Examining the behavioral intentions of tourism destination communities: A critical approach to smart rural tourism information system

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ABSTRACT

This study aims to explain the behavior of tourist destinations communities toward the Smart Rural Tourism Information System (SRTIS). It reveals through their intentional behavior where the technological environment mediates the relation with their behavior to deliver the information. For this reason, we surveyed selected tourism destinations, where the respondent represented by various communities' group. The approach used Planned Behavior Theory to explain behavioral intention. Using the PLS application, we found that the technological environment affects the behavioral intention to convey tourist information. Furthermore, the intention to convey affects conveying information in SRTIS. The research results showed that various tourist destination communities are ready to share information in each destination. The technology environment supports it, communities cellular phone usage, as a mediation. So, encouraging communities to provide information in the system built will keep the destination sustainable. Hence, we suggest that the local government empower communities considered more to tourism resources and promote them.

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Introduction

The establishment of tourist destinations in Indonesia has become a trend since 2014 because of its significant impact on broader development. Abundant tourism resources support the Indonesian policy, so the government provides regular yearly funds. Hence, the Indonesian Government has developed five premium destinations: Lake Toba, Borobudur, Mandalika, Labuan Bajo, and Likupang since 2019. The primary strategy of these five destinations is to connect them to impact tourists staying in Indonesia (Thaib, 2019). The development of premium destinations is more based on market-driven based where market actors, hotels, travelers, tourists have promoted the destinations for they receive income directly.

At the same time, there is a trend of establishing rural tourist destinations with their unique potentials. The Communities, villagers, and stakeholders in local government consider potential villages to develop, and they are supported by a segmented tourist seeking a unique experience. However, the communities do not manage destinations well, or they do not consider DMMO (Destination Management and Marketing Organization) substance as the basis to work. So, consequently, the marketing model is more dependent on individuals' roles where actors are known as entrepreneurs (Adeyinka-Ojo et al., 2014). Such conditions coincide with problems faced by communities that have not determined service packages for tourists and do not have communication tools to customers.

Destination managers in such positions need a unique system to create and manage networks to benefit from the established networks (Volgger & Pechlaner, 2014). The system allowed communities to contribute all tourist resources updated.
Tourist visits tendency to rural destinations are increasing for many reasons: 1) perceive that villages are more environmentally friendly, 2) desire to repeat the romance that has occurred in one destination. Along with the growing use of the IoT (internet of things), people use the internet and other equipment to access and transact. This trend drives the 4.0 revolution, where one of the characteristics is the fast delivery of goods and services due to the availability of applications and internet networks. Accordingly, destination marketers and dan management should be familiar with technological progress and applications. Appropriate applications encourage marketers and others to design different destinations according to the context of various destinations (Buhalis & Foerste, 2015).

Efforts to optimize tourism resources are complex. The stakeholders: Bappeda (Regional Development Planning Agency), Hotels, Travel, Homestays, Village Governments, villagers, performers, heritage, and managers do not yet comprehend their respective roles. Additionally, tourist information is not well organized, and the communities also do not know how to convey information about each destination to make them competitive.

Accordingly, the Indonesian government considers promoting rural tourism to construct 100 thousand units to attract tourists and expect them to stay longer (Diahnisa, T&Rachman, 2017). However, the communities or the destination managers do not provide specific tourist information to each different destination, and consequently, the potential tourist has no information before they visit.

Establishing a unique information system is supported by the technology progressed, and it allows building an information system to integrate tourism needs in rural areas. A designer could integrate the open-source technology into another as the open-source technologies are available. Android, for example, can be combined with GIS to make one destination informed and link it with various physical facilities, including distance, homestay, and other facilities. In this case, even more so, managers can be involved, including managing the frequency of visits. This technology can be accessed using a tourist's mobile phone. Such an information system is called a Smart Information system, where the different communities can share the latest information about a destination (Li et al., 2017). Several authors add the substance of such an information system. (Gössling 2017) suggests continuous communication from a destination, and (Noguera et al., 2012) identified it as a hybrid based on 3D GIS, which can be used easily by tourists.

That information system could integrate tourist resources and create a network that provides benefits: 1) avoids competition between destinations but cooperates, 2) increase local community participation, and 3) the government will easily monitor developments in each destination. In general, that system will promote each destination on the one hand, but on the other hand, the local government could monitor the destination program to provide appropriate intervention.

