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Conceptualisation of Hotel Guest Experience Assessment Process and Electronic Words of Mouth

Han Chao ¹, Basri Rashid²*

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²School of Tourism, Hospitality and Event Management, Universiti Utara Malaysia, Malaysia

Abstract

The success of a hotel depends on the guests’ interpretation and reviews of their visit experience. Guests who perceived their visit experience as worthiness and satisfactory would circulate their experience to their acquaintances. In today’s information based era, their visit experience can be widely circulated through electronic word of mouth (e-wom) such as the social media. This paper aims to construct a research framework to study hotel guests experience responses as the result from their encounters with the hotel’s products and services during their stay. Unforgettable encounters would influence the guests’ future behaviour, starting with their commitment and eventually translated into reaction in the forms of electronic word of mouth responses. Methodically, an exhaustive review of the literature was carried out to establish a theoretical underpinning of hotel guests experience assessment process and their future responses. Perceived value and satisfaction are deemed as important measurements in the initial stage of the hotel guest visit experience outcomes. In line with the current information technology trends, the guests are expected to use electronic word of mouth to disseminate their visit outcomes. Academically, the study framework reduces the gaps related to the formulation of research constructs for hotel visit experience assessment. It is assertive that this paper would be practically beneficial to hotel operators or relevant stakeholders in order to gain a comprehensive understanding about hotel guests’ visit experience responses and their future behaviour, including the electronic word-of-mouth response.

Keywords: Commitment, electric word-of-mouth, hotel, perceived value, post visit responses, satisfaction.

INTRODUCTION

When hotel guests visit a hotel, they are exposed to the various products and services at the hotel. The hotel guests’ experience then is determined whether these products and services can meet their needs and wants. Ideally, the overall experience is noted as the performance of the hotel staff, products, services, and hotel facilities, as well as the benefit gained by the guests from the performance. The outcome of this experience shall then influence their future responses.

Past research indicated that the customer experience assessment is a very complex process, and it is difficult to measure directly. However, the literature points out that perceived value would be a realistic component to initially measure customer responses. In this paper, it is asserted that perceived value can help the hotel analyse the overall experience of the hotel’s guests and understand their behavior. Therefore, by understanding the guests’ perceived value, hotels can provide a better experience to their guests by offering products, facilities, and services that meet their requirements.

Another important result of the visit experience is satisfaction. Past studies pointed out that perceived value is the antecedent of satisfaction. Thus in this paper, it is postulated that perceived value will influence satisfaction. In addition, customers frequently disseminate their experience to others through various mediums, and with the advancement of communication technology, social media is a common and convenient method of disseminating information. Those who are committed to this type of media would update their information regularly. Hence, the whole picture of guest experience process can be depicted through the relationship among perceived value, satisfaction, commitment, and electronic word-of-mouth. In other words it is foreseen that perceived value influences satisfaction and commitment in which ultimately affect hotel guests’ electric word-of-mouth.

HOTEL GUEST’S EXPERIENCE

This segment reviews past studies that are related to customer post-consumption experience and relate them to the hotel guests’ experience responses. Discussions are focused on the relevant constructs that lead to the formation of a research framework. Specifically, this section reviews related variables namely;
perceived value, satisfaction, commitment and electronic word-of-mouth, and the relationship among all these variables.

A. Perceived Value

A hotel can provide customers with acceptable products or services only if the needs and wants of the customers are fulfilled. The emphasis should be on the value delivery during the interaction between the customer and the operator [1]. As a result, the customers would feel they have received the value from what they have spent on. Past studies pointed out that perceived value plays an essential role to reflect the hotel guest’s comprehensive experience and hotel guest behavior.

Perceived value is defined as the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given [2]. It translates perception as a whole unit, rather than just an emotion. This Perceived value definition extended as the customer’s overall assessment of the net worth, which is derived from the customer’s assessment of benefit they gained in relation to their participation with the services, products, and activities that also consume time, money, and energy [3]. Similarly, perceived value is a comparison of benefits, costs, and usually occur during the purchase of related products or services [4]. In addition, perceived value can be seen as the difference between the total benefits and the total costs experienced by hotel guests [5]. The total benefits are a combination of the corresponding attributes, for example, physical attributes and service attributes [6]. The total costs include monetary provisions [7] and non-monetary provisions [8].

However, researchers have disputes about the concepts of one-dimensional and multi-dimensional of perceived value. The first proposed the concept of price-perceived value one-dimensional, which is based on the monetary value dimension [2]. The one-dimensional is also used to measure the customer’s overall value [9]. However, this measurement cannot reflect the viewpoint, which many researchers asserted perceived value is the trade-off between benefits and sacrifices, and it caused the one dimensional evaluation to receive less attention in the research community. Since every person has its own personality and characteristics, which results in various perceptions of customers towards the hospitality of each hotel, it is not adequate to explain the perceived value using a one-dimensional (monetary value) approach [10].

Numerous other researchers are devoted towards the study of multi-dimensional aspects of perceived value. For example, four dimensions of perceived value: emotional value; social value; functional value (monetary); functional value (quality), as a more comprehensive measurement of perceived value [11]. On the other hand, perceived value is divided into five dimensions: quality, emotional response, monetary price, behavioral price, and reputation [12]. The four dimensions of perceived value represent the views of SER-PERVAL and the five dimensions of perceived value represent the views of SER-PERVAM, the difference between them is that four dimensions of perceived value divided monetary value into two dimensions: monetary price and behavioral price, and suggested reputation take the place of social value. Overall, the validity and reliability of multi-dimensional perceived value have been confirmed [9], thus the multiple dimensional evaluation method is considered better than the single-dimensional evaluation method to explain the perceived value.

In order to attract new hotel guest or maintain the relationship with customers, hotel operators need to predict the guests’ future behavior based on perceived value [1]. In this case, the guest’s perceived value is based on the consumption of relevant products and facilities of the hotel that may influence guests’ visit outcomes, namely satisfaction, commitment, and E-WOM. This statement is reasonable because many researchers have proved that customer perceived value can affect customer satisfaction and commitment [13,14,15]. Furthermore, customer experience and satisfaction can be used as a precedent for their future intentions [16,17,18].

B. Satisfaction

The main difference between perceived value and satisfaction is their occurrence time [19]. Perceived value can occur at a different stage of a purchase. However, satisfaction occurs at the post-stage of purchase. Hence based on past studies, it is asserted that satisfaction can be an outcome of perceived value [20,21,22].

Researchers have applied customer satisfaction theory to various service industries to investigate the applicability of customer satisfaction, including the hotel industry [23], the foodservice industry [24], and the tourism
industry [25]. Customer satisfaction defined as a result of high expectation towards the service provided [26]. This classical definition is based on the expectancy-disconfirmation theory (EDT), which has attracted the attention of many scholars and dubbed as the most widely used theory of customer satisfaction [26,27].

However, this theory has been challenged in various studies. Some researchers pointed out that there are some deficiencies in both the theoretical and operational aspects of the EDT. For example, excessive information might increase customers' expectations towards the service, compared to the expectation they had before [28]. When the hotel operator overstated advertising claims, the customer's expectations will be high. As a result, the customer will feel dissatisfied even with a high-quality service or product.

The measurements of satisfaction by expectancy-disconfirmation paradigm may only materialize if the consumers have expectations for related products and services before consumption [29]. In fact, it would be inappropriate to evaluate the hotel guest's satisfaction because whenever the customer is relatively unknown or unfamiliar with relative products and services of the hotel, they would have no pre-expectation of any such services.

Six alternative models were used to compare and examine the relative validity of these models to measure customers’ satisfaction [19]. The models are performance only, importance-performance, importance minus performance, direct confirmation-disconfirmation, confirmation-disconfirmation weighted by importance, and performance minus predictive expectation. It was concluded that the performance model offers a better framework for measuring customer satisfaction. Various other studies confirmed the advantages of using a performance-only model to study satisfaction. Therefore, perceived performance is the best predictor of satisfaction when it is difficult to measure the expected value [19,30-33]. In addition, satisfaction can be regarded as the customer’s attitude towards service providers and conceptualized as an overall outcome of judgment [15].

Numerous researchers pointed out that satisfaction has a direct positive impact on commitment [34,35,36]. The influence of satisfaction on commitments has created a tendency that the customer will recommend the service provider to other consumers or create a preference for the service provider on the next purchase.

**C. Commitment**

The importance of the relationship in the service marketing field has been confirmed by many scholars, and this is often based on the mutual commitments of buyers and sellers [37]. The key to maintaining this relationship is when the customer has achieved a valuable experience, and the seller has made every effort to maintain and develop this relationship between them and the customer [6]. The widely accepted definition of customer commitment by academics is that trading partners who are willing to maintain a lasting and important relationship [38,39]. Therefore, commitments are a kind of psychological emotion, which forms between two or more business partners. It also reflects the continuity of the business.

There is no unified recognition of the structural model of commitment. Some researchers pointed out that commitment is a multidimensional structure that includes affective and calculative or continuance commitment [40,41]. Affective commitment is a combination of emotions that reflects the consumer’s sense of participation and belonging to the service [40,42]. When continuance commitment occurs, consumers are forced to commit to the sales of organization because the termination of this bond may result in loss and sacrifice in business (economic or social sacrifice) [43].

In the marketing relationship, when the conversion cost is low, the consumers are given the freedom to choose many types of samples and items from the sales. However, when consumers are unfamiliar or neither purchased the product nor service, continuance commitment may not occur. Therefore, when commitment is primarily defined as affective commitment, it resolves as a better understanding of premises and thus a good analysis of emotional commitment [38]. Hence, many researchers suggest using a one-dimensional structure to measure commitment in a social-business bond.

In the vast majority of commitment-related marketing research, affective commitment is the one-dimensional structure measurement of commitment [44]. Affective commitment occurs when there is a consumption relationship between consumers and organizations [45]. Customer commitment aims to maintain a good
and reputable relationship with the organization, while affective commitment can represent the customer’s commitment [46]. Affective commitment is rooted in identity, which represents the nature of the customer’s assurance [47].

There is a positive relationship between the commitment of the organization and the future intention of consumers [38]. The positive effect of commitment on word-of-mouth was recognized by scholars [48,49,50]. The positive E-WOM will only arise when satisfaction translates into a commitment because the commitment leads to the willingness of the marketer and the buyer to maintain the behavior of partnerships [23].

D. Electronic Word-Of-Mouth

In recent years, due to the advancement in communication technology, numerous social media are freely available. This electronic communication platform has resulted in the widespread of information. The user-generated related content is the basis of social media, resulting in the creation of the term “electronic word-of-mouth” (E-WOM) [51].

Generally, word-of-mouth (WOM) defined as an informal communication of consumers about specific products or services [52], which is regarded as one of the most important sources of information by customers. Electronic word-of-mouth (E-WOM) can be defined as all informal communications to consumers through web-based technologies. Nowadays, customers can post their thoughts, ideas, and feelings about products and services online by sending emails or writing articles on blogs [53]. The impact of E-WOM towards decisions made by customers may be greater than the impact of traditional word-of-mouth. The E-WOM expands the customer's choice of collecting information about products and services from other customers. In other words, the electronic environment is an innovative and convenient place to collect the required information. Therefore, E-WOM plays an important role in purchasing today's consumption.

In the tourism industry, travelers are increasingly turning to E-WOM for support towards their traveling plans and travel-related decisions [54]. E-WOM influences tourists’ visit intention and points out that E-WOM provides travelers with more travel-related information and has a convincing influence on travelers' tour choices and behavior [55].

In the hotel industry, the relationship between E-WOM and consumers’ online purchases seemed to be stronger than the tourism industry [56]. Positive online reviews improve the perception of hotels among potential consumers [57]. Moreover, the intangible nature of the experience intensifies the uncertainty of consumers, which motivates them to search for relevant information and increases their dependence on electronic word-of-mouth. The hotel guests showed significant interest in E-WOM [58]. Therefore, electronic word-of-mouth may greatly influence the hotel guest behaviour.

RELATIONSHIP AMONG THE VARIABLES

As deliberated in the preceding sections, this paper asserts that perceived value can be used in the overall assessment of the effectiveness of a product (or service) after the consumer experiences the process of related products and services. Satisfaction is presumed to be affected directly by perceived value. Nonetheless, perceived value is also one of the important factors affecting guests’ commitment [59,60]. However, the literature also established the relationship between satisfaction and commitment, thus making satisfaction a mediator variable between perceived value and commitment [38,44,61]. Therefore, this paper proposes a research framework for the hotel guest experience assessment process, as depicted in Figure 1.

![Figure 1. Research Framework](image)

The framework shows that the variables under study are perceived value, satisfaction, commitment, and E-WOM. It examines the impact of hotel guests’ perceived value on satisfaction and commitment. Commitment, in return, affects guests’ E-WOM. In terms of classification, perceived value is an independent variable, while satisfaction can be seen as a moderator between perceived value and commitment. The effect of E-WOM can be measured directly and indirectly through the three variables; perceived value, satisfaction, and commitment.

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[Han & Rashid] Conceptualisation of Hotel Guest Experience Assessment Process and Electronic Words of Mouth (Han & Rashid)
CONCLUSION
This paper suggests that customer experience is a result of a comprehensive post-consumption assessment of perceived value responses. This assessment method is deemed applicable to the hotel industry. At the initial stage, the guest experience evaluation, perceived value, and satisfaction that play a very important role to generate guests’ commitment. Ultimately, the guests are expected to use electronic word of mouth to disseminate their visit outcomes. Theoretically, the framework reduces the gaps related to the formation of research constructs for hotel visit experience assessment. Practically, the framework is beneficial to hotel operators or relevant stakeholders to gain a comprehensive understanding of hotel guests’ visit experience responses and their future behavior, including the electronic word-of-mouth response. Nonetheless, the framework should be tested to confirm its robustness.

REFERENCES


Journal of Travel and Tourism Marketing 30(8), 755-785.


Push and Pull Motivations on Halal Tourism

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Department of Business Administration, Politeknik Negeri Medan, Indonesia

Abstract

The purpose of this study was to examine empirically the causal relationships among push and pull travel motivations, destination image, and tourists’ travel satisfaction on halal tourism. The research conceptual framework and hypotheses were constructed, based on previous theoretical and empirical studies. A questionnaire survey was conducted with 200 respondents to collect the primary data. Multiple regression and Path Analyses were conducted to test the research hypotheses. As a result, push and pull factors had directly positive influences on tourist’s travel satisfaction. Besides, the results also showed that push and pull factors were slightly indirect effect tourist's travel satisfaction through the halal destination image. Consequently, local government and business organizations working in the tourism sector should pay attention to the essential roles of push and pull factors. To attract more potential visitors and improve their satisfaction, enhance their perceived on halal destination image by doing the facility improvement and marketing activities are the compulsory actions.

Keywords: destination image, halal tourism, motivation, push and pull, travel satisfaction.

INTRODUCTION

Halal tourism becomes one of the faster-growing sectors of the global travel industry [1]. No alcohol, no pork, separate swimming pools for men and women, prayer facilities, and the other provisions based on the Muslim belief in the tourism facilities and services are needed in halal tourism. The performance of halal tourism began to rise in Muslim and non-Muslim countries. Although the concept of Halal tourism exclusively designed by Muslim roles, it inclusively covers the services for all, including non-Muslim travelers. In addition to the good servicing practices, the core of halal tourism emphasizes the principles of shariah-compliant aspects in both tourism management and services [2].

In 2018, there were 140 million international Muslim travelers, according to the latest Global Muslim Travel Index for Mastercard and Crescent Rating. By 2026, the segment is predicted to grow to 230 million people, forecasted $300 billion into the global economy [3]. This huge number of tourists need information, of course, about halal services and facilities at destinations to simplify their journeys.

Despite having five official religions and hundreds of ethnic groups, Indonesia has the largest Muslim population in the world that contributes 12.7% of the world’s Muslims. According to a report, approximately 222 million people, or 87% of its population are Muslims [4]. In Indonesia, the tourism sector as one of the primary income sources for GDP (Gross Domestic Product). Therefore, understanding of Halal tourism concept and apply it in the Indonesian Tourism sector is expected to increase the national income. Knowing the needs of domestic and international tourists in Halal tourism is an urgent matter to recognize the tourists’ concept of halal tourism. The study about motivations and destination image and tourist travel satisfaction is the obligatory process to understand tourists’ needs and satisfaction in halal tourism.

Halal Tourism

Halal tourism is an umbrella term for tourism activities and products, includes Halal food, Halal Airlines, and Halal or Shariah-compliant Hotels [5]. It has economic, socio-cultural and religious aims as the revival of Islamic cultures and the spread of Islamic values, the economic benefit for Islamic societies, the strengthening of Islam self-confidence stereotyping in comparison to other cultures and lifestyles [6]. The definition focuses on Islamic law and its requirements to meet the tourist needs but ignored the religion of tourists (Muslims) and other dimensions [7].

Halal tourism is one of the new phenomena that emerged from the growth of the Halal industry. As Halal matters advancing the tourism industry, many Muslim and non-Muslim countries are set to capture the Muslim tourists’ market by providing tourism products, facilities, and infrastructures to cater to their needs [8].

Travel Motivation

Travel motivation is the fundamental reason for the traveling behaviour and plays a vital role...
in understanding the decision-making process of tourists [9]. It has drawn increasing attention from the travel industry and motivates Indonesian tourists to undertake Halal tourism activities during their stay. The push-pull theory has been widely applied to tourism research, and specifically to traveler motivations. The theory provides a framework for examining customers’ motivations for choosing to visit specific locations by analyzing two aspects: factors that push customers into making decisions via internal forces and factors that pull customers to choose desired locations via external forces, such as the attributes of the destination [10].

Some common push factors found in many studies include situational factors [11], socio-psychological factors (escape from routine everyday life, relaxation, exploration, social interaction, relationship enhancement, prestige), novelty-seeking, cultural experience, and escape [12,13]. Pull factor characteristics refer to place as a tourism product that defines a destination: static factors (scenery, cities, climate, wildlife, historical, and local cultural attractions); dynamic factors (accommodation, food, entertainment, access, political condition, and trends in tourism); and information such as marketing and advertising [13,14]. Push and pull travel motivations are not independent, but related to each other, push factors to refer to individual and pull factors pull tourists to visit the destinations [15,16]. Tourist motivation not only exerts influence over the choice of destinations but also over satisfaction [17].

Destination Image and Satisfaction

Destination image defined as an expression of knowledge, impressions, prejudices, imagination, and emotion and individual has of a specific place. In terms of impressions, regarding the fact that they may be true or false, real or imagined [18]. The destination image formation acts as the influence of the image on tourist satisfaction. It is important to gain a better understanding of tourists’ perceptions of destination image, why they are loyal to a destination, and why it drives loyalty. One of the key elements of destination marketing success is tourist satisfaction because it influences the choice of destination [19,20]. A significant relationship occurs between tourist involvements, place attachment, and satisfaction [21].

Tourists’ travel satisfaction is the extent of overall pleasure or contentment felt by the visitor, resulting from the ability of the trip experience to fulfill the visitor’s desires, expectations, and needs about the trip [20]. Tourist satisfaction is one of the prime variables to sustain competitive business in the tourism industry because it affects the choice of destination, consumption of products, and services [22]. The evaluation of tourist satisfaction is generally a direct measurement of its overall satisfaction with the destination experience; few studies involving satisfaction with destination attributes or combining a variety of common satisfaction models [17].

