> <li>• Semarang Regency</li> </ul>	KSPN Merapi-Merbabu is a tourism destination encompassing the national parks of Mount Merapi and Mount Merbabu, two volcanic mountains known for some of Indonesia's most popular hiking trails.
<b>KSPN Prambanan dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Yogyakarta Special Region</li> </ul>	Another heritage site is Prambanan Temple, the largest Hindu temple in Indonesia. Unlike many heritage sites located in rural areas, it is situated on the outskirts of the urban area of Yogyakarta.
<b>KSPN Kota Yogyakarta dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Yogyakarta Special Region</li> </ul>	Yogyakarta is a heritage city and one of the few remaining kingdoms that still govern the Special Region of Yogyakarta. The city is centred around the palace, reflecting its identity as a city within the kingdom.
<b>KSPN Pantai Selatan Yogyakarta dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Yogyakarta Special Region</li> </ul>	Pantai Selatan Yogyakarta is a popular coastal tourism destination. While primarily known for its beach and marine activities, the area is also rich in traditional Javanese cultural beliefs.
<b>KSPN Karst Gunung Kidul dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Yogyakarta Special Region</li> </ul>	Karst Gunung Kidul is located east of the Pantai Selatan Yogyakarta coastline. The Gunung Kidul coast is distinguished by its karst formations, whereas the Pantai Selatan coastline is primarily composed of sandy beaches.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Bromo-Tengger-Semeru dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Lumajang Regency</li> </ul>	This destination is one of Indonesia's most popular national parks, featuring two highly visited volcanic mountains. Mount Bromo is easily accessible and hosts numerous traditional and contemporary events, while Semeru stands as the highest peak in Java.
<b>KSPN Trowulan dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Mojokerto Regency</li> <li>• Jombang Regency</li> </ul>	This destination encompasses several Indonesian heritage sites, including temples and sculptures from ancient Buddhist kingdoms.
<b>KSPN Ijen-Baluran dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Banyuwangi Regency</li> <li>• Bondowoso Regency</li> <li>• Situbondo Regency</li> </ul>	Ijen and Baluran are conservation-focused tourism destinations. The rare blue fire crater at Ijen is the main attraction in this national park.
<b>KSPN Menjangan-Pemuteran dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Buleleng Regency</li> </ul>	Menjangan–Pemuteran is a coastal tourism destination on Bali's northern coast, renowned for wildlife watching, particularly the Bali deer that swim across the sea to Menjangan Island.
<b>KSPN TN Bali Barat dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Jembrana Regency</li> </ul>	TN Bali Barat is a national park in Bali, renowned as a conservation area and home to the iconic Bali deer.
<b>KSPN Bali Utara-Singaraja dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Buleleng Regency</li> </ul>	Bali Utara and Singaraja are destinations in northern Bali. Key attractions include Lovina Beach, famous for its dolphin colonies; the historic city of Singaraja, Bali's first provincial capital; and the religious sites surrounding Lake Tamblingan.
<b>KSPN Bedugul dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Buleleng Regency</li> <li>• Tabanan Regency</li> </ul>	Bedugul is a tourism destination in the heart of Bali, set in a rural area around Lake Bedugul and home to an iconic Balinese Hindu temple.
<b>KSPN Kintamani-Danau Batur dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bangli Regency</li> </ul>	Kintamani and Lake Batur are destinations that highlight Balinese Hindu culture, particularly around Lake Batur. The area also offers ecotourism activities, including trail walks around Mount Batur and Mount Abang.
<b>KSPN Besakih-Gunung Agung dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Karangasem Regency</li> </ul>	This destination is home to the largest Balinese temple, situated at the foot of Mount Agung, Bali's highest mountain, which also features a popular walking trail.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Tulamben-Amed dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Karangasem Regency</li> </ul>	Tulamben is a conservation-focused tourism destination, with coastal waters forming one of Bali's largest coral reef conservation areas. The area is popular for snorkelling and diving, offering opportunities to explore vibrant coral reefs and diverse marine wildlife.