As the technology progressed significantly, a system easily accessible by cell phone will make it easier for various destination managers to contribute tourist resources. This convenience device is supported by integrated applications, comparable, easy to use and updated, and will encourage stakeholders to be involved.

The existence of a free collaboration between Android and Google facilities prepares information that can be designed innovatively, describing the contextual conditions in each destination. The preparation of such an application is a vital intervention to promote tourism resources simultaneously so that people care about destinations, tourist visits increase, and the impact it causes can move tourism resources. Furthermore, this information system will encourage tourist destinations and SMEs to develop for SMEs, and others will provide information to promote themself.

So, the research question: how is the communities' behavior toward smart rural tourism in five districts: Kerinci, Merangin, Tanjabtimur, Tanjabbar, and Muarojambi. Examine the communities' intention behavioral on Smart Rural Tourism Information System; Explain the role of the Smart Rural Tourism Information System toward destination sustainability

**Literature Review**

**Conceptual Background**

**Destination development**

Tourist destinations show a geographical area, an administrative area in which there are tourist attractions (attractions), public facilities, tourism facilities, accessibility, interrelated communities, and complement the realization of tourism activities. Lane & Kastenholz (2015) underlined the importance of activities that provide memorable experiences, governance, leadership, networking, product development, and marketing. Attractions, both natural and handmade, differentiate from one destination to another. In China, for example, rural tourism is characterized by the concept of "Nong jia le" life in the countryside by serving food fresh fruits from their farms to every tourist (Su, 2011). In this regard, Streimikiene & Bilan (2015) put forward that rural tourism is a natural process from the supply side (tourism resources) in the form of endowments, transformed into products offered to tourists. In its development, the understanding of the destination is experiencing requirements. Since rural tourism occurs in villages, its activities are inseparable from tourism resources (tourism potential). The principle of sustainability becomes an essential requirement, social, economic, and environmental concern (Khartishvili et al., 2019; World Bank Group, 2017). The essential destination characteristics: all activities come from living in the countryside and are managed by the village communities. Accordingly, the role of an individual to
complement the community is vital. Bakas et al. (2019) mention the part of several artists to advance a destination, and Komppula (2014) notes the role of individuals in developing tourist destinations.

Furthermore, tourism in rural areas is managed by many stakeholders or communities that trust each other. Network hence is important where leadership has an important role, both formal and informal. It is needed to focus efforts to advance tourist destinations (Kellither et al., 2018). Zmys'lony (2014) mentions that the destination leadership role includes five dimensions of destination leadership, network capability, analytical ability, impact capability, economic potential, and legitimacy. The most influential stakeholders are characterized by: strong impact, analytical leadership abilities, and legitimacy in emerging destinations. Hence, Ho & Lee (2020) imply a common understanding, mainly because of different interests to integrate management.

Regarding the government's role, Liu et al. (2020) distinguish between provincial government and districts. The province suggests becoming the steering committee providing direction while districts provide services to tourists.

Smart Rural information system

In general, a system is a collection of people, rules, and devices intended to provide information. Its development is very dynamic, especially with the development of the internet, where various open-source applications could be integrated and offer new displays and outputs. Using IT, integrated with GIS (Geographic Information system) for tourism functions, prepares information, produces thematic packages, makes tourist references, and even becomes a tool to promote destination sustainability (Gössling, 2017; Nesticò & Maselli, 2020; Wei, 2012). Based on the service perspective, tourism resources are a collection of goods and services. Therefore, it must be delivered using various easy techniques and comfort to the user. The information system that is considered up-to-date can provide solutions to the needs of many parties is a GIS-based integrated with Android. With such considerations, an unique information system has a function to attract tourists to various destinations, and SRTIS can lead tourists to one destination, company, or institution of their own choice (Y. Li et al., 2017). Gössling (2017) requires the importance of a sustainable system, not only the content but also the context in which the community can deliver tourism resources more in line with their conditions. Noguera et al. (2012) argue the information needs of destinations by using mobile devices (HP) that combine 3D GIS technology. He also emphasized the importance of communities or tourists conveying information that demonstrates uniqueness and experience. Park et al. (2016) reported that in Korea, tourism actors use Facebook, but with a note that managers at the government level also use Facebook to interact with one another. Ritchie & Ritchie (2002) look more at the involvement of non-government in designing and managing a destination system for rural tourism. In line with it, the University Jambi Team establishes the SRTIS to initiate tourism promotion and community involvement. The system consists of text, pictures, position with GPS, video, and SMEs information and graph to show tourist visits.