Various concepts explained the tourist’s travel satisfaction in direct and indirect influences. Figure 1 illustrates the proposed hypothetical model in this study.

![Figure 1. The Proposed Model](image_url)

**Figure 1. The Proposed Model**

**Description:**

**PUSH:** Push factor, **PULL:** Pull factor, **DI:** destination image, **TRA:** travel satisfaction.

- **H1**: Push factor is positively and directly affect halal destination image
- **H2**: Pull factor is positively and directly affect halal destination image
- **H3**: Halal destination image is positively and directly affect tourists’ travel satisfaction.
- **H4**: Push factor is positively and directly affect halal destination image
- **H5**: Pull factor is positively and directly affect tourists’ travel satisfaction
- **H6**: Push factor indirectly affects tourists’ travel satisfaction through halal destination image
- **H7**: Pull factor indirectly affects tourists’ satisfaction through tourists’ destination image

**MATERIAL AND METHOD**

A structured interview utilized to gather basic information about Indonesian tourists from Medan. This instrument provides primary pertinent information to develop the questionnaire survey. The survey questionnaire was used as the main data gathering instrument for this study based on structured interviews and previous literature. After the development of the survey questionnaire, the pilot test was conducted with a validity and reliability study to examine the construct of the questionnaire.
The items of the questionnaire were based on literature reviews. The questions were in the form of five-scale Likert statements from 'strongly disagree' to 'strongly agree'. The instrument of the study was developed based on the review of related literature on Push and Pull motivation factors, destination image, and travel satisfaction. About twenty-four Likert scale questions in the questionnaire to help this study to get an overview of the research question divided into three categories: push and pull motivation, destination image, and travel satisfaction.

**Data Collection**

This study will use descriptive and causal research design and mainly applied a quantitative approach to examine the effects between variables. The descriptive method was used to describe the profile of Indonesian tourists in Medan city, collecting data through a questionnaire to answer the question concerning the motivation factors and travel satisfaction. The survey was delivered and collected online through Google form and offline and conducted from October to November 2019.

The questionnaire distributed to Indonesian Muslim tourists who stay in Medan and wish to travel for Halal tourism purposes. One of the reasons Medan is selected because it has international airports that offered international flights to different countries. This study used purposive sampling with total respondents was 200 people of Medan.

### Table 1. Socio-demographic profile of the respondents

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<th>Socio-Demographic</th>
<th>Frequency</th>
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<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49</td>
<td>24.7%</td>
</tr>
<tr>
<td>Female</td>
<td>151</td>
<td>75.3%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-15</td>
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<td>0%</td>
</tr>
<tr>
<td>16-21</td>
<td>102</td>
<td>51.1%</td>
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<tr>
<td>22-27</td>
<td>63</td>
<td>31.7%</td>
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<tr>
<td>≥28</td>
<td>34</td>
<td>17.2%</td>
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<tr>
<td><strong>Education Level</strong></td>
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<tr>
<td>Junior High School</td>
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</tr>
<tr>
<td>High School</td>
<td>9</td>
<td>45.9%</td>
</tr>
<tr>
<td>Diploma</td>
<td>46</td>
<td>23.2%</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>62</td>
<td>30.8%</td>
</tr>
<tr>
<td><strong>Number of Visit</strong></td>
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<td></td>
</tr>
<tr>
<td>One time</td>
<td>6</td>
<td>3.2%</td>
</tr>
<tr>
<td>Two times</td>
<td>6</td>
<td>3.2%</td>
</tr>
<tr>
<td>Three times</td>
<td>4</td>
<td>1.6%</td>
</tr>
<tr>
<td>≥24 times</td>
<td>184</td>
<td>91.9%</td>
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</table>

As shown in the Table 1, the distribution according to the gender of respondents showed that 24.7% were males and 75.3% females. More than half of respondents (51.1%) were 16-21 years old, 31.7% were 22-27 years old, and 17.2% of respondents had 28 years and above. The results of 200 respondents' recent education indicated that 45.9% of them were in high school, 30.8% were bachelor's degrees, and 23.2% of respondents were students in diploma. By analyzing the number of visits as a tourist, it was determined that most respondents had traveled as tourists to different destinations more than four times (91.9%).

Data received from the survey were processed by using the IBM SPSS (Statistical Package for the Social Sciences) statistical software version 22.0 to analyze the data. The reliability test used to ensure the indicators were reliable. To achieve scale stability, Exploratory Factor Analysis (EFA) was used for scale development and to identify underlying constructs. For this study, two exploratory factor analyses (EFA) conducted with Kaiser-Meyer-Olkin and Bartlett's test of sphericity and Varimax rotation. The KMO measure of sampling adequacy for both groups of independent (KMO=0.711) and dependent variables (KMO=0.500) was greater than the minimum value for a good factor analysis 0.50 [23]. Also, Bartlett's test of sphericity was significant (Sig.=.000), indicating the sufficient correlation between the variables.

Almost all the factor loadings meet the minimum requirement except for several independent variables: ‘Halal destination is known as the clean place’ (0.484), ‘I prefer to visit destinations which have many tourists’ attractions’ (0.481), ‘I like to visit historical tourist’s destination’ (0.451) and one dependent variable: ‘I will be satisfied if the tourists’ destination is safe ’ (0.358). The items that met the minimum requirement were included in further processes. Regression and Path Analysis conducted to identify the interrelationship among variables to confirm the research hypotheses. Subsequently, Multiple Regression and Path Analysis were used to explore the causal relationships among variables and then conclude in the research hypotheses.

### Descriptive statistics of the constructs

Refer to Table 2, items concerning Push Factors such as ‘psychological factors’ (PSY1), ‘static factors’ (STAT1), and ‘dynamic factors’ (DYN3) were among the highest mean values (4.55±0.646, 4.60±0.656, 4.34±0.872, respectively). The results suggested the importance of many halal destinations offered to explore with natural and cultural attractions, and the respondents were looking forward to having halal facilities while traveling (4.22±0.957).
At the EFA stage, items with a loading factor of ±0.5 retained and grouped into factors. Besides, Bartlett’s test of sphericity was significant (Sig.=.000), indicating the sufficient correlation between the variables. As shown in Table 2, one push motivation factors (SIT3) and two pull motivation factors (STAT2 and STAT3) pulled out of the sample set. Dependent variables, which were Destination Image (DI) and tourists’ Travel Satisfaction (TSA), have four and six items. A congeneric factor with two items can be considered as the factor that has a significant relationship with any other factor [24]. All of the totals of 25 items retained, respectively.

Table 3 presents the items about Destination Image and tourists’ travel satisfaction. DI2, DI4, and all the TSA items were among the highest mean values, except TSA5 (0.538±0.358). Prayer place, halal facilities in accommodations, and friendly societies are the important factors in destination image and tourists’ travel satisfaction.

### Table 2. Mean scores, Standard Deviation, EFA, and Reliability of Push and Pull Motivators

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Factor Loading</th>
<th>Cronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Push Motivation Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIT1 Want to visit halal destination</td>
<td>4.00</td>
<td>1.065</td>
<td>0.656</td>
<td>0.845</td>
</tr>
<tr>
<td>SIT2 The halal destination is known as the safest place</td>
<td>4.08</td>
<td>0.958</td>
<td>0.632</td>
<td>0.845</td>
</tr>
<tr>
<td>SIT3 The halal destination is known as the clean place</td>
<td>3.85</td>
<td>0.982</td>
<td>0.484</td>
<td>0.845</td>
</tr>
<tr>
<td>PSY1 I like to travel to new places</td>
<td>4.55</td>
<td>0.646</td>
<td>0.517</td>
<td>0.620</td>
</tr>
<tr>
<td>PSY2 I like to meet new people</td>
<td>4.06</td>
<td>0.937</td>
<td>0.598</td>
<td>0.620</td>
</tr>
<tr>
<td>PSY3 I love to explore the new cultural experimental</td>
<td>4.12</td>
<td>0.838</td>
<td>0.659</td>
<td>0.620</td>
</tr>
<tr>
<td>PSY4 I always want to travel to halal destinations</td>
<td>3.84</td>
<td>1.202</td>
<td>0.713</td>
<td>0.620</td>
</tr>
<tr>
<td>PSY5 I believe halal tourism keeping me feel comfortable</td>
<td>4.01</td>
<td>1.032</td>
<td>0.715</td>
<td>0.620</td>
</tr>
<tr>
<td><strong>Pull Motivation Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT1 I prefer to visit the beautiful natural attractions</td>
<td>4.60</td>
<td>0.656</td>
<td>0.634</td>
<td>0.807</td>
</tr>
<tr>
<td>STAT2 I prefer to visit destinations which have many tourists’ attractions</td>
<td>3.82</td>
<td>0.843</td>
<td>0.481</td>
<td>0.807</td>
</tr>
<tr>
<td>STAT3 I like to visit historical tourist’s destination</td>
<td>4.01</td>
<td>0.889</td>
<td>0.451</td>
<td>0.807</td>
</tr>
<tr>
<td>DYN1 I prefer to visit destinations that offer halal facilities</td>
<td>4.22</td>
<td>0.957</td>
<td>0.569</td>
<td>0.807</td>
</tr>
<tr>
<td>DYN2 Halal food is the main reason to visit the tourist’s destination</td>
<td>4.20</td>
<td>0.975</td>
<td>0.698</td>
<td>0.807</td>
</tr>
<tr>
<td>DYN3 I want to visit destinations if offer many prayers places</td>
<td>4.34</td>
<td>0.872</td>
<td>0.584</td>
<td>0.777</td>
</tr>
<tr>
<td>DYN4 I want to visit a halal destination because of friends and relatives</td>
<td>3.97</td>
<td>0.805</td>
<td>0.566</td>
<td>0.777</td>
</tr>
<tr>
<td>INF1 Magazines and newspapers wrote many interesting halal destinations</td>
<td>3.76</td>
<td>0.942</td>
<td>0.703</td>
<td>0.868</td>
</tr>
<tr>
<td>INF2 I want to visit a halal destination because of social media reviews</td>
<td>3.83</td>
<td>0.950</td>
<td>0.750</td>
<td>0.868</td>
</tr>
<tr>
<td>INF3 I want to visit halal tourism because of the travel agent’s promotions</td>
<td>3.66</td>
<td>1.039</td>
<td>0.682</td>
<td>0.868</td>
</tr>
</tbody>
</table>

### Table 3. Mean scores, Standard Deviation, EFA, and Reliability of Destination image and Satisfaction factors

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Factor Loading</th>
<th>Cronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived Destination Image</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DI1 My concern is halal facilities</td>
<td>4.18</td>
<td>0.795</td>
<td>0.577</td>
<td>0.807</td>
</tr>
<tr>
<td>DI2 Fast and easy access to the prayer place</td>
<td>4.34</td>
<td>0.764</td>
<td>0.713</td>
<td>0.807</td>
</tr>
<tr>
<td>DI3 The security concern in halal destinations is my purpose</td>
<td>4.48</td>
<td>0.720</td>
<td>0.545</td>
<td>0.807</td>
</tr>
<tr>
<td>DI4 Review and news lead me to halal destinations</td>
<td>4.20</td>
<td>0.786</td>
<td>0.616</td>
<td>0.807</td>
</tr>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSA1 The access to the halal destination is easy and reachable</td>
<td>4.44</td>
<td>0.711</td>
<td>0.659</td>
<td>0.807</td>
</tr>
<tr>
<td>TSA2 I will be satisfied if the halal facilities offered by the accommodations</td>
<td>4.39</td>
<td>0.739</td>
<td>0.734</td>
<td>0.807</td>
</tr>
<tr>
<td>TSA3 I will be satisfied if many restaurants around the halal destinations</td>
<td>4.41</td>
<td>0.762</td>
<td>0.670</td>
<td>0.807</td>
</tr>
<tr>
<td>TSA4 I will be satisfied if the affordable price for halal tourism offered</td>
<td>4.62</td>
<td>0.629</td>
<td>0.574</td>
<td>0.807</td>
</tr>
<tr>
<td>TSA5 I will be satisfied if the tourists’ destination is safe</td>
<td>4.72</td>
<td>0.538</td>
<td>0.358</td>
<td>0.807</td>
</tr>
<tr>
<td>TSA6 I will be satisfied if the people in the halal destination are tourists’ friendly</td>
<td>4.48</td>
<td>0.760</td>
<td>0.722</td>
<td>0.807</td>
</tr>
</tbody>
</table>
RESULT AND DISCUSSION

Pearson’s Correlation Analysis and Linear Regression Analysis were applied to find out the relationship among variables. Table 4 illustrates the positive correlations between Push and Pull as independent variables, the mediate variable (Destination Image), and the dependent variable (tourists’ Travel Satisfaction). This means that the stronger Pull and Push travel motivations the travellers had, the higher the Destination Image and Travel Satisfaction degree.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push</td>
<td>0.492</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pull</td>
<td>0.570</td>
<td>0.584</td>
<td></td>
</tr>
<tr>
<td>Destination Image</td>
<td>0.692</td>
<td>0.610</td>
<td>0.744</td>
</tr>
<tr>
<td>Mean</td>
<td>27.06</td>
<td>36.72</td>
<td>40.79</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.378</td>
<td>4.461</td>
<td>5.196</td>
</tr>
</tbody>
</table>


H1: Push factor is positively and directly affect halal destination image

H2: Pull factor is positively and directly affect halal destination image

The result of the data revealed that there were significant positive relationships between the mediate variable of DI and the independent variables: Push (r=0.610, p<0.01) and Pull (r=0.744, p<0.01). Regression Coefficient of Push and Pull were β= 0.146, p<0.000 and β= 0.276, p<0.000, respectively. It implied that Push and Pull factors had positive and relatively strong effects on Destination Image. Furthermore, Push and Pull factors could explain 60% of the variation of tourist Destination Image (R² = 0.600).

H3: Halal destination image is positively and directly affect tourists’ travel satisfaction

There was a positive correlation between the mediate variable (DI) and the dependent variable (TSA) with r= 0.692, p<0.001. The coefficient of determination (β²= 0.929, p=0.000) indicated the strong influence of Destination Image on Travel satisfaction at the 99% confidence level. The R squared value was 0.478, which means 47.8% of the variation of Travel Satisfaction can be explained by halal Destination Image.

H4: Push factor is positively and directly affect halal destination image

H5: Pull factor is positively and directly affect tourists’ travel satisfaction

The Pearson Correlation analysis results showed the positive correlations between two independent variables and the dependent variable (TSA), with r= 0.492, p<0.01, and r=0.570, p<0.01, respectively. Travel Satisfaction directly affected by the Push factor (β= 0.177, p=0.001) and Pull factor (β=0.270, p=0.000) in a positive direction. The R² = 0.363 implied that the Push and Pull factors can explain 36.3% of the variation of tourists’ Travel Satisfaction on halal destination.

H6: Push factor is indirectly affect tourists’ travel satisfaction through halal destination image

H7: Pull factor indirectly affect tourists’ satisfaction through tourists’ destination image

The two independent factors directly influenced DI, and then this mediate variable caused an effect on Travel Satisfaction with β=0.929, p=0.000. Consequently, Push and Pull factors create indirect effects on Travel Satisfaction. Sobel Test was used to access the significance of the indirect effects [25]. It can be concluded from this test that the indirect effects of Push and Pull on TRA were indeed significantly different from zero at p<0.05 (two-tailed) and the mediation of DI in this study was true with the residual coefficients were 0.632 (Push→DI) and 0.647 (Push and Pull→DI→TSA).

Table 5 summarized the causal effect of independent variables and mediate variable on Travel Satisfaction. As regards the total effects that were shown, DI had the strongest impact on TSA (β=0.564), followed by Pull motivation factor (β=0.332). Push factor had the slightest effect on TSA to halal destination with β=0.151 only. The total effect of these factors on TSA was 1.047, in which direct effects of factors of Push, Pull, and DI accounted for more than 60% while indirect effects made up nearly 40%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>β</th>
<th>Std. Error</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push → DI</td>
<td>0.267</td>
<td>0.146</td>
<td>0.030</td>
<td>0.00</td>
</tr>
<tr>
<td>Pull → DI</td>
<td>0.588</td>
<td>0.276</td>
<td>0.026</td>
<td>0.00</td>
</tr>
<tr>
<td>Push → TSA</td>
<td>0.241</td>
<td>0.177</td>
<td>0.051</td>
<td>0.00</td>
</tr>
<tr>
<td>Pull → TSA</td>
<td>0.429</td>
<td>0.270</td>
<td>0.044</td>
<td>0.00</td>
</tr>
<tr>
<td>DI → TSA</td>
<td>0.564</td>
<td>0.757</td>
<td>0.107</td>
<td>0.00</td>
</tr>
<tr>
<td>Push→DI→TSA</td>
<td>0.151</td>
<td>0.067</td>
<td>0.091</td>
<td>0.00 (Sobel)</td>
</tr>
<tr>
<td>Pull→DI→TSA</td>
<td>0.332</td>
<td>0.061</td>
<td>0.097</td>
<td>0.00 (Sobel)</td>
</tr>
</tbody>
</table>

The empirical results of this study supported the model, which provided a conceptual framework to positively explain and predict the items that provide tourists’ satisfaction while.
traveling to halal destinations. The statistical findings showed that Push and Pull factors did not only directly affect tourists’ Travel Satisfaction, but also had indirect impacts on travel satisfaction through Destination Image. It means that when travelers have stronger intrinsic desires to go on a vacation and perception towards the halal features, attractions, or attributes of a destination, they may get the positive Perceived Destination Image as well as satisfaction while traveling.

This study proved that Muslim tourists always want to travel to a halal destination because it will comfort them. They prefer halal food nearby tourist attraction and reachable prayer places near the tourists’ attractions because the Muslim tourists can practice their act of religious devotion while visit tourists’ destinations. The support of accommodation’ managers to facilitate and to serve the halal facilities and services is one of the biggest favours, too [8]. The clean and safe places while visiting tourists’ destinations, surprisingly were not the main subjects of this study.

![Path Diagram](image)

Figure 2. Path Diagram

This finding was supported by some previous researches that agreed that travel motivation, including situational and psychological motives (Push factor) and external motives of the destination attribute (Pull factor), positively affected tourists’ travel satisfaction of destination [26,27]. The results in this research indicate that Push and Pull factors had a slight influence on tourists’ travel satisfaction in the halal destination.

It was concluded that Push and Pull factors had significant effects on the destination image. Therefore, the halal destination image handles the important role to satisfy tourists while traveling to halal destinations. It means the halal destination depends on the image created. The tourists’ satisfaction or dissatisfaction is much dependent on how well the tourists perceived about the halal concept and the destination image.

**Recommendation**

The findings of this research proposed some constructive recommendations for business organizations working in the tourism sector, destination marketers, and local governments. First, based on the empirical research findings, this study provided practical evidence on the causal relationships between travel motivation, destination image, and satisfaction to visit halal destination; to increase the awareness of tourism government and organizations about the role of push and pull factors and their positive influences on destination image and tourist’s travel satisfaction. They should pay attention to both intrinsic and extrinsic reasons why people decide to travel to the halal destination, and their basic needs and expectations about that trip as well (halal food, no alcohol drink, prayer places, etc) to comfort them while traveling.