<b>KSPN Karangasem-Amuk dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Karangasem Regency</li> <li>• Kelungkung Regency</li> </ul>	This area is one of the most popular coastal tourism destinations, particularly renowned for water sports and snorkelling.
<b>KSPN Ubud dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Gianyar Regency</li> <li>• Badung Regency</li> <li>• Tabanan Regency</li> </ul>	Ubud is a renowned cultural tourism destination, recognised as the artistic and cultural heart of Bali. Situated in the island's rural highlands, Ubud also hosts annual events, including the Bali Marathon.
<b>KSPN Kuta-Sanur-Nusa Dua dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Badung Regency</li> <li>• Denpasar City</li> </ul>	Kuta, Sanur, and Nusa Dua form an urbanised coastal area in southern Bali, representing the island's most popular and developed tourism hub.
<b>KSPN Nusa Penida dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kelungkung Regency</li> </ul>	Nusa Penida is a small island located south of Bali, with surrounding waters renowned for diving, particularly for sightings of marine life such as the endemic Mola fish.
<b>KSPN Gili-Tramena dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• North Lombok Regency</li> </ul>	KSPN Gili-Tramena, also known as the Three Gili Islands, comprises three small islands renowned for their snorkelling and diving spots.
<b>KSPN Rinjani dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• North Lombok Regency</li> <li>• East Lombok Regency</li> <li>• Centre Lombok Regency</li> <li>• West Lombok Regency</li> </ul>	KSPN Rinjani refers to Mount Rinjani National Park, home to one of Indonesia's most popular hiking trails.
<b>KSPN Pantai Selatan Lombok dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Centre Lombok Regency</li> </ul>	Pantai Selatan Lombok is a coastal tourism destination in the southern part of Lombok Island. A key area, Mandalika, has gained prominence as the site of a newly built racing circuit and is designated as a national priority tourism destination.
<b>KSPN Moyo dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Sumbawa Regency</li> </ul>	Pulau Moyo is a tourism destination situated on a small island in the Flores Sea.
<b>KSPN Tambora dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Dompu Regency</li> <li>• Bima Regency</li> </ul>	Tambora is a national park in East Nusa Tenggara, home to Mount Tambora, the largest volcano in the province.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Komodo dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• West Manggarai Regency</li> </ul>	Komodo is an archipelago within Komodo National Park, serving as a sanctuary for the endemic Komodo dragon.
<b>KSPN Ende-Kelimutu dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Ende Regency</li> </ul>	This area comprises two main tourism zones. The first is Kelimutu National Park, home to Mount Kelimutu and its famous three-colour lakes. The second is the Ende Peninsula, which has developed as an important religious site.
<b>KSPN Waikabubak-Manupeu Tanah Daru dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Centre Sumba Regency</li> <li>• West Sumba Regency</li> </ul>	Waikabubak–Manupeu Tanah Daru is a tourism destination that includes Manupeu and Tanah Daru National Park, a habitat for rare bird species such as the Yellow-crested Cockatoo, Sumba Green Pigeon, Sumba Flycatcher, Sumba Cicadabird, and Sumba Hornbill. The area is also home to several local tribes, including the Wewena, Anakalang, and Lamboya communities.
<b>KSPN Alor-Kalabahi dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Alor Regency</li> </ul>	Alor and Kalabahi form an archipelago centred around two main volcanic islands, Pantar and Alor. The strait between these islands is a hub for marine tourism and coral reef conservation and serves as a natural habitat for the dugong.
<b>KSPN Nemberala-Rotendao dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Rote Ndao Regency</li> </ul>	Rote and Ndao are small islands located at Indonesia's southern border, home to the Rote community, whose livelihoods are closely tied to marine resources such as seaweed. Rote Island is also recognised as a water sports destination, popular for surfing and sailing.
<b>KSPN Sambas dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Sambas Regency</li> </ul>	Although Sambas is a coastal area, it is primarily recognised as a heritage site, notably associated with one of the largest Malay kingdoms in Borneo.