It supports the Indonesian government's policy to digitalize rural tourism sources. Communities are responsible for updating information in the standard provided. Tourists or travelers hence could download and install from at this address http://wisata.unja.ac.id. So as long as the destination information's updated, tourists will benefit.

Research and Methodology

Research Method

We do several activities to conduct the survey. Firstly, the IT team of the University of Jambi prepared an SRTIS that integrates GPS, Android, Photos, Texts, and Video and delivers it to the communities to install. They are the respondents for they experienced using the system. Data gathering used a structured questionnaire and a google form in this address: https://docs.google.com/forms/d/e/1FAIpQLScj846trrwquOIGCIj_i9HdBBy88mczb-xsqizakJrADv107NA/viewform The research used a descriptive approach to describe the community's intention behavior. Data Processing. We used PLS 3.0 to get the statistical results, and in that way, we received the standard statistical procedure and outcome. FGD and observation. We conduct FGD with communities that start establishing new destinations to collect qualitative information and observe the way of communities using their cellular phone.

Population and sampling

The population is the tourist community five districts: 1) Kerinci, 2) Meraning, 3) Muaro Jambi, and 4) Tanjabtim and 5) Sungai Penuh. They are assumed to have technological devices, used mobile phones, and downloaded the SRTIS. Thus, the sample choice is based on judgment choice.

Result and Discussion

General

The tourist information system has not been a concern of both the provincial and district governments. In certain districts, a web is established, which is expected to prepare tourist information. However, the weaknesses are 1) the official does not address the information at the destination where the tourist should go, and 2) communities are not involved in updating the news. So, tourists do not benefit from the system. Accordingly, the University of Jambi initiated the hybrid system to inform any tourist resource. With
the development of the internet and technology, especially smartphones and people's attachment to the internet, it is easier for people to access their respective needs.

At the destination or village level, village officials establish a new institution called Bumdes (village-owned enterprises). It has business in several potencies, including tourism. Bumdes is responsible to the village officials, and they cooperate to manage and promote the destination. One of their needs is a system that could inform them and involve the communities.

**Distribution of frequencies**

General sample information we present in Table 1 below. Based on the seven positions of tourism actors (line 1), the respondents’ has dual parts are found. Furthermore, the age of the respondents (row two) is grouped into five intervals starting from the range of 16 years and 56 years. The age modus above shows that the respondent's age mode is in the age range of 16-25 years. Kotler, P. et al. (2020) identified them as generation Z who are literate with smartphones, tablets, internet-connected, game consoles, wireless internet, and digital and social media for granted. They are bound in a network that is ready to convey news from one place to another about one news item to their fellow men without stopping. This behavior is based more on the desire to deliver the information or get an intention, an impulse that comes and goes between them.

<table>
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<th>No</th>
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<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>1. Tourist guide</td>
<td>13</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>2. Gifts crafting</td>
<td>20</td>
<td>17.9</td>
</tr>
<tr>
<td></td>
<td>3. Homestay</td>
<td>8</td>
<td>7.1</td>
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<td></td>
<td>4. Bumdes Official</td>
<td>20</td>
<td>17.9</td>
</tr>
<tr>
<td></td>
<td>5. Agricultural producer</td>
<td>16</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>6. Government official</td>
<td>7</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>7. Village Official</td>
<td>16</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>8. Others</td>
<td>12</td>
<td>10.72</td>
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<td></td>
<td><strong>Total</strong></td>
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<table>
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<tr>
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<tbody>
<tr>
<td>1. 16 – 25</td>
<td>34</td>
<td>30.4</td>
</tr>
<tr>
<td>2. 26 – 35</td>
<td>21</td>
<td>18.8</td>
</tr>
<tr>
<td>3. 36 – 45</td>
<td>27</td>
<td>24.3</td>
</tr>
<tr>
<td>4. 46 – 55</td>
<td>21</td>
<td>18.8</td>
</tr>
<tr>
<td>5. 56 – 65</td>
<td>9</td>
<td>8.0</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>100</strong></td>
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<table>
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<tr>
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<td>3.6</td>
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<tr>
<td>2. Junior High School</td>
<td>11</td>
<td>9.8</td>
</tr>
<tr>
<td>3. Senior High School</td>
<td>61</td>
<td>54.4</td>
</tr>
<tr>
<td>4. Diploma</td>
<td>6</td>
<td>5.4</td>
</tr>
<tr>
<td>5. Graduate (S1)</td>
<td>24</td>
<td>21.4</td>
</tr>
<tr>
<td>6. Postgraduate (S2)</td>
<td>6</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>112</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Primary data, 2021*