Moreover, building the image as a halal destination is compulsory to attract more tourists from Muslim countries such as Indonesia, Malaysia, and Middle East Countries. The image can be build by preparing the Muslim’s basic needs, in minimum, and then share this improvement through social media, reviews on magazines and newspapers, television, and online promotion, respectively. Besides, the local governments should consider protecting the tourists by developing the policies and to educate the societies to respect and help the tourists while traveling to their places, with no exception. Destination marketers can design marketing strategies that show the uniqueness of nature and cultures as well as the affordable facilities and services prepared for Muslims. The city which promotes halal tourism should be aware of the Muslim requirements in the halal concept.

**CONCLUSION**

This study aimed to identify the travel motivation of Muslim travelers and investigate the causal relationships among the push and pull travel motivations, destination image, and tourists’ travel satisfaction. Based on previous theoretical and empirical studies, the research conceptual framework and hypotheses were constructed.

After analyzing the collected data, all proposed hypotheses and models were accepted,
and the research's goals have successfully obtained. Both push and pull motivation factors have a significant and positive influence on halal destination image, but only have a slight effect on tourists’ travel satisfaction. Therefore, business organizations working in the tourism sector should take serious attention to the essential roles of push and pull factors, to understand and respond to tourists’ demands and expectations when they travel to destinations. The results of this research can be used as valuable and accurate information for destination governments, marketers, and managers to implement policies, strategies, and plans to attract more potential Muslim visitors and to improve their travel satisfaction and encourage them to visit and re-visit the destination.

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Tourism Impact on Conservation and Utilization of Borobudur Temple After Being Declared as Ten New Bali Tourist Destination in Indonesia

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Abstract

Borobudur as a world heritage site is one of 10 New Bali Tourist Destination or 10 Priority Tourist Destination in Indonesia. The problem arises as government’s aim to attract tourists as many as possible can be contrary to the conservation principles. This study aimed to identify the impact of the establishment of Borobudur Temple as one of 10 priority tourist destinations, specifically in terms of conservation and utilization. In addition, it is aimed to view the readiness and strategy of the manager of Borobudur Temple Heritage Site toward the policy of 10 New Bali Tourist Destination. The method used in this study is descriptive qualitative. Data will be collected by doing observation and in-depth interview as well as literature review. The data are analysed using the hermeneutic paradigm in which researchers expect the interpretations of the manager of Borobudur Temple Heritage Site dealing with the topic of the study. Data analysis is done by using hermeneutic paradigm which is expected to answer the research questions. The preliminary findings of this study, that are based on interview and literature review, state that there is a different job description between BKB and PT. TWCBBR. This study has found out the impact of the establishment of Borobudur Temple as 10 New Bali Tourist Destination in conservation and utilization term.

Keywords: Borobudur Temple, heritage tourism, tourism impacts, 10 New Bali, 10 priority tourist destination.

INTRODUCTION

The development of priority tourism destinations made by the Ministry of Tourism (Kemenpar) of the Republic of Indonesia, consists of ten destinations that are expected to become 10 New Bali destinations [1]. However, in 2017, the Indonesian Minister of Tourism, Arief Yahya, stated that only four destinations would be reallocated to become priority tourism destinations, namely Borobudur Temple, Lake Toba, Mandalika, and Labuan Bajo [2]. In 2019, the level of tourist arrivals (foreign tourists) to the Borobudur Temple is targeted at 2 million people [3]. It is inversely proportional to the statement of Borobudur Conservation Center (BKB) staff, who said that maximum carrying capacity in Borobudur Temple is 123 people to climb(stepping on rocks) the temple at one time, 528 people in the temple yard, and 10,308 people in the temple yard [4].

In 2017, the average number of domestic tourists visiting Borobudur Temple every day is at 7,000 people, while foreign tourists are 700-800 per day (Tempo.co/ANTARA, 11 August 2017). The Government of Indonesia in 2019 targets the increasing number of tourist arrivals from 750,000 people per year to 2 million people per year (Republika.co.id, 10 February 2018). This target is said from foreign tourists alone. Thus, there is a possibility that domestic tourists visiting Borobudur Temple will be even greater than in previous years. The number of visitors certainly have the potential to damage the temple rocks trampled by footwear used by tourists (Nainggolan, pekanbaru.tribunnews.com, October 14, 2015). Another concrete example that often occurs at site locations is the frequent tourists taking selfies, which do not heed the rules for the sake of getting photos that are considered satisfactory. Cases like this occur in several locations, including the Borobudur Temple, where tourists often climb the stupa for the sake of existence (Oda, Tribunnews.com, 2017). In addition, it is not uncommonly to be seen a case of tourists and visitors at temples and cultural heritage sites, who do not heed the rules, such as smoking clandestinely in the site and ascending to a place that has been marked No Prohibited Up/Prohibited Sitting.

The problem of tourism in Indonesia not only caused by tourists. It is supported by the conclusion that there is a conflict of interest in...
Conservation and Utilization of Borobudur Temple
(Pradana, et al.)

Indonesian society regarding the management of cultural heritage [5,6]. Thus, the problem of tourism in Indonesia must be viewed from various perspectives. The entry of Borobudur Temple in the Borobudur, Prambanan, and Ratu Boko Tourism Park Limited Companies (PT. TWCBPRB), relates to the existence of the Borobudur Conservation Center (BKB). If PT. TWCBPRB focuses on marketing and increasing tourist visits, so it is different from BKB, which has a focus on conservation and preservation.

This conservation activity is inversely proportional to the job of PT. TWCBPRB, which are the manager of tourism activities at Borobudur Temple and aim to bring as many tourists as possible. Not to mention currently, the Republic of Indonesia's Ministry of Tourism has formed the Borobudur Authority Agency (BOB), which has also contributed to the increasing numbers of agencies involved in the planning and management of the Borobudur Temple Area.

The Government of Indonesia, through the Ministry of State-Owned Business Agency (BUMN), is making a solution so that visitors at Borobudur Temple can provide benefits to residents around the temple. The solution is to create a Village Economic Center (Balkondes), which is supported by 18 SOBAs (BUMN). Until now, there have been 20 Balkondes around the Borobudur Temple. The efforts made by the Indonesian government, in this case, the Ministry of Tourism, should be appreciated. However, it is also important to consider the problem of carrying capacity of a tourist destination that will or is being developed. Thus, tourism activities can work while also give some attention to the principle of conservation.

Research on the impact of tourism in Borobudur Temple was conducted in a previous study, which stated that tourism activities in Borobudur Temple were not controlled because of the large number of visitors, can be anticipated by adding supervision and application of the rules [7]. Wahyuningsih from BKB, studied the Borobudur Cultural Heritage Conservation stated that there needs to be a pattern of visiting arrangements at Borobudur Temple [8].

Biantoro and Ma’arif [9] wrote that the communities around Borobudur Temple, who do not work in Borobudur Temple, do not feel the benefits of the Borobudur Temple economically. This research, however, is becoming less relevant, because nowadays there are already 20 Village Economic Center (Balkondes) prepared to absorb the potential economical income from visitors who come to the Borobudur area. Another research found that there were negative and positive impacts on the community around the Borobudur Temple. In terms of economics and education, there is a good increase. While in terms of security, there is actually a decline, in addition to the increasingly crowded population around Borobudur Temple [10].

Cultural impacts in tourism occur because there are factors that result in so. Pitana [11] mentioned 13 factors that cause socio-cultural impacts in tourism, namely (1) Comparison of tourist numbers to local residents; (2) The dominant object that becomes the tourism attraction and the needs of tourists related to it; (3) The forms of attraction presented (nature, culture and other forms); (4) Tourism structure and organization in tourism destination area; (5) Differences in economic and cultural between tourists and local people; (6) Difference between tourist culture and local people; (7) Level of autonomy from tourism destination area; (8) Speed of tourism growth; (9) The level of tourism development (still in its early days or when saturation has started); (10) The level of DTW economic development; (11) The social structure of the local community; (12) Types of resorts developed; and (13) The role of tourism in the tourism destination area economy.

Ahimsa-Putra and Raharjana [12] explained that the cultural impact meant the various changes that occur in the value system, rules, and various rules as a result of changes in the physical, social, and cultural environment of the system. Cultural impacts are divided into two parts, namely based on the nature or character of the impact and based on its aspects. Based on the nature or character, cultural impacts are divided into positive impacts and negative impacts. Based on its aspects, it is divided into qualitative and quantitative impacts.

Yoeti [13] stated that tourism often has a negative impact on socio-cultural activities, while the positive effects are often in economic terms. Tourism as a cultural impact gives rise to what is called by Yoeti with the commercialization of art. One example is the Kečak Dance performance in Bali. The dance, which is a fragment of the Ramayana, is a compact and concise version of the show, even though the actual performance can take two to three nights. In addition, there was a falsification of handicrafts (imitation), demonstration effects, the demoralization of
young people, and the commercialization of customs.

Ardika [14] stated that heritage tourism is an alternative tourism that is useful for reducing mass tourism activities which have a more capitalist tendency in developing the tourism industry. Heritage tourism, currently has a rapid development, due to the tendency for tourists to look for new and authentic things.

Park [15] also stated that heritage tourism is a dominant tourism activity looking at material and non-material cultural forms originating from the past. The most important thing that was conveyed by Park was that in the context of tourism, the heritage that was intended was neither static nor permanent. The context of this heritage is constantly evolving and reinterpreted, in an effort to attract tourists and reflect socio-cultural changes in the contemporary world. Park also said the relationship between heritage and tourism is a complex, complicated, and symbiotic relationship.

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) stated that heritage tourism is a tourism activity to enjoy a variety of local customs, cultural heritage objects, and nature. It is along with all its contents in its original place, which aims to provide knowledge and understanding of cultural and natural diversity for visitors [16]. It also mentioned in the article, that the involvement of local communities had an important role in determining the success of heritage tourism.

Research and writings on the theme of the impact of tourism, especially related to cultural heritage, have been written by researchers from academia and practitioners alike. However, research on the impacts of tourism-related after the decision on Borobudur Temple as one of the priority destinations has not been studied in-depth, mainly relating to the management of destinations in terms of conservation and utilization. Therefore, this research aimed to determine the tourism impacts on the conservation and utilization of Borobudur Temple decided after being declared as Ten New Bali tourists destination in Indonesia, that has never been studied previously.

**RESEARCH METHOD**

The research method is a method used to solve problems in a case study. The method used in this research is a descriptive qualitative method. It is how to solve the problem under study, by describing the object of research in detail based on the facts contained in the field. The reasoning method used in completing this research is deductive. Analytical reasoning that moves from the study of general facts or symptoms, which then concluded to be specific phenomena [17]. The following are the steps that will be carried out in this research.

**Data Collection**

This stage carried out to obtain data related to research. Data collected at this stage consists of primary data and secondary data. Primary data searched in two ways, namely observation or direct observation and interviews, while secondary data obtained through documentation techniques.

**Literature Study/Documentation Techniques**

A literature study was conducted to obtain secondary data related to the research topic. Literature study aims to obtain information about responsible tourism and management of cultural heritage objects, in this case, Borobudur Temple. The study of responsible tourism can be obtained through various libraries or scientific publications, which are available in various places such as data libraries and other locations. Likewise, data on the management of cultural heritage objects as tourist attractions were also collected. This literature study aims to complete the data collected through observation and support the arguments to be conveyed.

**Observation**

The observation locations, which are the main focus, located in the core zone, where conservation activities carried out. Whereas supporting observation locations will be carried out in buffer zones, development zones, and support zones. The role and/or participation of managers, visitors, and government institutions in these zones were observed.

**Interview**

The interview stage conducted to complete the observation data and literature study. The data were related with the responsible tourism and its relationship with the building of cultural heritage, especially in Borobudur Temple. In-depth interviews were conducted with relevant informants. Parties taken as in-depth informants consisted of managers and related government institutions. The manager who will be the guest speaker is from PT. Taman Wisata Borobudur, Prambanan, and Ratu Boko (PT. TWCBPRB). It is because the PT is the party who is directly responsible for tourism activities in the
Borobudur Temple. Researchers will interview two types of speakers, namely the leadership of PT. TWCBPRB and the person in charge of representing PT. TWCBPRB at Borobudur Temple.

The second party who became the resource person was the leader and officer of the Borobudur Conservation Center (BKB), which was the manager in charge of conservation, especially about the sustainability of the preservation of Borobudur Temple. This party cooperates and is closely related to PT. TWCBPRB in management at Borobudur Temple. The selection of BKB as a resource was due to its association with the management of tourism in Borobudur Temple. In contrast to PT. TWCBPRB, which is oriented towards tourism activities, Village Economic Center (Balkandes) is oriented towards conservation.

RESULT AND DISCUSSION
Based on literature studies and interviews, the division of work zones associated with the zoning of Borobudur Temple is obtained. Where the Borobudur Temple is divided into at least three zones, namely zone I is the Conservation Zone, which is managed by the Borobudur Conservation Office; zone II is a buffer zone, which is managed by PT. Taman Wisata Borobudur, Prambanan, and Ratu Boko temples; and zone III is the Utilization Zone, which is managed by the Regional Government of Magelang Regency. These three zones become a benchmark in the implementation of tourism activities, as well as the division of responsibilities among managers involved in tourism activities at Borobudur Temple.

Impacts on Conservation
The zoning distribution conducted at the Borobudur Temple is a provision that has been made by the Government of the Republic of Indonesia. The party responsible for preservation in Borobudur Temple is BKB, which is under the Indonesian Ministry of Education and Culture. BKB made several policies related to preservation efforts carried out at Borobudur Temple.

First, the BKB made a study that produced the maximum number of visits (carrying capacity) in Zone I (the zone where the main temple located). The number of visits intended in one unit of time (for example, in 1 hour of visit), which is 128 visitors. For conservation, BKB also limits the number of visitors in Zone II to 523 visitors and Zone III to ± 10,000 visitors at the same time. Thus, if the opening hours of the visit at Borobudur Temple, for example, are for 10 hours, then the maximum number of visitors entering zone I is 128 people multiplied by 10 hours, for a total of 1280 visitors.

Secondly, based on the data obtained, there are obstacles in the implementation of conservation in Borobudur Temple, which is carried out by BKB. These constraints are due in theory, Zone I is the responsibility of the BKB, which is a conservation Zone. However, in practice, tourists who come to Borobudur, enter Zone I, where these tourists are the responsibility of PT. TWCBPRB is responsible for Zone II. Thus it can be stated that PT. TWCBPRB as the person in charge of tourism puts tourists in Zone I, which is the domain of Zone I. So that the responsibilities of officers overlap, whether it is the responsibility of BKB or PT. TWCBPRB.

Third, based on interviews, the BKB does not really care about the large number of visitors who come to Borobudur Temple. They also did not question the Ministry of Tourism targeting any number of visits, to Borobudur. As long as the maximum number of visitors in each zone, according to what they have made before. In addition, they stated that Borobudur was not only composed of one temple but a cultural heritage area in Magelang Regency. Thus, the BKB hopes that there will be a fair visit to the Borobudur area.

Impacts on Utilization
PT. TWCBPRB, based on the division of work zones, is responsible for Zone II in the Borobudur Temple Area. Zone II or buffer zone, as the name implies, is a buffer from Zone I (Conservation Zone). If related to tourism, zone II is a supporter of tourism activities carried out in zone I. In relation to the impact of tourism on the utilization of Borobudur Temple, there are several impacts that occur. The following is an impact that occurred as a result of the disconnection of Borobudur Temple as a new 10 Bali tourism destination, which later developed into a priority tourist destination.

First, the Ministry of Tourism’s target of bringing in two million foreign tourists (tourists) in Borobudur, becomes the main focus that has a big impact in the region. Based on the 2018-2019 Strategic Plan Book made by the Ministry of Tourism [18], the target of foreign tourist arrivals in 2018 of 19% and 15% in 2019, is inversely proportional to the target of increasing tourist arrivals (wisnus) by 1.85% in 2018 and 1.85% in 2019. The increase in the number of tourist arrivals (both domestic and international) has an
impact on the use that occurs in Borobudur Temple related to tourism.

Secondly, there is a target of the Indonesian government through the Ministry of Tourism relating to the amount of tourism investment entering the Borobudur Area, which is four hundred billion rupiah (400,000,000,000.00 IDR) in 2018 and five hundred billion rupiah (500,000,000,000.00 IDR) in 2019. Meanwhile, the number of tourist attractions in Borobudur targeted to increase by five attractions in 2018 and ten attractions in 2019. In addition, the number of tourism businesses is expected to increase to 224 businesses in 2018 and to 230 businesses in 2019.

Based on the area of responsibility, these targets are realization targets, which must also be met by PT. TWCBPRB, where they get the mandate to manage zone II in the Borobudur Temple area. In addition, this is in line with the main tasks and functions as a State-Owned Enterprise (BUMN), whose job is to seek and obtain as much financial income. However, although PT. TWCBPRB works in zone II, but tourists who enter Borobudur Temple are also allowed to enter zone I which is part of BKB.

Discussion
Based on the research results above, there are two things that can be discussed. First, the conservation that BKB wants is contrary to the target of tourist visits by PT. TWCBPRB. BKB does not make an issue with any number of tourists coming to the Borobudur area, as long as it follows the maximum number of visits in each zone at a time. Unlike the case with PT. TWCBPRB, who ‘sells’ Borobudur area with Borobudur Temple as the main attraction and has a minimum target of the visit.

Second, until now, the author still could not understand whether what PT really wanted. TWCBPRB is the number of tourists or the quantity of money received. If the targeted quantity is tourists, it will always conflict with the conservation efforts carried out by BKB. However, if what is desired is the quantity of cash income, then the target can be achieved, both the target of cash income and conservation.

CONCLUSION
The impact of tourism on conservation and utilization in the Borobudur Temple after being determined as a priority tourist destination occurs in several aspects. From a conservation standpoint, conservation work is getting tougher with this policy. It is due to the limited supervision team, while the number of tourists targeted to come is always increasing. In essence, the BKB as a preserver of conservation in the Borobudur Temple Area has no objection to the increase in tourist targets, as long as it adjusts to the capacity of the visits they have made. When viewed from the aspect of utilization, the PT. TWCBPRB as a BUMN strives to meet the targets set by the government, in this case, the Ministry of Tourism of the Republic of Indonesia.

The relationship between conservation and utilization of the Borobudur Temple Area needs further attention. Thus, research on this matter needs to be done, with the hope of finding the right formula in applying the principles of conservation and utilization in the area side by side. In addition, it is also necessary to ascertain the desires of the Government of Indonesia in this case the Ministry of Tourism (current nomenclature of the Ministry of Tourism and Creative Economy), regarding what is meant in quantity, whether the quantity of visitors or the quantity of income obtained as foreign exchange.

REFERENCES
Conservation and Utilization of Borobudur Temple
(Pradana, et al.)