<b>KSPN Sentarum dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kapuas Hulu Regency</li> </ul>	Sentarum National Park protects a unique lake ecosystem and is home to the Bekantan monkey and the rare Red Arowana fish.
<b>KSPN Tanjung Puting dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kota Waringin Barat Regency</li> <li>• Seruyan Regency</li> </ul>	Tanjung Puting National Park, on the south coast of Borneo, is the region's most popular national park and the largest conservation area dedicated to the Bornean orangutan.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Long Bangun dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Mahakam Hulu Regency</li> </ul>	Long Bangun encompasses several traditional Dayak villages, with Rukun Damai and Long Bangun notably recognised as regional cultural conservation areas.
<b>KSPN Kota Bangun-Tanjung Isuy dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kutai Kartanegara Regency</li> <li>• Regency Kutai Barat</li> </ul>	Kota Bangun and the Tanjung Isuy area form a conservation zone encompassing a three-lake ecosystem, which is vital for the livelihoods of local villages and the Borneo forest ecosystem.
<b>KSPN Kayan Mentarang dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Nunukan Regency</li> <li>• Malinau Regency</li> </ul>	Kayan Mentarang is a national park-based tourism destination, characterised by its highland rainforest ecosystem. It is home to numerous rare species and traditional Dayak tribes, and is well known for adventure activities such as river rafting and hiking.
<b>KSPN Derawan-Sangkalaki dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Berau Regency</li> </ul>	Derawan is an archipelago located in the western waters off Borneo, renowned as a popular destination for snorkelling and diving.
<b>KSPN Lhoksado dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Hulu Sungai Selatan Regency</li> </ul>	Lhoksado is a conservation-focused tourism destination where activities highlight local livelihoods and traditions. One of its most popular attractions is wood raft tubing.
<b>KSPN Takabonerate dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Selayar Regency</li> </ul>	Takabonerate is an archipelago and marine national park located in the southern waters of Sulawesi Island (Celebes), renowned for its rich marine biodiversity.
<b>KSPN Toraja dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Tana Toraja Regency</li> <li>• North Toraja Regency</li> </ul>	Toraja is a rural area recognised as the homeland of the Toraja ethnic group. The community preserves its traditional way of life, evident in its distinctive houses, arts and crafts, and unique cultural ceremonies, most notably the cliff burials.
<b>KSPN Togean-Tomini dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Tojo Unauna Regency</li> </ul>	Togean and Tomini form an archipelago in the Tomini Gulf, popular for fishing, snorkelling, and diving. A unique attraction on Togean Island is Lake Mariona, which is home to non-poisonous jellyfish.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Gorontalo dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Gorontalo City</li> </ul>	Gorontalo City is one of the largest urban centres in northern Sulawesi. A historic city, it was once the centre of a prominent kingdom, played a significant role in Indonesia's liberation movement, and served as a key hub for the spread of Islam in eastern Indonesia. Situated on the coast, Gorontalo is also a popular destination for coastal tourism.
<b>KSPN Bunaken dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Manado City</li> <li>• North Minahasa Regency</li> </ul>	Bunaken is a renowned archipelago and one of Indonesia's oldest marine national parks. It is also one of the country's earliest diving destinations, celebrated for its rich and diverse marine biodiversity.
<b>KSPN Bitung-Lembeh dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Bitung City</li> </ul>	Kota Bitung is a coastal city in Sulawesi, situated along the Lembeh Strait. It serves as a key logistics harbour for northern Sulawesi, while the strait itself is renowned for snorkelling and diving, particularly its wreck diving sites.
<b>KSPN Tomohon-Tondano dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Minahasa Regency</li> </ul>	Tomohon and Tondano are highland rural areas near Manado, well known for Lake Tondano, the largest lake on Sulawesi Island. Tondano is also unique for being home to Indonesia's only Jewish community.