**Statistical Examination**

Following the data processing procedure using PLS, we present the result below. The results of testing latent variables, attitudes towards the system, planned behavior mediated by the technological environment are shown in Figure 1.
Hypothesis examination

Using PLS has standard procedures and results of hypothesis examination (Monecke & Leisch, 2012; Noor Ardiansah et al., 2020). So, we present a hypothesis test with path analysis stages in Table 2.

Table 2: Path Analysis and P-values of the research hypothesis- communities behavioral

| Path                                      | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ($|O/STDEV|$) | P Values |
|-------------------------------------------|---------------------|-----------------|-----------------------------|-----------------------------|----------|
| Intention to deliver tourist information -> Behavior to deliver | 0.862               | 0.862           | 0.035                       | 24.317                      | 0        |
| Technology environment -> Intention to deliver tourist information | 0.781               | 0.776           | 0.059                       | 13.196                      | 0        |
| Planned behavior -> Technology environment | 0.477               | 0.448           | 0.173                       | 2.759                       | 0.006    |
| Attitude to information system -> Technology environment | 0.449               | 0.481           | 0.186                       | 2.412                       | 0.016    |

Source: Hypothesis test results with Path Analysis, 2021.

According to table 2, we examine the related hypothesis below.

H₃: The intention to convey tourism information has a positive effect on the behavior of sharing information is supported
H₄: The technological environment has a positive effect on the intention to share tourism information is supported
H₅: The planned behavior of sharing tourist village information affects the technological environment is supported
H₆: Attitudes towards information systems have a positive effect on the technological environment is supported

Conclusion

Information systems have a broad scope so that each organizational unit chooses to build a system that fulfills varied needs, responds to challenges, and follows their internal needs. Destination in the digital era is a challenge because each destination needs to digitize all tourism resources to offer (Noguera et al., 2012; Oliveira & Panyik, 2015). Noguera et al. (2012) explained that technological advances make one information system hybrid, a combination of various open devices which can be used simultaneously, like SRTIS. In the industrial era 4.0, one of the characteristics of the advancement of information systems is integrating them with GIS (Chang & Caneday, 2011).
A hybrid information system such as SRTIS is a solution with advantages: 1) the community manages it together, 2) each destination watch the progress of other destinations, and 3) stakeholders can follow the destination's performance and at the same time assess it. Technically, the community can operate the SRTIS if the Jambi University Management Team is authorized.

In addition, Li et al. (2017) emphasized the importance of smart applications; several applications could be used together in one device. Furthermore, Zhu & Wu (2016) differentiate the government functions on tourism industries; provincial government formulates the policy, and districts serve the tourists in the destination. It follows the principle of a destination that prioritizes the involvement of local communities who can collaborate with every attraction in the destination (Panyik et al., 2011). However, the development information system must consider the role of the community because it is they who serve and develop each destination. Their part is to inform rural tourism resources while at the same time building networks between destinations and between destinations in the district and even in other provinces.

In this case, innovation is needed to drive the management of tourism resources, homestay managers, and even new managers in rural tourism, namely Bumides (Chin et al., 2014; Ibrahim & Rashid, 2010; Rahmadanik, 2018).

Tourist destination's sustainability is determined by an information system that conveys all information: services, attractions, and the uniqueness of each destination. However, rural tourism destinations require intervention where each actor in the destination can share tourism resources comprehensively. Destination managers, in this case, can play an active role. In this information system project, ten tourist destinations have been prepared to allow them to be involved. The intervention of the local government and researchers (Universitas Jambi) is possible to train the community to improve the quality of information conveyed to potential tourists to be more representative.

Acknowledgment

Thank you to the Rector of the University of Jambi, who prepared funds to establish a smart rural tourism information system and (SRTIS) then encouraged the team to survey the community’s intention toward the system. This fund is prepared to support one of the University of Jambi Mission, digital transformation. We hope that this system can become part of the main tourism service in Jambi Province. All authors have read and agreed to a published version of the manuscript.

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Data Availability Statement: The data presented in this study are available on request from JHN. The data are not publicly available due to restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

Reference


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