Design of RIVAL (Cari Travel Malang) Application as One Stop App Solution for Travel Reservation in Malang

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Abstract

Reservations can be interpreted as order transaction for place, ticket, or goods between business owners or service providers with consumers. In Malang, people especially reserved some travel reservations manually. They reserve the travel by phone to the travel customer service or came to the travel office. Based on the problem, the author made an application called RIVAL (Cari Travel Malang) as a one-stop app solution for travel reservations in Malang that runs on a mobile platform with an Android operating system. In this design phase, the application is still local, runs on the local server developer, and runs online for application testing to several people. With this application, it is expected that travel reservations that initially carried out manually by coming to the service provider, now it can be done anywhere. The results of the implementation and testing were given to eight respondents with several different versions of the Android operating system, namely Android Lollipop, Marshmallow, Oreo, and Pie. It was found that the application runs well without any UI constraints or main functions in the application with additional data response obtained from the test questionnaire form that the application is easy to understand from the user interface, provided information, and easy to use. With this application, it is expected travel reservation in Malang can be done easily and efficiently.

Keywords: Mobile Application, Reservation, Travel application.

INTRODUCTION

Business in the 4th industrial revolution era is a recent change that concerns in technological development. It includes cyber-physical organization, the internet of matter or internet of thing, cloud technology, and cognitive technology [1]. The newest technical growth in the travel industry called an Automated Booking System (ARS) that assisted travel agents to manage an online booking system. The general booking system offered a single direction of operation to book travel products such as car rental or travel reservations using online bookings. The current beginning in the travel industry not only offered many benefits to the travel organization but also managed to offer cost-effectively and simple travel item to the customer.

Smartphones have continued to grow in popularity within the Indonesian citizen over the past few years, particularly with older citizens, creating a need for universal usability within the applications that these devices contain. Mobile Application Development refers to the process of making application software for hand held devices such as mobile phones and Personal Digital Assistants [2,3].

Through the usage of mobile apps, the user is provided with various features that will enable him to fulfill all his needs and much more. Apps should be interactive to the users.

Malang is one of the second largest cities in East Java after Surabaya. Malang has been known as one of the hot sport for tourism attraction in East Java. Tourism destination was distribute from coastal area to mountain area. Bromo Tengger Semeru is one of the most visited destination, in which tourism can access numerous natural attraction from Malang area [4,5,6].

The relationship between tourism and transportation can be seen from the advancement of the tourism industry that can create a demand for transportation to meet needs, and the transportation facilities can encourage tourism progress [7]. Based on a survey conducted on several travel companies in Malang at the end of 2018, the travel booking system from Malang to Surabaya or surrounding cities conducted by the customer is still done manually. The customer comes to the office of travel service providers directly, or by calling customer service from the travel agent, then the travel agent will collect the customer data.

According to information obtained through www.similarweb.com, which is a website providing a comparative analysis of the use of websites and applications in the world, at the end of 2018 the total access to online booking applications such as Traveloka in 1 month can reach 39.18 million, Tiket.com reaches 8.9 million, and Booking.com reached 3.97 million within one month [8]. A total of 70 percent of
users prefers to order these services through the application rather than website. Data from similarweb.com shows the high public interest in online booking to reduce ineffective manual travel booking. So that in this research, we design the RIVAL (Cari Travel Area Malang) application as one solution for rent car and travel booking in Malang Area. RIVAL designed for Android-based smartphones because most people in Malang using Android smartphones.

**METHOD**

RIVAL application is an application designed to facilitate the user in searching and booking travel in the Malang area using an android application. The general description if RIVAL application is shown in Figure 1. The stages of developing RIVAL applications are designing flow diagram/flowchart, designing database, designing UI and UX, and functionality test of rival application.

Figure 1 shows the interaction between the user, RIVAL application, and database. To make a reservation, the user should open the application to choose departure and destination city. After that, they chose a departure date and number of passengers. The server will process the data that inputted by the user then give a response, which travels that available according to the data input from the user. Then the user chose the schedule from the server and chose the seat according to the availability of travel. The user fills the reservation form, then the reservation will process by the server, and the user gets confirmation from the server. The flowchart of the RIVAL application is shown in Figure 2.

**Software requirement**

The software requirements to design and develop RIVAL application are:

- Android Studio Application version 3.3.1, is used as an IDE to built RIVAL application based on Android.
- Json Pojo Schema, as a tool to facilitate the conversion of JSON data format into GSON data format, so the data can be accessed by Java.

**Database Design**

The database design of the RIVAL application is using eight entities or tables, that are: user, company/travel agent, destination track, seats, city transfer, city, district, and schedule. Each entity is interrelated to run the system, if one of the entities removed, it will cause errors in the system because the data in each entity, is needed by other entities. The description of the database design is shown in Table 1.
Table 1. Database Design of Rival Application

<table>
<thead>
<tr>
<th>No</th>
<th>Entity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User</td>
<td>The user table is used to save all user data who access this application. The columns are: id, username, password, email, phone number, status, and cancel.</td>
</tr>
<tr>
<td>2</td>
<td>Company/ travel agent</td>
<td>The company table is used to save all travel agent data registered in the RIVAL application. The columns are: company_id, admin_id, name of travel agent, office_address, phone_number.</td>
</tr>
<tr>
<td>3</td>
<td>Destination</td>
<td>The destination table is used to save the reservation data. The columns are: address_id, destination_id, travel_id, passenger_id, seat, reservation_date, departure_date, pick up address, destination address, name of passenger, phone number</td>
</tr>
<tr>
<td>4</td>
<td>Seat</td>
<td>The seat table is used to show seat data and seat availability on RIVAL Application. The columns are: seat_id, destination_id, seat_status.</td>
</tr>
<tr>
<td>5</td>
<td>City transfer</td>
<td>City transfer is the city that passed by the travel according to the schedule that registered by admin. The columns are: city_transfer_id, destination_id, city_transfer, price.</td>
</tr>
<tr>
<td>6</td>
<td>City</td>
<td>All destination city that registered by admin. The columns are: id_city, city.</td>
</tr>
<tr>
<td>7</td>
<td>District</td>
<td>The district is the district that passedthrough by the travel that registered by admin. The columns are: district_id, district.</td>
</tr>
<tr>
<td>8</td>
<td>Schedule</td>
<td>The schedule table shows the travel schedule that registered by admin. The columns are: destination_id, travel_id, car_id, car_number, seat availability, start_date, end_date, travel status.</td>
</tr>
</tbody>
</table>

Table 2. Black-box Testing Scenario

<table>
<thead>
<tr>
<th>No</th>
<th>Tested component</th>
<th>Detail of testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Login page</td>
<td>Show login form                                                              Run the login function</td>
</tr>
<tr>
<td>2</td>
<td>Register page</td>
<td>Show register form                                                              Run the register function</td>
</tr>
<tr>
<td>3</td>
<td>Main menu</td>
<td>Show the reservation menu                          Showing side menu                                                              Run the finding schedule function</td>
</tr>
<tr>
<td>4</td>
<td>Schedule page</td>
<td>She the departure schedule of travel</td>
</tr>
<tr>
<td>5</td>
<td>Detail of schedule page</td>
<td>Show the timeline schedule</td>
</tr>
<tr>
<td>6</td>
<td>Seat page</td>
<td>Show the empty seat and reserved seat</td>
</tr>
<tr>
<td>7</td>
<td>Reservation form page</td>
<td>Show the district list                          Show address filling form</td>
</tr>
<tr>
<td>8</td>
<td>Confirmation page</td>
<td>Show the confirmation of reservation</td>
</tr>
<tr>
<td>9</td>
<td>List of reservation page</td>
<td>Show the list of active reservation</td>
</tr>
<tr>
<td>10</td>
<td>Historical page</td>
<td>Show the history of reservation</td>
</tr>
</tbody>
</table>

**Software Testing**

Software testing is very necessary to ensure the software or applications that made run according to the functionality, which is expected. A software developer or tester must prepare a special session to test programs that have been made so that the errors or deficiencies can be detected early and corrected immediately. Testing is a critical element of software quality assurance and is an inseparable part of the cycle live software development as analysis, design, and coding [9]. The software testing that we use is alpha testing and beta testing.

**Alpha Testing** is a type of software testing that performed to identify bugs before releasing the product to real users or to the public. The method of alpha testing is using black-box testing. Black-Box Testing is testing focuses on functional specifications from the software. A tester can define a collection of input conditions and testing the specifications' functional program [10]. The testing scenario is shown in Table 2.

**Beta Testing** performed by real users of the software application in a real environment. Beta testing is one of the types of User Acceptance Testing. Beta testing is a test conducted to know the extent of system performance, whether it meets expectations or not [11]. For beta testing, data collected through questionnaires from respondents or potential users of the system. The respondent evaluation will be count from the percentage of score or value given by respondents (Table 3).

\[
P = \frac{(Q \times S)}{\text{Ideal Score}} \times 100\%
\]

**Description:**
- \(P\) = percentage
- \(Q\) = Number of user
- \(S\) = Score
- Ideal Score = Highest score x number of user
Table 3. Percentage of testing

<table>
<thead>
<tr>
<th>No</th>
<th>Percentage (%)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0–20</td>
<td>Very difficult</td>
</tr>
<tr>
<td>2</td>
<td>20–40</td>
<td>Quite difficult/not help</td>
</tr>
<tr>
<td>3</td>
<td>40–60</td>
<td>Neutral</td>
</tr>
<tr>
<td>4</td>
<td>60–80</td>
<td>Quite easy/quite helpful</td>
</tr>
<tr>
<td>5</td>
<td>80–100</td>
<td>Very easy/very helpful</td>
</tr>
</tbody>
</table>

RESULT AND DISCUSSION
Rival Application Display

UI (User Interface) is a bridge between the user (user) with the application through a visual display of shapes, colors, writing (typography) to create interesting interactions of an application. Whereas UX (User Experience) is the experience gained by users when using an application. So that in making the UI/UX focused on three main basic colors, there are blue, white, and orange, with a small number of color combinations it is expected that users have experience using the application easily. The login and register form of Rival Application showed in Figure 3. It is the first page when we open the RIVAL application and used it to access the reservation feature of RIVAL Application.

![Image: Login and Register Form of Rival Application]

Figure 3. Login and Register Form of Rival Application

The home menu shows the searching schedule form with departure location, destination, date of departure, and the total of passengers. The list of schedule forms shows the schedule of travel that available, the agent of travel, type of car, and price. The detailed schedule form shows the schedule selected by the passenger with the travel agent, departure time, and total of available seats. The list order form shows the active reservation and the data of passengers who succeeded in doing the reservation. All UI/UX that has been designed and developed will be tested to know the functionality of the application.

Testing Result

Alpha Testing

Alpha testing has been done based on the black-box method (Table 2). There are ten components of the application page (UI/UX) that tested using the black-box method. The components are login page, registered page, main menu page, schedule page, detail of schedule page, seat page, reservation form page, confirmation page, list of reservation, and historical page. The result of black-box testing showed in Table 4. Based on the alpha testing with the testing scenario in Table 4, we can conclude that the RIVAL application work properly, but the development of application always needed.

Beta Testing

In beta testing, the application tested to eight respondents with a different version of the Android application. All respondents tried the RIVAL application and gave an evaluation of the application from the questionnaire. Then the evaluation made from the percentage value for each question. The results of beta testing are shown below.

**Question 1.** The user interface of RIVAL application is easy to understand.

<table>
<thead>
<tr>
<th>Question No</th>
<th>Information</th>
<th>Score</th>
<th>Q</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very easy</td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Quite easy</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Neutral</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Quite difficult</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Very difficult</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>8</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

\[ P = \frac{36}{40} \times 100\% = 90\% \]

Interpretation: the UI display of the RIVAL application is very easy to understand.

**Question 2.** The information of travel reservation using RIVAL application is easy to understand.

<table>
<thead>
<tr>
<th>Question No</th>
<th>Information</th>
<th>Score</th>
<th>Q</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very easy</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Quite easy</td>
<td>4</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Neutral</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Quite difficult</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Very difficult</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>8</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

\[ P = \frac{31}{40} \times 100\% = 77.5\% \]

Interpretation: the information of travel reservation using RIVAL application is quite easy to understand.
Table 4. Result of Alpha Testing Using Black Box Method

<table>
<thead>
<tr>
<th>Component</th>
<th>Testing Scenario</th>
<th>Expected Result</th>
<th>Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Login page</td>
<td>Open RIVAL Application</td>
<td>Show the login form</td>
<td>✔️ Success</td>
</tr>
<tr>
<td></td>
<td>Fill the login data and press login button</td>
<td>Login success and go to main menu</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>2. Register page</td>
<td>Choose register page</td>
<td>Show register form</td>
<td>✔️ Success</td>
</tr>
<tr>
<td></td>
<td>Fill register data and press register button</td>
<td>Register success and go to login page</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>3. Main menu</td>
<td>Enter the main menu after login</td>
<td>Show the home page with schedule searching menu</td>
<td>✔️ Success</td>
</tr>
<tr>
<td></td>
<td>Press the navigation bar</td>
<td>Show the side menu</td>
<td>✔️ Success</td>
</tr>
<tr>
<td></td>
<td>Filling data in searching schedule menu and press searching button</td>
<td>Searching menu success and go to schedule page</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>4. Schedule page</td>
<td>Filling data in searching schedule menu and press searching button</td>
<td>Show the list of travel schedule that available</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>5. Detail of schedule page</td>
<td>Choose the schedule from the list of available schedule</td>
<td>Show the time schedule according to available schedule</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>6. Seat page</td>
<td>Choose the detail of available schedule</td>
<td>Go to seat page and show the list of reserved seat and available seat</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>7. Reservation form page</td>
<td>Choose the available seat</td>
<td>Go to reservation form</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>Confirmation page</td>
<td>Choose the district</td>
<td>Showing pick up form</td>
<td>✔️ Success</td>
</tr>
<tr>
<td></td>
<td>Choose other district</td>
<td>Show travel address</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>8. List of reservation page</td>
<td>Press reservation button</td>
<td>The booking was successful and returned to the main menu</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>9. Historical page</td>
<td>Select the order list menu in the side menu</td>
<td>Displays the list of active orders</td>
<td>✔️ Success</td>
</tr>
<tr>
<td>10. Schedule page</td>
<td>Select the history menu in the side menu</td>
<td>Displays the order history list</td>
<td>✔️ Success</td>
</tr>
</tbody>
</table>

**Question 3. The RIVAL application is easy to operate.**

Table 7. Result of Question 3

<table>
<thead>
<tr>
<th>Question</th>
<th>No.</th>
<th>Information</th>
<th>Score</th>
<th>Q</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>Very easy</td>
<td>5</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Quite easy</td>
<td>4</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Neutral</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Quite difficult</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Very difficult</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>35</strong></td>
<td></td>
</tr>
</tbody>
</table>

\[
P = \frac{35}{40} \times 100\% = 87.5\% 
\]

Interpretation: RIVAL application is quite easy to operate.

**Question 4. The RIVAL application help you to make travel reservation.**

Table 8. Result of Question 4

<table>
<thead>
<tr>
<th>Question</th>
<th>No.</th>
<th>Information</th>
<th>Score</th>
<th>Q</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>Very helpful</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Quite helpful</td>
<td>4</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Neutral</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Unhelpful</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Very unhelpful</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>33</strong></td>
<td></td>
</tr>
</tbody>
</table>

\[
P = \frac{33}{40} \times 100\% = 82.5\% 
\]

Interpretation: the RIVAL application is very helpful to make travel reservation.

**Question 5. Do you find any obstacle or bugs while using RIVAL application?**

Table 8. Result of Question 4

<table>
<thead>
<tr>
<th>Question</th>
<th>No.</th>
<th>Information</th>
<th>Score</th>
<th>Q</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>Yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>No</td>
<td>2</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

\[
P = \frac{15}{16} \times 100\% = 93.8\% 
\]

Interpretation: there is no obstacle or bugs while using RIVAL application.

The results of beta testing have been done by summarizing the results of the questionnaire obtained from eight respondents. It can be concluded that the RIVAL application has met or achieved the desired goals and also obtained constraint responses to the problems of the choice of departure city and destination city that previously used the the popup menu. It then converted to use Alert Dialog, because when using popup menu while the application is accessed using a Smartphone that has a small screen size, the popup menu is almost filled the screen.

**CONCLUSION**

The RIVAL (Cari Travel Area Malang) has been designed and developed using the Android...
system as a one-stop application to make travel reservations in the Malang area. The stage of developing the RIVAL application started by designing a flowchart as the business process of the RIVAL application, designing the database, UI/UX, system implementation, and testing. The result of testing shows that the RIVAL application work properly and easy to use. Hopefully, in the next stage, we can develop using the IOS system and can develop not only in Malang city.

REFERENCES


The Analysis of Instagram Use as a Media of Tourism Promotion in Malang City (Case Study on @Amazingmalang Instagram Account)

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Abstract
Today's social media use is very influential in the lives and perspectives of finding a wide variety of information. Most social media users prefer to use Instagram as an attractive information provider app with Visual media treats in the form of images and videos tourism industry that has undergone a lot of rapid progress. Like the city of Malang, it becomes the main tourist destination for tourism by foreign and foreign tourists when they want to go on holiday. This research discussed the success rate of Instagram as a tourism promotion media in Malang. This type of research is qualitative descriptive research. The data collection techniques used are three ways: interviews, questionnaires, and case studies. The results showed the success rate of tourism promotion in Malang City using the Instagram @amazingmalang.

Keywords: Instagram, promotions, tourism.

INTRODUCTION
Along with the times, the development of communication science cannot be separated from information technology. Without communication, information cannot be conveyed. In the current era of globalization, information and communication technology plays an important role in various aspects of human life. The role of information technology and communication will increase along with the times and eventually become a basic element in human life.

Social media, as one of the most powerful online networking tools, has been integrated into social and economic life in the real world. Social media marketing is a powerful way for businesses of all sizes to reach prospects and customers [1]. The customers are already interacting with brands through social media, and if the brands are not speaking directly to their audience through social platforms like Facebook, Twitter, Instagram, and Pinterest. Considering the survey report for the year 2018 [2], the second reason 1st rank about using the internet, 19.1% said The Social Media. About internet content (Social Media), the most accessed 17.8% is Instagram. Of the many information technologies that can be accessed easily from anywhere is to use print or mass media commonly known through television, radio, internet, newspapers, and others. Tourism businesses use a lot of media to promote tourism in their area. One of the easiest media to promote tourism is Instagram. The presence of Instagram makes it easy for people around the world to find out the potential of tourism they want to visit.

According to the media intelligence company Isentia, they captured discussions on social media related to tourism and the year-end holiday of 139,438 buzz in the past month. This discussion is counted from 1 October to 8 November 2019 [3].

During this period, Yogyakarta became the area that most talked about by people, which is 40,988 buzz. The second place is in Bali with 37,792 Buzz, followed by East Java with 20,146 buzz. Furthermore, there is central Java with 16,143 Buzz, North Sumatera 6,558 Buzz, South East Sulawesi 4,661 Buzz, South Sulawesi 3,996 Buzz, and West Papua 9,149 Buzz social media talks. From this, we can conclude that East Java tourism ranks 3rd with the most buzzier, including @amazingmalang, who participated in tourism promotion in Malang City [3].