<b>KSPN Wakatobi dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Wakatobi Regency</li> </ul>	Wakatobi is a renowned marine tourism destination in Indonesia, popular for its vast marine biodiversity and world-class diving sites. The archipelago is also home to the Bajau people, often called the 'Sea Gypsies,' who possess a rich maritime culture.
<b>KSPN Morotai dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kepulauan Morotai Regency</li> </ul>	Morotai is a small island in northern Indonesia, known for its marine and coastal tourism attractions.
<b>KSPN Bandaneira dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Centre Maluku Regency</li> </ul>	Bandaneira is a small archipelago in the Maluku Sea, recognised as a marine tourism destination and a sanctuary for whale sharks.
<b>KSPN Raja Ampat dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Kepulauan Raja Ampat Regency</li> </ul>	Raja Ampat is an archipelago in northwest Papua, renowned as a premier destination for diving and snorkelling. It lies within the Coral Triangle, famous for its extraordinary marine biodiversity.

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<b>KSPN</b>	<b>Administrative Regions</b>	<b>Description</b>
<b>KSPN Cendrawasih dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Teluk Wondama Regency</li> </ul>	Cendrawasih, known as Cendrawasih Marine National Park, is an archipelago in the Cendrawasih Gulf, renowned for its rich marine biodiversity.
<b>KSPN Biak dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Biak Numfor Regency</li> </ul>	Biak is an archipelago in the Papua Sea, known not only for its natural beauty but also for its historical significance as one of the battlegrounds between the United States and Japanese forces during World War II.
<b>KSPN Sentani dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Jayapura Regency</li> <li>• Jayapura City</li> </ul>	Sentani is a vast lake located just outside Jayapura City. It is one of the largest lakes in Papua and plays a central role in the livelihood of the Sentani tribe, an indigenous Papuan ethnic group. Lake Sentani also hosts an annual cultural festival celebrating the traditions of the Sentani people.
<b>KSPN Agats-Asmad dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Asmat Regency</li> </ul>	Agast-Asmat National Park is home to Indonesia's highest peak, Lorenz Peak on Mount Jaya Wijaya. This peak is a prominent destination for adventure tourism, particularly mountaineering, and the park is also the only area in Indonesia featuring a glacier.
<b>KSPN Wazur-Marauke dan sekitarnya</b>	<ul style="list-style-type: none"> <li>• Marauke Regency</li> </ul>	Merauke is a notable city in Indonesia, marking the easternmost point of the country's territory. It holds historical significance, particularly in relation to Indonesia's struggle for independence.

## Appendix 19: The Evaluated Indonesia Regional Destination Websites

No.	City and Regency	Website
1.	Gayo Lues Regency	<a href="http://www.gayotourism.acehtengahkab.go.id/">http://www.gayotourism.acehtengahkab.go.id/</a>
2.	North Tapanuli Regency	<a href="https://dinaspariwisatataput.com/">https://dinaspariwisatataput.com/</a>
3.	Dairi Regency	<a href="https://visit.dairikab.go.id/">https://visit.dairikab.go.id/</a>
4.	Karo Regency	<a href="https://karotourism.travel/">https://karotourism.travel/</a>
5.	Bukittinggi City	<a href="https://visitbukittinggi.id/">https://visitbukittinggi.id/</a>
6.	South Lampung Regency	<a href="https://pariwisatalamsel.com/home">https://pariwisatalamsel.com/home</a>
7.	Pandeglang Regency	<a href="https://gopandeglang.com/">https://gopandeglang.com/</a>