Instagram account @amazingmalang provides many recommendations for information about tourism in the city of Malang. The account created on 20th October 2015, has gained 470,000 followers with a total of 5,523 accounts followed. Until now, the number of posts on the @amazingmalang account is 5,745 images with 20 videos on IG TV, a number that is extraordinary for the development over the past four years. Not only that, but @amazingmalang account has also grown to have a youtube channel and an @amazingmalangeats account that offers shop or restaurant recommendations in Malang. Achievements continue to be achieved by the @amazingmalang account, until
now it has its own TV show and cooperates with Malang Struddle. @Amazingmalang account has the following highlights: Travel hack, kid-friendly, recommendations, cheap travel, culinary, behind the scenes, wallpapers, photo spots, beaches, and local events. @Amazingmalang account activity is a post about the recommendations of natural tourism in Malang city, besides this account also repost for photos on the Instagram account of other people who go to the tourism place in Malang city. The goal is to give a good effect to the content on the @amazingmalang account and also make the photo owner popular.

In this case, it can be certain that the account @amazingmalang not only have one admin. The way they develop this account is to often do the 25,000 meal voucher on the condition that the person is taking a survey created by them and tagging the other five target audience. The result is that more and more people are aware of this account and make this account a reference to finding a tourist spot. In this paper, we will discuss the analysis of the success rate of Instagram as tourism promotion media in Malang, a case study on Instagram account @amazingmalang seen from the number of public interest with the existence of this account.

### MATERIAL AND METHOD

The population in this research is active account owner on Instagram and follow an Instagram account @amazingmalang Malang that actively visits the account timeline @amazingmalang at least 1 time a week. According to Sugiyono [4], a decent sample size in the study was 30 to 500. So in this study took 120 samples. The sampling method uses purposive sampling.

#### Data Collection

In this study used data collection techniques by giving questionnaires to respondents who became samples. The question presented in this questionnaire is a closed question, that is, the model of the question has been provided the answer, so that the respondent only choose from an alternative answer that corresponds to his or her opinion or choice. From the answers to the list of questions asked to respondents, we use a scale rating, which is a scale containing five levels of answer preference. All data in the entry to the computer by using the program Microsoft Excell 2010. Further tabulation of variable data to view and analyze the promotion level of Attention, Interest, Desire, Action (AIDA) [5] showed in Table 1.

**Table 1. Variable Operational Definitions of AIDA**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Attention is a form of attention and awareness of the existence of an account. Attention can be seen through the frequency of Instagram followers accessing social media and the total time of accessing Instagram social media so be aware of travel promotional activities.</td>
<td>Attention to travel places photos in Timeline, Attention to profile picture, Attention to Location Tour, Attention to Information Be Shown</td>
</tr>
<tr>
<td>Interest</td>
<td>Interest is an interest that appears in Instagram on a product that has been realized and exposed to the promotion delivered through Instagram.</td>
<td>Interest in looking for more information about content, Consider visiting, Desire to know Content, Interest to visit</td>
</tr>
<tr>
<td>Desire</td>
<td>Desire is a desire that arises because of an exchange process that appeals to followers. Desire can be seen from the desire to visit that grows after seeing Instagram</td>
<td>Ask other travel recommendations, Inquire with the promo, Inquire the location of places, Inquire website Visits, Inquire about More info</td>
</tr>
<tr>
<td>Action</td>
<td>Action is an action to visit by doing a visiting decision. Actions can be seen from the visit of Instagram followers marked by real action followers visit tourist attractions after viewing the account content.</td>
<td>Visit the tourist spot, Decide to visit a tourist spot, Invite others to visit the place</td>
</tr>
</tbody>
</table>
RESULT AND DISCUSSION

Actual Overview of Followers
The characteristics of Instagram followers @amazingmalang account can be seen in this study, which consists of four variables, namely: Age, Hometown, Followers Since, Frequency, and Duration (Table 2). The results showed that the average age of the 100 respondents in this study was 21 years. It appears that most respondents were in the age category of 20-24 years. It is caused by the majority of followers @amazingmalang, mostly among students or as fresh graduates. Most of the respondents came from East Java, with 82%. It shows that the area around East Java indeed chose Malang as the desired tourist destination.

Social Media Exposure Levels
Exposure in this research is traced through the identification of general and specific behavior towards tourism products through the social media of Malang City. Dissertiveness is the activity of listening, seeing, and reading, or more generally giving some attention to a message delivered by using the media as an intermediary [6]. This research was conducted to measure the extent of the influence of Malang tourism social media seen from the behavior of tourism accounts @amazingmalang in Malang City.

Interest is a desire that arises in followers to find out more about tourism. It can be seen from the data above (Table 3) that the interest of @amazingmalang account followers is very high. It is because the content served by the @amazingmalang account is indeed interesting and makes the reader motivated to go to these tourist attractions. Here is an example post @amazingmalang that has an average number of likes 8,000 and above (Fig. 1).

![Figure 1. Content of @amazingmalang](image)

<table>
<thead>
<tr>
<th>Table 3. Follower Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

Table 2. Number and Percentage of Active Followers

<table>
<thead>
<tr>
<th>No.</th>
<th>Characteristics of followers</th>
<th>Category</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td>10-18</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19-25</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26-35</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36 and above</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Hometown</td>
<td>Banten</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jakarta</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jawa Barat</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jawa Tengah</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jawa Timur</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kalimantan Timur</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nusa Tenggara Barat</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Riau</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Followers Since</td>
<td>Less than 1 month</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 month</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 month</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than 3 months</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>Frequency</td>
<td>1 time a week</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 time a week</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 time a week</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than 3 times a week</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Duration</td>
<td>Less than 30 m per day</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 - 45 minutes per day</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45 - 60 minutes per day</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than 60 m per day</td>
<td>8</td>
</tr>
</tbody>
</table>
The desire that arises in the followers of @amazingmalang accounts is very high (Table 4). It is a sign that this account has indeed succeeded in influencing the desires of tourists/followers to visit tours that have been recommended by the @amazingmalang account. In this case, many followers go on vacations by inviting friends and family, as evidenced by several followers who commented on this account by inviting friends and relatives.

Table 4. Desires of Followers

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you ever recommended the @amazingmalang account to your colleagues?</td>
<td>91%</td>
<td>9%</td>
</tr>
<tr>
<td>2</td>
<td>Have you ever looked for deeper information by visiting the Amazing Malang website?</td>
<td>78%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Comments on the @amazingmalang account show followers’ interest in this account, arguably the response from followers. In a piece of information or communication, there is a reciprocal name. The @amazingmalang account shows that reciprocity from followers looks enthusiastic and fun.

The actions taken by followers are clear proof that the @amazingmalang account is on target to promote tourism in Malang through Instagram (Table 5). Some actions taken by the @amazingmalang account followers are by visiting tourist attractions; besides that @amazingmalang account also organizes promos for active followers to attract other institutional users. Here is an example of a promo given by the @amazingmalang account (Fig. 2).

Table 5. Action of Followers

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you ever given likes to the @amazingmalang account?</td>
<td>98%</td>
<td>2%</td>
</tr>
<tr>
<td>2</td>
<td>Have you ever commented on the @amazingmalang account?</td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td>3</td>
<td>Have you ever followed the promo on the @amazingmalang account?</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>4</td>
<td>Have you ever taken the quiz on the @amazingmalang account?</td>
<td>62%</td>
<td>38%</td>
</tr>
</tbody>
</table>

Not only has that but @amazingmalang account also often held quizzes for loyal followers. Do not forget that each quiz given is always spiked with attractive prizes given by this account. One of the presents is merchandise that reads Amazing Malang. With this gift, it makes it easier for people to remember this name because it is well spread. The example of a quiz held by the @amazingmalang account showed in Figure 3.

Figure 2. @amazingmalang Promo

Figure 3. Instagram Quiz

Effectiveness Level of Dissemination of Media Information and Promotion

Promotion is one of the focal points of business people to introduce products and be marketed to prospective consumers. Promotion is said to be effective if the message conveyed is easily digested and understood by the public and contains correct information so that the public (consumers) can observe information with the right perspective [7]. Measurement of the effectiveness of the promotion of tourism products in Malang through social media Instagram, especially on followers @amazingmalang, is done by looking at the four stages of AIDA (Attention, Interest, Desire, and Action). A more detailed explanation can be seen in the following Table 6.
The Analysis of Instagram Use as a Media of Tourism Promotion in Malang City (Rashad & Asri)

Table 6. The Percentage of Followers of the Malang Tourism Products Instagram Account

<table>
<thead>
<tr>
<th>No.</th>
<th>Effectiveness of Instagram Media Promotion Tourism</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attention</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Interest</td>
<td>96</td>
</tr>
<tr>
<td>3</td>
<td>Desire</td>
<td>84.5</td>
</tr>
<tr>
<td>4</td>
<td>Action</td>
<td>74.75</td>
</tr>
</tbody>
</table>

The use of the internet and other information communication technologies is leading to a new era for the global economy. Social media continues to grow and increasingly influence many social and economic aspects of the tourism and hospitality industry. Social media is fundamentally changing the way travelers and tourists' search, find, read, and trust, as well as collaboratively produce information about tourism suppliers and tourism destinations [8]. In the tourism sector, Instagram has a role as an online photo album that can be accessed by others, and users can also use it as a promotion channel [1]. This method also helps marketers to gain feedback from the customers. These benefits given by Instagram to the marketers have made Instagram as one of the strong tools in the social network marketing strategy.

Based on our observation, we analyze that Instagram becomes the best channel for promoting destination images by tourism operators. For example, the account of @amazingmalang has a result almost all respondents said the account @amazingmalang has the effectiveness of Instagram media promotion tourism by aspect attention, interest, desire, and action.

The result of this research points out that the process of promotion on Instagram is different from conventional media such as print and electronic advertising and success to promote Malang tourism. Instagram is built on interactions and inspiration from family, friends, colleagues, and acquaintances: people you know, you trust, and whose opinion you are more likely to take into account when it comes to making a travel decision [9].

The influence of Instagram is leveraged by brands as well [9], who have moved towards campaigns and content that is more human and visual. Such content is more captivating and connects to our innate desire to travel and discover. While destinations have not changed, and neither has the concept of hospitality, the modern traveler has definitely changed. The perspectives from which travelers want to explore a destination, and the tools used to share the experiences have changed considerably.

Nevertheless, Instagram has shown to be a very useful marketing tool in the new era. There still are various disadvantages when it is used as a marketing tool [1]. Firstly, the customer's information is not fully protected. Secondly, the interaction between the customer and the marketer is through a media platform. It becomes hard for the marketer to know, who their customers are, because fake identity may be created for online business. To develop an appealing and engaging brand image on Instagram, tour and activity operators should:

1. Consider the content and hashtags users might find appealing. Also, think about how to make the content memorable for users.
2. Inspire travelers by showing off the best side of the destination.
3. Collaborate with the local operator network - create an overarching vision and allow individual operators to adapt it to their services and target market.
4. Inspire travelers by creating engaging stories. Remember that travelers want to explore a destination in a deep, personal, and meaningful way.

CONCLUSION

As Instagram platforms play an important an increasingly central role in social media, it is important that users or scholars alike begin to see that these platforms are not simply as interaction or communication tools. Instagram, from a simple picture sharing and social tool, transformed into a new marketing tool in social media marketing. The results of this research showed that the effectiveness of Instagram as media promotion for tourism in Malang city in the Instagram media was in the high category. It means that promotional activities carried out were able to cause attention, interest, and feedback, and some of them carried out activities to promote travel and tourism from followers. In the future, it is necessary to activate online promotional activities that have proven to be effective in generating activities to making a travel decision (actions) from followers.

REFERENCES

The Analysis of Instagram Use as a Media of Tourism Promotion in Malang City (Rashad & Asri)


Suitability and Carrying Capacity of Seagrass for Snorkeling on Tunda Island, Banten

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Abstract
The seagrass ecosystem has ecological and economical functions, which can provide benefits to the surrounding community as a conservation area and marine tourism. Studies on the suitability of seagrass ecosystems for marine tourism, especially snorkeling, on Tunda island are needed to support their use. The purpose of this research is to evaluate the suitability and carrying capacity of seagrass ecosystems on Tunda Island, Banten for marine tourism snorkeling. The research was conducted in March - July 2019. The research method carried out was a survey with five observation stations in the seagrass area on Tunda Island. The parameters observed are seagrass cover, seagrass type, fish type, brightness, temperature, depth, current speed, substrate type, salinity, pH, DO, facilities, and infrastructure as well as accessibility. Data analysis was performed in a comparative description between five observation stations. The result of this research showed that station 1 (in north area) and station 4 (in southeast region) had a value of the Tourism Suitability Index in the range of 73.15% - 77.78% and included in the Suitable category, which are potential stations to be developed as snorkeling marine tourism areas. The carrying capacity of the seagrass area for snorkeling tours on Tunda Island, Banten with an area of 11,197 hectares is 44 people per day.

Keywords: Marine tourism, regional carrying capacity, regional suitability, seagrass, snorkeling.

INTRODUCTION
Ecotourism in Indonesia has been studied extensively because of its economic benefits and contributions to local development. In this case, tourism to natural environments, especially coastal and beach areas in small islands. It happened to be more famous because the coastal and beach area are the potential to be developed on its biodiversity, tourism, and sustainability value [1,2].

Tunda Island is a small island in Serang Regency. Tunda Island has a coastal ecosystem consists of mangrove, seagrass, and coral reef ecosystems, which were still natural. Seagrass ecosystem is a place to live and breed for various marine biota, such as sea turtle, dugongs, fish, echinoderms, and invertebrate biota. It makes seagrass beds have functioned as a nursery ground, feeding ground, and spawning ground. Besides being beneficial from the ecological view, seagrasses can also be used as educational objects and conservation-based recreation objects [3].

Seagrass conditions on Tunda Island included in the fine category, with its cover reaching 66% [4]. Seagrass species that scattered in Tunda Island waters are Cymodocea rotundata, C. serullata, Enhalus acoroides, Halophila ovalis, and Thalassia hemprichii [5]. Fine seagrass conditions and the many associated biotas in the seagrass beds make the seagrass ecosystem on Tunda Island interesting to be developed as a marine tourism object.

Marine tourism is a tourism activity that prioritizes underwater resources and seawater dynamics, such as diving, snorkeling, swimming, boating, sunbathing, water sports, seagrass tours, etc [6]. Snorkeling tourism is also one of the marine tourism activities that can be done in the seagrass ecosystem. Along with the tourism activities that could be done, it may also cause the degradation of the seagrass ecosystem. This marine tourism activity can be one of the sectors of development and sustainable development, and can provide income for the community without losing the conservation value of the seagrass ecosystem [7]. This research was aimed to evaluate the suitability and carrying capacity of seagrass ecosystems on Tunda Island, Banten for marine tourism snorkeling.

MATERIAL AND METHOD
The research was conducted in March-July 2019, which consisted of several stages, namely the survey phase, the data collection stage, and data processing. The research location is in the waters of Tunda Island, Banten, which is one of...
the tourist destination locations. There are five data collection stations located in certain parts of Tunda Island waters. The selection of each data sampling location based on the differentiation of seagrass and its habitat characteristics [8]. The coordinates stated in Figure 1.

**Seagrass Vegetation**

Data on seagrass vegetation taken includes the seagrass cover percentage and its species. Quadrant transect method is a method used to obtain the cover percentage and seagrass species using quadrant transects measuring 50 x 50 cm\(^2\) with four small boxes in quadrant transects (Fig. 2). There are three transect lines in each station [9]. The length of the transect line is 100 m, with the distance from one transect line to another is 50 m so that the total area is 100 x 100 m\(^2\). The distance between one quadrant and another quadrant transect is 10 m so that the total quadrant transect of each transect line is 11. The starting point of the transect placed at a distance of 5-10 m from the shore, located where the seagrass is encountered.

The results of the data taken in the field will be processed in the form of a percentage of seagrass cover. The value of the average seagrass coverage per location is categorized into four percentage categories (%), as seen in Table 1.

![Figure 1. Research Location](image1)

![Figure 2. Quadrant transect](image2)
Average Seagrass Cover(%) =
\[
\frac{\text{Area of seagrass cover throughout transects}}{\text{Area of the entire transect quadrant}}
\]

<table>
<thead>
<tr>
<th>Coverage (%)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 25</td>
<td>Rarely</td>
</tr>
<tr>
<td>26 – 50</td>
<td>Moderate</td>
</tr>
<tr>
<td>51 – 75</td>
<td>Dense</td>
</tr>
<tr>
<td>76 – 100</td>
<td>Very Dense</td>
</tr>
</tbody>
</table>

**Biota Association**

Identification of association biota is done by observing the biota that lives around the seagrass ecosystem using visual methods, by snorkeling in the area around the seagrass ecosystem. The observed biota divided into coral fish and other invertebrates, and the identification stated as the family name of each biota. The identification of the biota is needed as the parameter of the water quality and seagrass ecosystem richness [8].

**Waters Quality**

Water quality is including physical-chemical parameters. There are eight parameters, namely substrate type which determined by visual observation, visibility and depth are determined by using Secchi disk, current speed determined by tracking float tools, temperature determined by a thermometer, salinity determined by the help of refractometer, also DO and pH determined by the help of DO meter and pH meter [8]. The results of the data taken are then compared with the quality standards stated in the Indonesia’s Minister of Environment Decree No. 51 of 2004.

**Tourism Suitability Index (TSI)**

The tourism suitability analysis is using a suitability matrix based on the importance of each parameter to support activities in the area. The suitability matrix of the seagrass area for the snorkeling tourism category showed in Table 2. The formula used to determine the suitability of seagrass tourism is the TSI formula or the Tourism Suitability Index, while the calculation method [10].

\[
\text{TSI} = \Sigma \left( \frac{N_i}{N_{\text{max}}} \right) \times 100 \%
\]

**Regional Carrying Capacity (RCC)**

RCC is the maximum number of visitors who can be physically accommodated in the area, provided at a certain time without causing disturbance to nature and humans. The completeness of the data in using the RCC formula will be completed by the visitor's ecological matrix and the visitor activity matrix.

It is stated that the ecological potential (K) of snorkeling activity is one visitor per 100 x 5 m unit area, while the time provided by the region for tourism activities in one day (Wt) is six hours, and the time spent by visitors for snorkeling activity (Wp) is three hours. Based on the explanation above, the calculation of the Regional Carrying Capacity is as follows:

\[
\text{RCC} = K \times \left( \frac{L_p}{L_t} \right) \times \left( \frac{W_t}{W_p} \right)
\]

In accordance with Indonesia’s Government Rules No. 18/1994 concerning the Exploitation of Nature Tourism in the Utilization Zone of National Parks and Natural Tourism Parks, the area permitted to be developed is 10% of the area of utilization zone. So the calculation of the Regional Capability of Utilization (RCU) is done by the formula:

\[
\text{RCU} = 10\% \times \text{RCC}
\]

**Notes:** Maximum score are 108, S1 (Very Suitable) with a value of 81% -100%, S2(Suitable) with a value of 61% - <80%, S3 (Conditionally Suitable) with a value of 41% - <60%, N (Not Suitable) with a value <40%.
RESULTS AND DISCUSSION

Water Quality

Water quality assessed from the results of measurements of several physical and chemical parameters, which play roles in supporting the life of seagrass biota, as also stated in Indonesia’s Minister of Environment Decree No. 51 of 2004 about Sea Water Quality Standards for Marine Biota. The results of data retrieval can be seen in Table 3.

The results of data collection in the field showed that there are three types of substrates that have been identified, namely coral-sand, sand, and muddy sand. The different types of substrates will affect the type of seagrass that grows on it. Seagrasses tend to live on sandy, muddy substrates, or on table fragments [11]. Substrates play a role in the stability of seagrasses, which are growing media, and nutrient source cycles [12].

The visibility value is related to the depth of the water. The depth obtained is ranging from 0.4 m - 1 m, with visibility reaching 100%. Water visibility is strongly influenced by weather conditions, measurement time, turbidity, and suspended solids [13]. High water visibility affects the visibility of tourists on existing attractions. With a shallow depth, sunlight penetration is expected to enter the bottom, and there are no factors that can block incoming the light, such as mud, fine sand, or other organic or inorganic materials [14].

The speed of water currents is influenced by the wind that moves on the surface of the water. In addition to the wind that forms currents, the topography forms the seabed and surrounding islands can form currents [15]. When collecting current data at five observation stations, the obtained velocity ranges from 2 to 6.12 cm.s⁻¹. The current velocity values obtained are classified as very slow [16]. Currents with very slow speeds have values <10 cm and are able to support the life of seagrass ecosystems.

The measured water temperature is indicated to be able to support the life in it properly. *Enhalus acoroides* is able to live at temperatures of 26.5-32.5°C, and in shallow waters can tolerate temperatures up to 38°C until the conditions recede [17]. If the temperature reaches 45°C, then the growth of seagrass will be disrupted, and seagrass will experience stress until it can experience death [18]. Salinity measured worth 21.5-29 ppt. Seagrass vegetation has a fairly high tolerance to salinity, which is 10-40 ppt with its optimum at 35 ppt. Decreased salinity will reduce the ability of seagrass photosynthesis. The low salinity value compared to this quality standard can be caused by patterns of water circulation, evaporation, precipitation, rainfall, and freshwater supply [19].

DO data in waters can be said to be fair. It shows that oxygen demand both for chemical and biological processes of biota in the waters of Tunda Island are equals. Or in other words, seen from the DO value, the waters of Tunda Island are sufficient to support life contained in the seagrass ecosystem.

Water pH ranges from 7 - 8.5 and can support the life of biota that lives in its waters. The pH value can be influenced by biological, chemical activities such as photosynthesis, temperature, DO, and pollutants that enter the waters. Biota death is more often caused by low pH than high pH [20].

Seagrass Vegetation Condition

The results of observations of seagrass vegetation at the research site on Tunda Island, based on five observation stations. There were five types of seagrasses, namely *Cymodocea rotundata* (Cr), *Cymodocea serrulata* (Cs), *Enhalus acoroides* (Ea), *Halophila ovalis* (Ho) and *Thalassia hempricii* (Th) with varying mean of seagrass cover at each station, obtained from three lines transects (Table 4).

<table>
<thead>
<tr>
<th>Station</th>
<th>Substrate Type</th>
<th>Visibility (%)</th>
<th>Depth (m)</th>
<th>Current Speed (cm.s⁻¹)</th>
<th>Temperature (°C)</th>
<th>Salinity (ppt)</th>
<th>DO (m.L⁻¹)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coral Sand</td>
<td>100</td>
<td>0.4</td>
<td>3</td>
<td>32</td>
<td>28,8</td>
<td>9,65</td>
<td>8,1</td>
</tr>
<tr>
<td>2</td>
<td>Coral Sand</td>
<td>100</td>
<td>0.4</td>
<td>2</td>
<td>31</td>
<td>28,7</td>
<td>8</td>
<td>7,8</td>
</tr>
<tr>
<td>3</td>
<td>Coral Sand</td>
<td>100</td>
<td>0.5</td>
<td>2</td>
<td>29,5</td>
<td>26</td>
<td>8,3</td>
<td>7,5</td>
</tr>
<tr>
<td>4</td>
<td>Sand</td>
<td>100</td>
<td>0.55</td>
<td>2,78</td>
<td>34</td>
<td>21,5</td>
<td>7,86</td>
<td>8,2</td>
</tr>
<tr>
<td>5</td>
<td>Muddy Sand</td>
<td>100</td>
<td>1</td>
<td>6,12</td>
<td>29,7</td>
<td>29</td>
<td>8,25</td>
<td>7,7</td>
</tr>
<tr>
<td>Quality Standard</td>
<td>&gt;3</td>
<td></td>
<td></td>
<td></td>
<td>28-30</td>
<td>33 - 34</td>
<td>&gt;5</td>
<td>7-8,5</td>
</tr>
</tbody>
</table>

Table 3. Water Quality Data
The diversity of species that grow in the area is influenced by the type of substrate. The horizontal distribution of seagrasses influenced by substrate characteristics and water motion conditions [19]. The diversity of species found in the field shows that the quality of these waters is in fine condition and is not contaminated with harmful elements. The diversity that grows in the area is also influenced by the quality of the waters. Seagrass coverage is a percentage value of the seagrass ecosystem cover that describes how wide the seagrass covers a water area. The percentage value of seagrass coverage does not always equal to the percentage value of seagrass species in an area because the percentage of coverage are considering the leaf scope while the density of species seen by the number of stands.

**Biota Association**

Identification of associated biota in seagrass areas in the research location, separated into two groups, namely coral fish and other biotas. Observations were made visually at five observation stations. The results of coral fish observations are listed in Table 5.

**Table 5. Associated Coral Fish in the Seagrass Area, Tunda Island**

<table>
<thead>
<tr>
<th>Station</th>
<th>Coral Fish (Family)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nemipteridae, Apogonidae, Labridae</td>
</tr>
<tr>
<td>2.</td>
<td>Nemipteridae, Apogonidae, Labridae, Pomacentridae</td>
</tr>
<tr>
<td>3.</td>
<td>Nemipteridae, Apogonidae, Labridae, Pomacentridae</td>
</tr>
<tr>
<td>4.</td>
<td>Nemipteridae, Apogonidae, Labridae, Pomacentridae</td>
</tr>
<tr>
<td>5.</td>
<td>Nemipteridae, Apogonidae, Labridae</td>
</tr>
</tbody>
</table>

Observation of coral fish at the research location, obtained as many as four families, namely Nemipteridae, Apogonidae, Labridae, and Pomacentridae (Table 5). The four families were only found at station 4, while at the other station, only three families were found scattered in various ways. Coral fish from the Pomacentridae family show a preference attitude that is limited to the substrate and depth and is known as fish that are territorial, social, spatial, and relatively stable. Pomacentridae family belongs to the major group, as well as the family Apogonidae and Labridae. Pomacentridae family has a variety of diverse colors. The Nemipteridae family belongs to the target fish group, a carnivorous fish that eats small bottom fish, cuttlefish, crustaceans, or worms. Coral fish families found the majority are fish families that spawn and migrate temporarily in the seagrass ecosystem, to then return to their habitat, the coral reef ecosystem. The observations of other associated biotas in the seagrass area of Tunda Island are listed in Table 6.

**Table 6. Other Biota Associating in the Seagrass Area, Tunda Island**

<table>
<thead>
<tr>
<th>Station</th>
<th>Biota Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sea cucumbers (family Holothuroidae), snails (class Gastropods)</td>
</tr>
<tr>
<td>2.</td>
<td>Sea cucumbers (family Holothuroidae), snails (class Gastropods), crustaceans and crabs (subfilum crustaceans)</td>
</tr>
<tr>
<td>3.</td>
<td>Sea cucumbers (family Holothuroidae), snails (class Gastropods), crustaceans and crabs (subfilum crustaceans)</td>
</tr>
<tr>
<td>4.</td>
<td>Sea cucumbers (family Holothuroidae), snails (class Gastropods), crustaceans and crabs (subfilum crustaceans), sea urchins (family Echinoidea), starfish (family Oreasteridae)</td>
</tr>
<tr>
<td>5.</td>
<td>Snails (Gastropods class)</td>
</tr>
</tbody>
</table>

Associated biotas other than coral fish found at the data collection station are sea cucumber, snails, crustaceans, crabs, sea urchins, and starfish are invertebrate biota that often found in seagrass ecosystems. Station 4 identified to have the highest diversity of biota associations compared to the other four stations. It is presumably because station 4 has the most diverse type of seagrass with a moderate percentage of cover. This diversity supported by the type of sand substrate, which is indeed covered by various types of seagrass. The coral-sand substrate and sand are a type of substrate that has a high enough oxygen content to allow many biotas to live on the substrate. A sand substrate is also a habitat for these invertebrate biotas.

The shallow water depth also affects the penetration of light entering the water, supporting seagrass as a photosynthetic agent. In
addition, the condition of the seagrass ecosystem is directly adjacent to the coral ecosystem, thus enriching the biota that can live in it. The velocity of the calm waters also supports the life of the associated biota. The relatively quiet current velocity favored by small fish and invertebrates such as bivalves, gastropods, crustaceans, and others [19]. It shows that the seagrass ecosystem in Tunda Island is still in fine condition and productive to be able to support the lives of various marine biota and add attraction to be used as marine tourism activities, especially snorkeling.

**Suitability of Seagrass Areas for Snorkeling Tourism**

The suitability index of the seagrass area for snorkeling tours assessed through seven parameters, namely seagrass cover, visibility, associated biota, seagrass species, substrate type, current speed, and depth [9]. The determination of suitability is based on the multiplication of scores and weights obtained from each parameter. The suitability of the area can be seen from the level of suitability percentage obtained by summing the values of all parameters, while the results obtained are listed in Table 7.

Based on the calculation of the suitability of the seagrass area for snorkeling tours for stations 1 to station 5, the value of TSI on Tunda Island, Banten, ranged from 59.26 - 77.78%. The station 1, station 2, station 3 and station 4 are included in the category S2 or Suitable, and station 5 is included in the category S3 or Conditionally Suitable (Table 7). In general, it can be said that the seagrass area in the waters of Tunda Island, Banten, is suitable to be used as a marine tourism area for snorkeling, but there needs to be supervision and maintenance of the seagrass ecosystem and the surrounding area. While the S3 category can be interpreted that the seagrass area at this station, is inadequate to be used as a tourist area because the seagrass species are few, as there are only two seagrass types, although the seagrass cover is quite large relative to station 1. Also, some factors can become obstacles for snorkeling tours, including water that is somewhat turbid due to the type of muddy sand substrate, as well as the location of seagrasses close to residential areas with their activities.

The similarity of the categories found in each station does not guarantee that the value of each parameter owned by each station is the same. The size of the value obtained is adjusted to the weight of the calculated value. Some parameters with high weights show significant differences from each station, such as seagrass cover, brightness, seagrass species, and associated fish species. The identified TSI value can be used as a recommendation whether or not, the seagrass area in Tunda Island is to be used as a snorkeling tourism area by considering the ecological conditions of the existing seagrass resources. The map of the suitability value of the seagrass area for snorkeling tours can be seen in Figure 3.

**Carrying Capacity of Seagrass for Snorkeling Tourism**

The carrying capacity of the seagrass area for snorkeling tours obtained in this research, calculated by the RRC formula was 448 people per day with 500 m² per person because the area of the seagrass area on Tunda Island was 11,197 hectares. This carrying capacity is the carrying capacity of the entire existing seagrass area and cannot necessarily be realized.

---

**Table 7. Level of Suitability of Seagrass Areas for Snorkeling Tourism on Tunda Island, Banten**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Station 1</th>
<th>Station 2</th>
<th>Station 3</th>
<th>Station 4</th>
<th>Station 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seagrass Coverage (%)</td>
<td>33.94</td>
<td>10</td>
<td>6.93</td>
<td>5</td>
<td>10.6</td>
</tr>
<tr>
<td>Visibility (%)</td>
<td>100</td>
<td>20</td>
<td>100</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Coral Fish (Family)</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Seagrass Species</td>
<td>3</td>
<td>15</td>
<td>5</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Substrate Type</td>
<td>CS</td>
<td>12</td>
<td>CS</td>
<td>12</td>
<td>CS</td>
</tr>
<tr>
<td>Current Speed (cm.s⁻¹)</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Depth (m)</td>
<td>0.4</td>
<td>4</td>
<td>0.4</td>
<td>4</td>
<td>0.5</td>
</tr>
<tr>
<td>TSI (%)</td>
<td>73.15</td>
<td>77.78</td>
<td>77.78</td>
<td>77.78</td>
<td>59.26</td>
</tr>
<tr>
<td>Category</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td>S3</td>
</tr>
<tr>
<td></td>
<td>Suitable</td>
<td>Suitable</td>
<td>Suitable</td>
<td>Suitable</td>
<td>Conditionally Suitable</td>
</tr>
</tbody>
</table>

*Notes: CS = Coral-Sand, S = Sand, M-S = Muddy-Sand*
In accordance with Indonesia Government Regulation No.18/1994 concerning Nature Tourism Exploitation in the Utilization Zone of National Parks and Natural Tourism Parks, the area permitted to be developed is 10% of the utilization zone area, so that the final value in the utilization of conservation tourism business activities[9]. The value of carrying capacity that can be used in seagrass areas for snorkeling tours on Tunda Island based on the RCU formula is 44 people per day. Tourists who come are expected not to exceed the carrying capacity, so that the seagrass area on the island of Tunda remains in fine condition and sustainable.

Based on the result of the research suggestions that can be made are the use of seagrass areas for snorkeling tourism is recommended to be carried out at station 1 (northern region) and station 4 (southeast region). Besides judging from the seagrass ecological conditions and their accessibility, but also need to accompanied by seagrass rehabilitation efforts to increase the extent of seagrass cover and diversity of seagrass species and seagrass association biota. Either way, for station 2 and station 3, rehabilitation needs to be done before it is utilized for snorkeling marine tourism. It is also necessary to calculate or study the carrying capacity of seagrass areas for snorkeling marine tourism specifically for each station, in order to evaluate the carrying capacity of the area to be more comprehensive.

**CONCLUSION**

Condition of seagrass area in the waters of Tunda Island is, there are five types of seagrasses, namely *Cymodocea rotundata*, *Cymodocea serrulata*, *Enhalus acoroides*, *Halophila ovalis*, and *Thalassia hemprichi*. Percentage of seagrass cover between 6.93% - 34.85%. They are included in the category of rare-moderate, with water conditions classified as fine for seagrass growth and associated biota life.

Based on the suitability value of seagrass areas for snorkeling tourism on Tunda Island, in general seagrass areas in the north, east - northeast and southeast regions of Tunda Island (TSI 73.15% - 77.58%), while seagrass areas in the southern region are suitable conditional (TSI 59.26%). Carrying capacity of seagrass area in Tunda Island covering an area of 11,197 hectares for snorkeling tourism, as many as 44 people per day.
REFERENCES
Identifying Tourism Attractions’ Potentials of Protected Area: A Case Study in Bulue Village, Soppeng District, Indonesia

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Abstract
The purpose of this study was to identify the tourism attractions’ potentials of the landscape that had the major function as protected areas. Bulue Village was selected in this study as nearly 85% of the territory lies inside the protected areas. The comprehensive spatial analysis combined with descriptive analysis was utilized as approaches toward the study. The Scenic Beauty Estimation (SBE) was also carried out to obtain the potential of nature-based tourism attractions based on tourist’s perceptions. The results showed that there were nine spots of attractions that had a high value of SBE. Those attractions were identified as Lejja hot spring (SBE=81.33), Lejja view (SBE=129.33), camping ground (SBE=51.78), Datae hot spring (SBE=71.22), Menawoe waterfall (SBE=184.44), Lapaserengi waterfall (SBE=143.00), Batumurue waterfall (SBE=127.89), Waepuange waterfall (SBE=122.11), and Sarasas-tandre waterfall (SBE=147.44). Only Anoa sanctuary has a moderate value. Nevertheless, there are some issues that need to be considered, in particular, to prevent further forest degradation by providing economic alternatives for the locals and improving the management of the site. These findings have shown the need for finding a specific strategy to develop ecotourism activities based on the characteristics of the landscape.

Keywords: Bulue village, ecotourism in protected area, landscape-based ecotourism, scenic beauty estimation.

INTRODUCTION
Ecotourism is a component of sustainable tourism [1,2]. According to The International Ecotourism Society, ecotourism as responsible travel to natural areas maintains the welfare of the local community and involves interpretation and education [3]. The development of ecotourism has to contribute minimal impact on ecosystems and benefit to the local community’s economy, as well as to respect and value the local culture/local wisdom. Ecotourism is developed using a participatory process that involves all stakeholders and is monitored to detect negative and positive impacts generated from the activities. Meanwhile, it becomes more commons that ecotourism is seen as part of a protected area’s management strategy. The integration of ecotourism with protected areas creates a symbiotic relationship: ecotourism needs protected areas and protected areas need ecotourism [4].

A landscape typically consists of physical, biotic aspects, and human elements [5], which has historical and cultural dimensions [6]. The functions of landscape relate to the provision of environmental goods and services, including production functions (food, clothing, housing, energy), habitat (biodiversity), regulators (various cycles in the biosphere, and atmosphere) and information (beauty, recreation, cultural) [7]. A landscape that functioned as a protected area has a higher vulnerability value than other forms of the area. Landscape utilization activities that ignore the value of vulnerability can harm environmental aspects (water, soil, air, flora, and fauna), cultural (decreasing local wisdom values), and the beauty of the landscape. Landscape inventory and evaluation of natural and spatial culture values recognized as an important step in the planning and development process of a landscape [6].

Bulue Village has various types of landscapes with hilly topography and different altitudes from 80 to 920 m above sea level [8]. As indicated in the map (Fig. 1), nearly 85% of the village’s area is included as the conservation and protected forest. Only 15% of the area is utilized as cultivated areas. Furthermore, Bulue landscape is a part of Batu-batu River catchment area, which flows to Lake Tempe. Currently, the width of Lake Tempe has shrunk extensively due to massive sediment flow from the upstream eroded land in rainy seasons [9]. High erosion in the upstream area was caused by the massive conversion of protected areas into dry land cultivation areas.

There are many human settlements in Bulue Village. Most of the people have lived as farmers so that the potential of forest degradation is very large in the area and tends to increase with the growing population [10]. Forest areas that are relatively critical due to forest degradation can...
Identifying Tourism Attraction Potential of Protected Area (Yuwono, et al.)

reduce the value of natural beauty so that forest management systems that are related to ecotourism are needed to create alternative income for the community. Thus, the purpose of this study is to identify the tourism attraction potential of Bulue Village, which can be used as the driving factor in developing ecotourism.

MATERIAL AND METHOD
To identify the tourism attractions’ potential of Bulue Village, the approaches used were by combining spatial analysis and descriptive analysis [11]. The Scenic Beauty Estimation was also employed to describe the perceptions of the local people/visitors toward tourism attractions potential. The study was Bulue Village, Soppeng District (Fig. 1). Meanwhile, the stages of this study were presented in Figure 2, which is included preliminary studies, data collection, analysis, synthesis, and recommendations.

Data Collection and Analysis
The data in this study obtained from several sources. To build spatial analysis, the data were gained from online and offline searches via internet access and government official agencies. The primary data of the tourism attractions potential were obtained through surveys and interviews. The survey was conducted on landscape elements (land cover), which classified based on object-based image analysis from Spot 6/7 imagery, which was acquired in 2018. The assessment of land cover included a variety of scenery and the uniqueness of attractions. Data were taken in the field, including coordinates and photos of each location. Interviews were conducted with the people who live nearby the potential area. The results of the survey captured accessibility, current utilization activities, and the community livelihood.