8.	Jakarta Special Region	<a href="https://jakarta-tourism.go.id/">https://jakarta-tourism.go.id/</a>
9.	Lebak Regency	<a href="https://www.lebakunique.co.id/">https://www.lebakunique.co.id/</a>
10.	Magelang Regency	<a href="https://visitmagelang.id/">https://visitmagelang.id/</a>
11.	Yogyakarta Special Region	<a href="https://visitingjogja.jogjaprovo.go.id/en/">https://visitingjogja.jogjaprovo.go.id/en/</a>
12.	Wonogiri Regency	<a href="https://digitour.digips.id/">https://digitour.digips.id/</a>
13.	Pacitan Regency	<a href="https://www.pacitantourism.com/">https://www.pacitantourism.com/</a>
14.	Lumajang Regency	<a href="https://www.visitlumajang.com/">https://www.visitlumajang.com/</a>
15.	Jombang Regency	<a href="https://jombangtravel.id/">https://jombangtravel.id/</a>
16.	Banyuwangi Regency	<a href="https://banyuwangitourism.com/">https://banyuwangitourism.com/</a>
17.	Situbondo Regency	<a href="https://pariwisata.situbondokab.go.id/">https://pariwisata.situbondokab.go.id/</a>
18.	Jembrana Regency	<a href="https://pariwisata.jembranakab.go.id/">https://pariwisata.jembranakab.go.id/</a>
19.	Denpasar City	<a href="https://denpasartourism.com/">https://denpasartourism.com/</a>
20.	Kapuas Hulu Regency	<a href="https://digitaltourismkapuashulu.com/">https://digitaltourismkapuashulu.com/</a>
21.	Kota Waringin Barat Regency	<a href="https://web.visitkotawaringinbarat.id/">https://web.visitkotawaringinbarat.id/</a>
22.	Kutai Karatanegara Regency	<a href="https://www.visitmyborneo.com/">https://www.visitmyborneo.com/</a>
23.	Berau Regency	<a href="https://visitberau.id/">https://visitberau.id/</a>
24.	Tojo Unauna Regency	<a href="https://tourismtojounauna.com/">https://tourismtojounauna.com/</a>
25.	Manado City	<a href="https://www.wonderfulmanado.org/">https://www.wonderfulmanado.org/</a>
26.	Wakatobi Regency	<a href="https://www.wakatobitourism.com/">https://www.wakatobitourism.com/</a>
27.	Kepulauan Morotai Regency	<a href="https://wonderful.pulaumorotai.kab.go.id/">https://wonderful.pulaumorotai.kab.go.id/</a>
28.	Kepulauan Raja Ampat Regency	<a href="https://www.stayrajaampat.com/">https://www.stayrajaampat.com/</a>
29.	Tana Toraja Regency	<a href="https://www.visittoraja.com/">https://www.visittoraja.com/</a>

## Appendix 20: The DMS Stakeholders' Code Identifier

<b>Code</b>	<b>Description</b>
BM1	Banyuwangi tourism website management personnel (1)
BM2	Banyuwangi tourism website management personnel (2)
WM1	Wakatobi tourism website management personnel (1)
BC1	Tourism service provider personnel featured on the Banyuwangi tourism website (1)
BC2	Tourism service provider personnel featured on the Banyuwangi tourism website (2)
BC3	Tourism service provider personnel featured on the Banyuwangi tourism website (3)
BC4	Tourism service provider personnel featured on the Banyuwangi tourism website (4)
WC1	Tourism service provider personnel featured on the Wakatobi tourism website (1)
WC2	Tourism service provider personnel featured on the Wakatobi tourism website (2)
WC3	Tourism service provider personnel featured on the Wakatobi tourism website (3)

## Appendix 21: The Delphi Code Identifier

<b>Code</b>	<b>Description</b>
DP1	The Delphi panel participants (1)
DP2	The Delphi panel participants (2)
DP3	The Delphi panel participants (3)
DP4	The Delphi panel participants (4)
DP5	The Delphi panel participants (5)
DP6	The Delphi panel participants (6)
DP7	The Delphi panel participants (7)
DP8	The Delphi panel participants (8)
DP9	The Delphi panel participants (9)
DP10	The Delphi panel participants (10)
DP11	The Delphi panel participants (11)
DP12	The Delphi panel participants (12)
DP13	The Delphi panel participants (13)
DP14	The Delphi panel participants (14)