To provide information on the perceptions of local people/visitors on the potential attractions and measure the scenic beauty estimation (SBE), a set of the questionnaire were distributed to 30 respondents. The respondents were only given a maximum of eight seconds to give value to each photo of the nature-based tourism attractions. The rating scores ranged from 1 to 10, where a score of 1 indicates the least preferred value, and a score of 10 indicates the most preferred value. The questionnaire results analyzed by using the SBE [12]. The SBE formula is presented in Equation 1. The data were analyzed descriptively by incorporating the results of spatial analysis and scenic beauty estimation.

\[ SBE_x = (Z_x - Z_o) \times 100 \]

Description:
SBE\(_x\) = the estimation of the aesthetic value of \(x\)th photo
\(Z_x\) = the average of \(z\) value (using \(z\) table) of \(x\)th photo
\(Z_o\) = the average of \(z\) value (using \(z\) table) of \(x\)th photo as a standard.

RESULT AND DISCUSSION
Landscape Potentials for Tourism Attraction
Landscape elements of Bulue Village were dominated by secondary forest 56.393% and primary forest 24.24%. Another elements are rainfed field 8.917%, mixed plantation 4.393%, rice field 2.767%, shrub 2.312%, settlement 0.976%, and swamp 0.003% (Fig. 3).

The nature-based tourism attractions were dominated by aquatic-based attractions, in line with the major function of the landscape as the upstream area of the Batu-Batu River, which provides flows to Lake Tempe. Lejja hot spring, Lejja view, Anoa sanctuary, camping ground, Datae hot spring, and Lapaserengi waterfall were located in Lejja Recreation Park. Meanwhile, Menawoe waterfall, Batumurue waterfall, Waepuange waterfall, and Sarasa-tandre waterfall were located in Walanae Protected Forest.

Lejja hot spring has the potential for hot spring water that smell-free of sulfur with relatively large water discharge. It has become the leading tourist destination of Soppeng District [13]. Meanwhile, other potentials have not been chosen nor utilized as tourist destination objects. Anoa sanctuary is a place to save endemic Sulawesi animals outside their natural habitat. Lejja’s view is the natural scenery of the Bulue landscape. The camping ground comprised of a relatively large shrub area in Lejja Recreation Park. In general, accessibility to Lejja hot spring, Anoa sanctuary, Lejja view, and camping ground are paved road. Meanwhile, accessibility to Menawoe waterfall, Batumurue waterfall, Waepuange waterfall, Sarasa-tandre waterfall, Lapaserengi waterfall, and Datae hot spring are secondary roads and trail roads.

Besides the nature-based tourism attractions, the livelihood of Bulue’s people also could attract special traveler, i.e. harvesting honey directly from the forest, and traditionally palm sugar making. The activity of observing the process of taking honey in a tree, eating a beehive containing eggs and larvae mixed with honey, could be used as a tour package, as seen in Figure 4.
Identifying Tourism Attraction Potential of Protected Area
(Yuwono, et al.)

Figure 1. The geographical location of Bulue Village, Soppeng District, Indonesia

Figure 2. Phases of Study Process

- Preliminary study
  - Literature study and location determination
- Data Collection
  - Spatial data collection
  - Imagery classification
  - Landscape element
- Analysis
  - Potential survey
  - Tourist Interview
  - Spatial Analysis
  - Scenic Beauty Estimation
- Synthesis
  - Potential map of nature-based tourism attractions
  - Scenic beauty level of nature-based tourism attractions
- Recommendation
  - Tourism resources of protected area which are potential for ecotourism development
Identifying Tourism Attraction Potential of Protected Area
(Yuwono, et al.)

Figure 3. The nature-based tourism attractions of Bulue village, Soppeng district, Indonesia

Table 1. Scenic beauty estimation value of the nature-based tourism attractions of Bulue Village, Soppeng district, Indonesia (SBE= Scenic Beauty Estimation) (* High SBE score: > 20; Moderate:-20 < SBE score > 20; Low SBE score < -20)

<table>
<thead>
<tr>
<th>No</th>
<th>Nature-based tourism attractions</th>
<th>Description</th>
<th>SBE Score</th>
<th>Scenic Beauty Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lejja hot spring</td>
<td>Smell-free sulfur of hot spring water sources used by visitors. It has become a tourist destination for the relaxing soak activities</td>
<td>81.33</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>Anoa Sanctuary</td>
<td>Built as semi-natural cage in Lejja recreation park for preserving the endemic Sulawesi animals</td>
<td>0.00</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>Lejja view</td>
<td>Portraying the natural scenery of the Bulue landscape</td>
<td>129.33</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>Camping ground</td>
<td>Providing an attractive of natural scenery and potential space for the camping area</td>
<td>51.78</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>Datae hot spring</td>
<td>Potential for warm water recreation which is located near the river flows, mixed between warm water and cold water</td>
<td>71.22</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>Menawoe waterfall</td>
<td>Portraying waterfalls with a total height of ±10 m in a relatively remote area</td>
<td>184.44</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>Lapaserengi waterfall</td>
<td>One level waterfalls with a height of ±5 m located near Datae</td>
<td>143.00</td>
<td>High</td>
</tr>
<tr>
<td>8</td>
<td>Batumurue waterfall</td>
<td>One level waterfalls with a height of ±15 m located near Datae</td>
<td>127.89</td>
<td>High</td>
</tr>
<tr>
<td>9</td>
<td>Waepuange waterfall</td>
<td>Showing one level waterfalls with a height of ±25 m located in a remote area</td>
<td>122.11</td>
<td>High</td>
</tr>
<tr>
<td>10</td>
<td>Sarasa-tandre waterfall</td>
<td>A stratified waterfall with a total height of ±15 m located near Gellenge</td>
<td>147.44</td>
<td>High</td>
</tr>
</tbody>
</table>

The community of Bulue Village is divided into 9 settlements (Mario, Galungkalunge, Lejja, Datae, Gellenge, Kajuara, Poro, Lamatanruk and Wawogalunge). They are agricultural society, as seen as the pattern of the settlement located near to the river and rice fields. Meanwhile, the protected forest area, which is upstream of the river that flows into Datae and Gellenge, has been degraded.

The source of living in the community is dominated by farming. They need the extensification of farming for mixed plantation.
The extensification of farming has caused landscape fragmentation. Landscape fragmentation will change a small portion of native habitat into a new habitat, which triggers the process of emigration and immigration of plant and animal species [7].

The livelihoods of Bulue’s people are mostly dependent on nature. Also, the lack of electricity has encouraged the community to use river flows for micro hydropower plants. However, landscape fragmentation has caused a high fluctuation in river flows. Life dependence on nature has the potential to create strong bonds. Thus, it can be used as social capital to include the community in maintaining the preservation of natural resources.

Scenic Beauty of The Nature-based Tourism Attractions

The results of the tourist’s assessment have been obtained the beauty value of each attraction (Table 1). Calculations using the tabulated data show that Anoa sanctuary has an average value of $z = -0.17$ (closest to 0), so it used as standard value in calculating the SBE. There is only Anoa sanctuary that has a moderate value of scenic beauty. Meanwhile, the other attractions have a high value of scenic beauty. Natural landscape tends to have a high value of SBE [16]. The high value of SBE can be the driving factor in developing ecotourism.

The existence of Lejja hot springs in the Lejja Recreation Park as a leading tourist destination in Soppeng District certainly provides a big opportunity for the ecotourism development of other nature-based tourism attractions in the surrounding area, such as Walanae Protected Forest. It is expected to combine with the livelihood-based tourism attraction of Bulue’s people.

Nearly 85% of the Bulue Village area is a state forest with the function of protected areas. It makes Bulue Village suitable to be a conservation village. Conservation village is a conservation model approach that provides opportunities for people living around conservation areas to be actively involved in efforts to manage conservation areas [17]. Meanwhile, the purpose of establishing conservation village is more directed at efforts to improve the welfare of village communities in and around production forests, protected forests, and conservation forests through empowering local potentials as an effort to increase resilience and the ability of communities to become actors of protection, preservation, and sustainable use. To empower the local potentials, the community needs to be strengthened through the development of the ecotourism network, which is a modification of Village Ecotourism Network (Jaringan Ekowisata Desa - JED) developed in Bali.
JED was formed to realize ecotourism programs based on the community and the environment and as a form of commitment from several community groups who want to determine their future, culture, and environment [18]. Bali is a major tourist destination in Indonesia. Its people have actively implemented Community-Based Ecotourism (CBE) as a reaction to mass tourism activities that not only bring economic growth but also lead to ecological and social costs. The CBE initiative began by forming Jaringan Ekowisata Desa (JED) in collaboration with Yayasan Wisnu and Yayasan Kehati to find a more sustainable approach to tourism through stronger ownership and minimization of negative ecological impacts [19]. To implement CBE in Bulue Village as a strategic approach in developing ecotourism certainly needs modification and adjustment under the characteristics of the landscape also the legal status of the village’s area, which is mostly a state forest area in the form of protected forest and conservation forest. Furthermore, collaborating among stakeholders is fully needed through synchronization of the planning until field implementation.

CONCLUSION

The Bulue Village has the potential of nature-based and livelihood-based tourism attractions with the high value of SBE. There are ten spots of attractions highlighted in the study consisted of five waterfalls, two hot springs, one wildlife sanctuary, one nature scenery, and one camping ground. Nevertheless, there some issues that need to be considered, in particular, to prevent further forest degradation and to provide economic alternatives for the locals as well as to improve the management of the site.

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ICT Usages in Yogyakarta’s Tourist Villages Development

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Abstract

Developmental gap between tourist villages occurs due to differences in tourist attractions, existing facilities, and also the use of Information, Communication, and Technology (ICT). One of the innovations which are presently in line with global development is the use of information technology. This study was aimed at identifying the development of 17 tourist villages using the Butler Tourist Area Life Cycle Theory, determining the use and needs of ICT in tourist villages using the Smart Tourism Destinations Theory, and analyzing the role of ICT in developing tourist villages in the City of Yogyakarta. The results of this study indicated that the dynamics of the development of tourist villages were caused by several factors: availability of human resources, the potential of tourist villages, and tourism awareness of tourist village communities. Besides, the use of ICT in the villages was limited to wi-fi usage and the use of social media such as Facebook and Instagram. Lastly, the role of ICT actively by managers and passively by tourists was able to accelerate the development of tourist villages.

Keywords: ICT, Tourist villages.

INTRODUCTION

Several tourist villages in Yogyakarta have been well developed. For example, Dipowinatan is often visited by Czech tourists. Same as Cokrodiningratan, which attracts Japanese tourists and Purbayan, which attracts USA tourists. One of the indicators used to measure the intelligence level of tourist villages is the accessibility of information [1].

The developmental gap between tourist villages occurs due to differences in tourist attractions and existing facilities. One of the innovations which are presently in line with global development is the use of information technology. It includes information systems, internet, information technology, communication, computer software, networks, along with the hardware. The function of hardware is to process, to send information supported by its following software and also networks [2].

Efforts to evolve tourist villages through the use of information technology are in line with various forms of promotional support and information stipulated in Yogyakarta Mayor Regulation number 115 of 2016 article 15 verse(2) word (f). One of Yogyakarta’s tourism sector opportunities is the development of information technology and social media [3].

Tourist village has an attraction that could attract people to come, getting entertained, and got unique experiences [4]. The important criteria to build a positive relationship between tourism and culture are: 1) Having a routine cultural performance, 2) Participating local community and for additional, participating tourists, 3) Be able to create product/service needed by tourists, and 4) Be able to gain profit from cultural performance [5].

The development of tourist villages could be analyzed by using the Tourist Area Life Cycle theory by Butler. It was explained that there are seven phases of development: Exploration, Involvement, Development, Consolidation, Stagnation, Decline, and Rejuvenation.

![Figure 1. TALC Curve (Source: ijier.net)](image_url)

Tourism destinations should have supported by 4 main components called ‘4A’. It refers to Attraction, Amenities, Access, and Ancillary services including ICT [6].
ICT is a group of technology along with the applications related to an electronic process, storage, and information transfer for various forms of usage [7]. Independent tourism emerged from the synergic relation among stakeholders by technology platform where tourism activities can be instantly given and received [8]. Smart Tourism Destinations made use of 1) Technology embedded environment (Internet of Things, sensors), 2) Responsive processes at micro and macro levels (Intelligent services), 3) End-user devices (Smartphones), and 4) Engaged stakeholders that use the actively use platform to gain information [8]. Smart Tourism Destinations were developed into two categories: 1) SoftSMARTness: collaboration, innovation, leadership (human resources) and 2) HardSMARTness: technology and infrastructures (the heart of smartness) [9].

The development of ICT usages in several countries started from 1970-2007 [7]. Yogyakarta, in 2005, has begun to use the internet and ATM [7]. Then, in 2007, in the same city, the use of ICT facilities and internet cafés were developed [7]. One of the previous researches related to ICT showed that villages managed by using ICT were more flexible against industrial changes and could adjust better [10]. The higher the level of ICT utilization, the faster industrial changes occur. ICT is also one of the determinants that need to be considered in choosing housing locations. Research showed that 55% respondent chose to move on housing location where provides ICT facilities [11]. Besides, ICT also affects economy and movement space changes [12]. From the dynamics of population mobility and the dynamics of the location of economic services, it could be concluded that the future city structure will be determined by ICT usages in various types of activities that shorten travel distance and time [13]. This study was aimed at identifying the development of 17 tourist villages using the Butler Tourist Area Life Cycle Theory, determining the use and needs of Information, Communication, and Technology (ICT) in tourist villages using the Smart Tourism Destinations Theory and analyzing the role of ICT in developing tourist villages in the City of Yogyakarta.

MATERIAL AND METHOD

This study used qualitative research. A literature review was done by reviewing the previous researches, government policies, related books, and other valid data sources. The observation was done in 17 Yogyakarta’s tourist villages by observing either the physical characteristic or social activities. An in-depth interview was done to the 17 managers of tourist villages, which will be clearly explained below.

Data Collection

The in-depth interview technique for each manager in 17 tourist villages was accomplished to disclose its development in a chronological descriptive manner. Three of 17 tourist villages had chosen as the samples in identifying the use and needs of ICT was adopting a purposive sampling technique with criteria for the level of search for tourist villages on the internet: very low, average, very high, so does the unique development. Furthermore, the researcher also conducted independent observation through the internet to obtain additional information regarding the use of ICT and the development of tourist villages in Yogyakarta.

RESULT AND DISCUSSION

Tourist villages Development

The development of The Tamansari Tourist Village has been in the phase of consolidation. It was indicated by the number of tourists who have reached the peak, so that, the quota has set to 500,000 tourists each year, and tourist who came in above 4 pm in each day was forbidden. It was set to avoid public inconvenience. It also indicated by the rise of the craft trade scale (it has already gone international), and the more facilities, accommodations, transportation, and other complementary, needs to be provided. However, tourists who used the accommodation facilities were not the only tourist who aimed to

Data Analysis

This research was using descriptive analysis. It is to show the data and to explain the tourist village development chronologically.

Figure 2. Research Location Map (Source: Yogyakarta Municipal Department of Tourism, 2017)

Tourist villages Development

The development of The Tamansari Tourist Village has been in the phase of consolidation. It was indicated by the number of tourists who have reached the peak, so that, the quota has set to 500,000 tourists each year, and tourist who came in above 4 pm in each day was forbidden. It was set to avoid public inconvenience. It also indicated by the rise of the craft trade scale (it has already gone international), and the more facilities, accommodations, transportation, and other complementary, needs to be provided. However, tourists who used the accommodation facilities were not the only tourist who aimed to
visit Tamansari Tourist Village only. Most of them were tourists who were on the Yogyakarta city tour but looking for the cheap inn and near the city center. The arrival of this visitor despite helping village promotion, but on the other hand, this indicated that the value of tourist villages was fade away because the culture was no longer attracts tourists.

Kadipaten tourist village still in the exploration phase where there were no economic opportunities, either tourism package or its unique product. Besides, the number of tourists could not be predicted even monthly. It was too small. It has happened too in the Kauman tourist village. Cokrodiningratan tourist villages have been in the involvement phase which indicated by the emerging of company supports in facilities development, facilities provided by its local community, profit gained by local community from their facilities providing. Sosromenduran tourist village was in the development phase. It was indicated by the emerging of investors and has been known by their promotion either offline or online.

Dewa Bronto, Sayidan, Sekar Niti, and Pakualaman tourist villages were the same in the involvement phase. Local community has started to provide accommodation facilities and restaurant. The increasing of tourists occurs on holiday.

Becak Maju tourist village still in the exploration phase. It was occurred because of no economic opportunities available, either a tourism package or a unique product. Tahunan, Rejowinangun, and Prenggan tourist villages have been in the development phase, which has been known by people either from offline or online media. The trade scale has already raised to international, and they improve their village’s promotion.

Dipowinatan tourist village has been in the consolidation phase. It was indicated by the wider promotion they did and the emerging of the competitor. Warungboto tourist village has been the most developed village among the 16 others. The phase of development has been in the highest one, which is the rejuvenation phase. Rejuvenation phase indicated by making new alternative attractions. This village has developed three phases at the same time in just three months only. Whereas, one last village, Pandeyan, experienced an anomaly development because it didn’t experience sequent phase per phase. But it directly collapses from the exploration phase to the decline phase. The decline phase is the lowest phase where tourist villages couldn’t compete with the surroundings, quality service decreasing, and it was affected by the function of its tourist village. People was not having pride anymore toward their tourist village because they didn’t have any feeling through the function of it, especially from the economy side.

The visualization of the development phase for each tourist village showed in the Figure 3 and 4.
ICT Usages and Needs

ICT usage and needs in the development of tourist villages measured from HardSmartness (hardware) and SoftSmartness (software) aspects. Hardware are including Wi-Fi, NFC, AR, and APP(s) for ‘technology embedded environment’ indicator and ‘End-user’ hardwares such as smartphones and laptops. Meanwhile, softsmartness could be applications, social media, and other various forms of activities that improving expertise on the use of ICT [8]. All 17 tourist village managers have used smartphones. Only one from four hardware has been provided by governance for a tourist village. The hardware is Wi-Fi. Fourteen tourist villages have been facilitated Wi-Fi by Yogyakarta Governance. The other three were still waiting for the Wi-Fi installation (Fig. 5).

NFC hasn’t been installed in tourist villages to be used for ticketing or other transaction. It because tourist villages were not a one-gate-tourism destination. Tourists could enter tourist villages from any gate they found without any fee. Hardware used in tourist villages is a smartphone, laptop, and Wi-Fi. Smartphone has become primary hardware owned by each tourist village managers. This hardware used for receiving the reservation of tourism package, selling products/services, and receiving critics and suggestions from tourists.

The use of softsmartness includes ICT softwares, networks, and human resources. ICT software, in this case, were smartphone applications like WhatsApp and google maps. Meanwhile, social media networks were limited to Facebook, Instagram, Youtube, and Blog/Website. Five tourist villages (29%), has 3 of 3 social media which are Website, Facebook, and Instagram. Three tourist villages (18%) have 2 of 3 social media, seven tourist villages only have 1 social media, and the other 2 tourist villages have any. The number of tourist villages searches based on its name on the internet also observed by www.brand24.com. It is a site that could count how many does the keyword search in the current time. In this research, the time set is May 17, 2019, to June 17, 2019.
Table 1. Number of Tourist Villages Search name as a Keyword Search

<table>
<thead>
<tr>
<th>Village</th>
<th>Facebook</th>
<th>Instagram</th>
<th>Blog</th>
<th>Youtube</th>
<th>Website</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamansari</td>
<td>79</td>
<td>2042</td>
<td>956</td>
<td>26</td>
<td>265</td>
<td>3368</td>
</tr>
<tr>
<td>Kauman</td>
<td>139</td>
<td>202</td>
<td>142</td>
<td>0</td>
<td>214</td>
<td>697</td>
</tr>
<tr>
<td>Kadipaten</td>
<td>58</td>
<td>197</td>
<td>144</td>
<td>30</td>
<td>92</td>
<td>521</td>
</tr>
<tr>
<td>Pakualaman</td>
<td>10</td>
<td>124</td>
<td>291</td>
<td>21</td>
<td>71</td>
<td>517</td>
</tr>
<tr>
<td>Warungboto</td>
<td>3</td>
<td>191</td>
<td>13</td>
<td>29</td>
<td>8</td>
<td>244</td>
</tr>
<tr>
<td>Rejowinangun</td>
<td>19</td>
<td>88</td>
<td>14</td>
<td>31</td>
<td>17</td>
<td>169</td>
</tr>
<tr>
<td>Sayidan</td>
<td>8</td>
<td>69</td>
<td>17</td>
<td>0</td>
<td>26</td>
<td>160</td>
</tr>
<tr>
<td>Purbayan</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>22</td>
<td>128</td>
</tr>
<tr>
<td>Pandeyan</td>
<td>15</td>
<td>58</td>
<td>29</td>
<td>7</td>
<td>13</td>
<td>122</td>
</tr>
<tr>
<td>Sekar Niti</td>
<td>3</td>
<td>89</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Bener</td>
<td>13</td>
<td>18</td>
<td>11</td>
<td>11</td>
<td>13</td>
<td>66</td>
</tr>
<tr>
<td>Kricak</td>
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<td>18</td>
<td>11</td>
<td>11</td>
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<td>66</td>
</tr>
<tr>
<td>DewaBronto</td>
<td>2</td>
<td>16</td>
<td>11</td>
<td>1</td>
<td>14</td>
<td>44</td>
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<tr>
<td>Prenggan</td>
<td>5</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>36</td>
</tr>
<tr>
<td>Sosromenduran</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>0</td>
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<td>Cokrodiningratan</td>
<td>0</td>
<td>13</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>Dipowinatan</td>
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<td>1</td>
<td>3</td>
<td>3</td>
<td>14</td>
<td>21</td>
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<tr>
<td>Tahunan</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


The table 1 above shows the number of tourist villages keyword searches. Within a month (May 17 to June 17, 2019), the most discussed tourist village is Tamansari: 3368 words search. The tourist village that most discussed on Facebook was Kauman: 139 words. Then, the most tourist village discussed on the Instagram, blog, and website was Tamansari: 2042, 956, 265. The most discussed on Youtube was Sayidan: 40. Last, the most discussed tourist villages on the website are Tamansari and Kauman (265 and 214 discussed).

The other ICT usage is the use of WhatsApp messenger. It used to connect government and intervillage tourist village managers by communication forum virtual group. This virtual group became the main promotion of all the tourist villages. Then, google maps, as one of the most applications installed on tourist village managers are used to drive tourists to come to the tourist villages. Social media that widely used by all of the tourist village managers are Instagram and website. But, not all of them were active. Figure 7 is a map of the search level of tourist villages based on the brand24 site.
Samples selected from the lowest, average, and highest class. Those are Dipowinatan, Warungboto, and Tamansari, respectively.

Dipowinatan has Facebook, Instagram, and website accounts. But the website is inactive. Tamansari and Warungboto both have Facebook and Instagram accounts. Warungboto’s Facebook account is active, while both of Tamansari’s accounts are inactive.

The needs of ICT devices have been felt enough by all tourist villages in Yogyakarta. It turned out because most of the tourist villages have been facilitated with Wi-Fi by the government, although it hasn’t been massively utilized. A matter that needed now is ICT socialization, especially for the SMEs perpetrator. This socialization is needed for doing online marketing.

The needs of online marketing also felt by other tourist villages as the findings in the study toward Village Development Movement (Gerakan Desa Membangun - GDM). This program was established since the critics toward the top-down development where the village’s role as an object, not a subject. GDM is a program related to social, economic, cultural, political, and technology aspects. There, villages trained to stand by their selves by improving villages management, including the ICT usages such as websites for their local products [14]. This finding was also similar to research on the Jambearum tourist village. The findings showed that the SME’s had promoted their product by SMS, gethok tular, exhibition, brochures, but very few people have used the internet as s marketing media. So they wanted the website that contains all of the products of all SME’s there [15].

This research about ICT usages in tourist villages development was giving the same result as two previous researches that people have not used the internet well for promoting their product and attraction. Besides villages, ICT has been a factor in choosing housing [11]. People were tending to choose in a housing that provides ICT facilities [11]. It explained that ICT was the main factor. Further than that, in the urbanization era, ICT has changed people’s behaviors such as the changing shopping methods (from offline to online), changing working methods (remote working by teleconference), and communicating methods [16]. It concluded that ICT would make a change in the economic and mobility space [12]. So, it was a need for the tourist village's local community to get embedded with ICT due to face globalization and develop their villages.

The Role of ICT in Developing the Selected Tourist villages

The role of ICT in developing tourist villages divided into two categories: active from tourist village managers and passive from tourists. Tamansari tourist village tends to the passive role through their tourist who shared their photos after visiting Tamansari on Instagram. Individual observation through hashtags search on Instagram has done to find out how many posts shown. Through hashtag ‘#tamansari’, it found out 224669 photos (June 22, 2019) uploaded by tourists. Meanwhile, Tamansari’s Instagram and Facebook accounts were inactive.

Warungboto tourist village has a typical attraction as Tamansari. But, Warungboto’s visit is still free. Individual observation through hashtags searches ‘#situswarungboto’ found out 9266 photos (June 22nd, 2019). It was 480 numbers above the previous one on April 26th, 2019. Tamansari and Warungboto have a differentiation related to the role of ICT. Warungboto could balance the role, both passive and active, to raise their tourist village’s promotion. Meanwhile, Tamansari mostly tends to a passive role.

Dipowinatan tourist village has a small number of searches on the internet based on brand24. Social media they owned were also inactive. It turned out that the target of tourists is the Czech tourist. The customer of their tourism package was only from international tourist, especially Czech. This focused tourist market target effects on the services provided. ICT’s role as the strategy to promote their tourist villages is still limited. They prefer using a repeater, someone whose origin was in Dipowinatan, but now is living in Czech and doing promotion from people to people.

CONCLUSION

The dynamics of the development of tourist villages were caused by several factors, including the availability of human resources, which are the driving force, the potential of tourist villages, and tourism awareness of tourist village communities. The use of ICT in the villages was limited to Wi-Fi usage and the use of social media such as Facebook and Instagram. The role of ICT actively by managers and passively by tourists was able to accelerate the development of tourist villages.
REFERENCES


COVID-19 and the Moment to Evaluate Tourism Euphoria, Indonesia

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Abstract
COVID-19 outbreak has been influenced tourism sectors in Indonesia. Many economic activity related to tourism industry was drop and many tourism worker loss jobs. In the absent of tourism activity, the natural ecosystem has opportunities to restore the degraded system caused by intensive use of tourist visitation. Traveling responsible to pandemic disease spread through the tourist movement and human physical contact. New tourism should be able to promote responsible travels through the management of visitor, reduce mass tourism and create high tourism product which are able to support economic benefits to local community, socio-cultural aspect preservation, and environmental conservation. The quality is important rather than quantity or the number of tourist. COVID-19 pandemic provides significant lesson learned for new tourism implementation in Indonesia.

Keywords: environmental conservation, mass tourism, responsible tourism, sustainable tourism.

INTRODUCTION
COVID-19 suddenly destroys the tourism sector in Indonesia. The ambitious target of tourism grows has disturbed by new virus strains, which spread very fast. The new pandemic called Corona Virus Disease firstly identified in Wuhan in December 2019, and rapidly spread to Europe, America, East Asia, and Southeast Asia. COVID-19 identified as a new strain of corona virus (SARS-CoV-2) cause serious pneumonia. UNWTO report that global tourism sectors significantly affected by COVID-19 pandemic [1,2,3].

Since the first case of COVID-19 in Jakarta, the confirmed COVID-19 case has been reported increased significantly. The local transmission continuously grows a function of government late responses, community poor literacy, awareness about pathogens pandemic, lack of health instrument to identify pathogens spreads, and lack of health system readiness [4,5,6]. Without comprehensive emergency actions and community participation, there is a potentiality for Indonesia as a new epicenter of the COVID-19 pandemic.

Global pandemic management argues that human travels should be minimized to reduce pathogens spreads [1,7]. Global policy to restrict traveling causes a significant tourist arrival in Indonesia. On February 5th, 2020, the Indonesian government officially suspend flight to mainland China. By April 24th, 2020, the Indonesian government closed international and domestic flight [8]. Central Bureau of Statistics of Indonesia reported international tourist arrivals in March 2020 decrease 45.50% compared to February 2020. Compared to March 2019, international tourism arrivals decreased by 64.11% [9]. These lead to a significant impact on the tourism industry in Indonesia. The aim of the paper was to describe the Indonesian responses to COVID-19 pandemic, especially in tourism sectors and the government scenarios in the tourism industry recovery. The COVID-19 pandemic as a moment to evaluate tourism was discussed to enhance the future sustainability and competitiveness of tourism industry in Indonesia. Recent literature reviews, document reports, and newspaper content analysis were done to construct discussion. The discussion focused on the recent Indonesian responses to COVID Pandemic, and argument to establish a new approach in tourism implementation in Indonesia.

Indonesian Responses to COVID-19 Pandemic
Indonesia’s government argues that managing human movement, traveling, and strictly control community health with COVID-19 symptoms is important to minimize the recent Corona virus outbreak. In order to minimize outbreak potentiality in the Indonesian archipelago that caused by tourism activities, international flight and visa on arrivals policy were suspended. Health checks were implemented in many sites, including airport, seaport, and terminals.

Numerous regulations were released as responses to minimize COVID-19 outbreaks. Some crucial regulations were released related to the restriction of human concentration in a particular area and human movement. It is
particularly important because May has many holidays, and there is a collective leave of Eid-al-Fitr, the great day of Muslims in Indonesia. Every year, there is significant people movement to visit relatives and recreation activities during the collective leave of Eid-al-Fitr. In response to these situations, the Indonesian government released some significant regulations related to traveling. It includes:

- Regulation No. 25/2020 regulates the use of transport vehicles during the exodus (also known as mudik or pulang kampung, which translates to going home) season that will come in the last weeks of May (issued by the Ministry of Transportation) [8].
- Circular No. HK.02.01/Menkes/332/2020 on Health Protocols for Indonesians or foreign nationals arriving from overseas into areas where PSBB has been declared (issued by the Ministry of Health) [10].

Indonesian government identifies numerous people to lose jobs as an impact of the COVID-19 pandemic. International and domestic flight cancels influences travel industry jobs decrease significantly. In the accommodation sector, the number of guests in hotels, resort, lodges, and home stay was decreasing sharply. Domestic transportation stopped, and access to attractions was closed to minimize the coronavirus spread. According to Mr. Sukamdani, head of PHRI, about 1.642 hotel and 353 restaurant and tourism attractions have closed as an impact of the COVID-19 outbreak. These lead to the loss of 4 US$ (equal to 62 trillion rupiahs) potential revenue generated from tourism sectors. The most serious impacted area included Bali, Batam, and Manado [12]. Decrease of the tourism industry in such place influence the national economic earnings from tourism.

COVID-19 has leads to the economic crisis, especially among workers works in tourism industry. To cope with such an economic crisis, the Indonesia government release Bantuan Langsung Tunai (Direct Cash Assistance, a temporary cash transfer program) to tourism workers who are seriously affected by the COVID-19 outbreak. The Ministry of Tourism allocates 500 billion rupiahs to support tourism workers through the Direct Cash Assistance program. The Indonesian government also released numerous workshops and training to increase human capacity in tourism sectors [13].

MOMENT TO EVALUATE TOURISM

Tourism rapid growth in Indonesia is an interesting phenomenon. In the past decades, tourism has contributed to a significant role in national economic earning in Indonesia, but it was received little attention, especially in the development context. The intensive tourism development in Indonesia took place in 2015 through the initial development of a strategy called “new 10 Bali”. The ambitious international tourist arrival was targeted at 20 million by the end of 2019 [14]. Numerous infrastructures to support tourism growth were developed. It was accompanied by massive training and skill improvement program to tourism sector workers and communities surrounding tourism destinations. The community development especially implemented to prepare the community as an active party in optimizing cultural and natural resources as a tourism attraction.

The euphoria of tourism in the local context was shown by the growth of village tourism sites (Desa Wisata). The precise number of village tourism was not available, but many areas report the significant increase in village tourism number. From the online newspaper and tourism websites, the Ministry of Village, Disadvantaged Regions Development, and Transmigration (KEMENDES) have the target to create ten thousand villages tourism. By August 2019, it claimed that the number of village tourism was 7,275 or equal to 9.75% of total villages in Indonesia.

According to BPS-Statistic Indonesia, the potential number of village tourism sites in Indonesia in 2018 was 1,734 sites. The highest number of village tourism was found in Java-Bali (857 sites), followed by Sumatera (355 villages tourism sites), Nusa Tenggara (187 villages sites), Sulawesi (119 villages sites), Kalimantan (117 villages sites), Papua (74 villages sites) and Maluku region (23 village sites). Another report mentioned Bali has 110 villages tourism, and claimed as the province with the highest village tourism number [15].

By 2019, East Java reported 290 sites as tourism villages, and the number could increase in the near future. From 290 village sites, only 26 sites have been reported visited by tourists [16]. There is no study was conducted to describe the reason behind the less number of the visited area
compared to the reported sites. Besides the problems of data generated from the field, it seems that the declaration of villages as village tourism without comprehensive planning contributes to the less-visited sites. The top-down approach of village tourism development is dominant rather than bottom-up initiation.

Tourism in the village area or forest adjacent to the villages has created Self-Portrait spots to attract tourists. The creativity and innovation to create interesting tourism object in village tourism sites has been fast developed, even, it is sometimes beyond normality of natural features. The original rural landscapes often contaminated by numerous tourism attractions. Tourism program which is able to deliver environmental messages were absent, lead to the fail of environmental education and awareness programs.

Mass tourism is another issue of tourism implementation in Indonesia, especially in villages and natural areas. It has been widely criticized that the high number of tourists in the natural area has a negative impact on the ecosystem. Problem with serious mass tourism was observed in Mt. Bromo [17,18]. Natural beach is the other example of sites with abundance visitors in fragile ecosystem.

Problems with the sudden increase in tourist visitation contribute to the problems in the area of the villages. The traffic jam was the common problems related to the abundance of tourist vehicles. It was often followed by soil erosion, dust pollution, vegetation disturbance along corridors, and waste abundance. Parking area availability is often in problems with the abundance of car and tourist vehicle. These lead to social problems in the local community.

The current COVID-19 outbreak has stop tourism activity and leads the natural ecosystem in a temporary break. It is a good sound for environmental resiliency after high-intensity use of the natural ecosystem as tourism destinations. Conservationists, photographers, and news reporters report some wild species during the pandemic era. In Mt. Unggaran, conservationists from Universitas Negeri Semarang found deer, eagle, hornbill, Javan langur, and pigs roaming freely in empty habitat [18]. Sumatran serow was reported rarely found, but it was captured by the camera at the end of May in Leuser national park [20]. There are no scientific studies to confirm the relationship of less human activity during pandemic and wildlife emergence. However, COVID-19 outbreaks seem to contribute to the ecosystem resilience after heavy human disturbance.

Tourism without proper management is the main factor in the rapid pandemic spread. Three months of COVID-19 pandemic incident has hit the tourism sector in Indonesia. Strict control and limitation in traveling, avoiding crowding, and enhancing physical distancing to minimize pandemic diseases spread provides a clear argument to the importance of visitor management, especially in visitor numbers in limited space recreation sites. Health protocols against pandemic were established and promoted to all stakeholders related to the tourism industry. The new regulation and implementation of tourism through visitor management were introduced to minimize the pathogens spreads. Lesson learned from three months within pandemic provides evidence and suggestion to consider the carrying capacity and avoid mass tourism.

Recent policy to open recreation sites, however, should be criticized to ensure the past worst of tourism practices and its impact were not repeated. Environmental issues should be put as a crucial point since the aspect influence the quality of destination, including health issues in recreation sites. Reducing tourist numbers without disturbing economic potential loss should be the main agenda of tourism planning and implementation. Attempts to create a high quality of tourism experiences in the natural tourism area were urgent to increase the economic benefits generated from visitation in controlled visitor numbers. The quality is important rather than quantity or the number of tourists.

A recent trend in “new normal” provides new opportunities for new tourism with smarter and consider economic, socio-cultural, and environmental balance. This linear with the recent global tourism trend, in which tourism should contribute to the Sustainable Development Goals. Tourism should be contributing to the increase in human life through health quality. Specifically, tourism should be able to reduce potential mechanisms for pandemic disease threats, provides experience to live within sustainable living frameworks, and provides healthy food and environment to support the sustainability of man in the biosphere [21].

Indonesia movement and the local community should be able to changes the aspect
tourism models (i.e. mass tourism) to the responsible tourism through:
1) Evaluate the impact of aspect tourism in social, cultural, and environmental issues
2) Establish and develop a mechanism to meet sustainable tourism business
3) Increase local government, planner, field manager, and the local community participation to be able to think and implement sustainable tourism
4) Strengthen stakeholder support to implement sustainable tourism

In the recent rapid tourism growth in Indonesia, these aspects crucial to accelerate responsible tourism and reduce mass tourism waves in Indonesia. There should be the spirit in planning and implementation that the quality is important rather than quantity or the number of tourists.

CONCLUSION
COVID-19 pandemic provides opportunities to re-thinking tourism practices and implementation. Since tourism is a potential vehicle for disease spreads, the management of tourism destinations to be able to minimize pandemic disease spread was crucial. Mass tourism should be evaluated, and tourism programs with high quality of the product should be promoted to increase the economic benefit of tourism, appreciate the socio-cultural aspect of the local community and conserve the environment.

REFERENCES
COVID-19, Moment to Evaluate Tourism Euphoria (Hakim)


FOCUS AND SCOPE
Competitiveness of destinations, products and Indonesian tourism business; Diversification of tourism products; Incentive system of business and investment in tourism; Information, promotion and communication in tourism; Tourism supporting infrastructure; Security and convenience in tourism; Tourism policy; Unique tourism community life (living culture); Local knowledge, traditions, and cultural diversity; Diversity and attractions in ecotourism; Diversity of natural attractions in ecotourism; Pluralistic diversity of ecotourism society; Diversity of ecotourism activities; Hospitality of the local resident; The quality of tourism services; Quality of HR in tourism (Standard, accreditation and competence certification); The market share of tourism and integrated marketing system; Package of tourism attraction; Development of tourism regions; Community based Eco-Tourism.

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