The Impact of Information Technology on Tourism Development Strategy

I Ketut Nama[1], C. Ambar Pujiharjanto[1], Budi Santosa[2], Rias Wenerda[1]

[1]Faculty of Economics and Business, UPN Veteran Yogyakarta, Indonesia

[2]Faculty of Industrial Technology, UPN Veteran Yogyakarta, Indonesia

Abstract

Along with the development of industry 4.0, conventional tourism development strategies have become irrelevant. The evolving information technology demands rapid adjustments in order to survive in the market. The purposes of this study are to analyze internal and external factors of the development of tourist destinations based on the use of information technology, using SWOT analysis and the ordinary least square model. The results of this study indicate various strategies that can be carried out by a tourism destination in order to compete with similar destinations. Another result is that travel behavior, age, and gender can affect the tendency to agree in the tourism development based on the use of information technology. The implication is that changes in information technology must be immediately responded to in order to survive in competition.

Keywords: *Tourism, Information Technology, Development Strategy, SWOT*

INTRODUCTION

Tourism is an important industry that makes a significant contribution to the economy and is considered one of the largest industries in the world (Ilić & Nikolić, 2019). Tourism has grown faster than other economic activities and continues to grow strongly, and can create jobs and increase economic growth (Nikoli & Lazakidou, 2019; UNWTO, 2020). Advances in information technology have changed the behavior of tourists. Quick adaptation in an innovative way is a necessity in order to survive in the fierce competition (Kozak et al., 2010; Tuzunkan, 2017).

Seeing the development of tourism in Yogyakarta, there has been a shift in the interest of tourists visiting areas. In 2017-2018, Bantul Regency ranked first in the area with the most tourist visits, around 35 percent of the total tourists in DIY. However, there has been a decline in the growth of the number of tourists in the Bantul Regency. In 2019, the position of Bantul Regency had been shifted by Sleman Regency (BPS, 2020).

The Taman Ingas Kali Gawe Tourism Village in Bantul Regency is a new destination that has emerged due to the Covid 19 pandemic. The large number of residents affected by Covid-19 encourages residents to create tourist destinations according to the village potential. As a new destination, Taman Ingas Kali Gawe has limitations in managing and adapting to the rapid changes in the environment and information technology. So that this study aims to evaluate the internal and external factors of tourism development, then develop the policy strategy, and determining the factors that influence tourism development based on the use of information technology.

LITERATURE REVIEW

The development of the tourism sector today cannot be separated from the development of information technology. New technologies, such as IoT and artificial intelligence, are becoming very important to achieve more efficiency and productivity in the tourism industry. The ability to collect data from various sources and send it to the platform, which is then analyzed and used to improve the decision-making process, is known as Big Data.

Areas that have implemented the Smart City concept will be better prepared to transfer the data needed to manage tourism destinations, known as Smart Destinations. This condition shows that Smart Destinations are the same as Smart City with a new tourism management layer. So, all Smart City applications that use IoT and other technologies can be implemented directly in Smart Destinations. The utilization of Smart Destinations aims to improve the welfare of residents in tourist destinations and spend their time earning a living from these tourist destinations.

This whole process also requires changing the mindset of tourists to become digital tourists. Currently, the pattern of behavior of tourists in travel has changed. They are now spending less time staying at tourist destinations, but with increasing frequency of traveling accompanied by mobile devices, especially Smartphones, during almost every stage of their journey (before/preparation – during travel/stay – after/memory).

Travelers looking to permanently connect, generate and use data throughout their entire travel lifecycle will need various digital services to help make their experience better. Personalization of experience is also another critical role that IoT technology can play. This condition is also a direct consequence of the level of competitiveness of tourist destinations with one another. The changes generated by the new trends of the tourism industry, together with the new needs and requirements of tourists and the demand for tourism destinations to continue to be competitive, have become the basis for the concept of Smart Tourism Destinations (STD).

The use of information technology is one of the most explored fields in tourism technology (Cai et al., 2019). With the rapid development and cutting-edge implementation of information technology in tourism, it is necessary to update technology in tourism and set the research agenda for future research. Several other articles in a similar vein have been conducted (Zhang et al., 2019; Navío-Marco et al., 2018; Liang et al., 2017). At the same time, some other reviews focus on mobile technology and social media in the tourism industry (Choi & Hye, 2018; Leung et al., 2013). The others provide a more general picture of the progress of e-Tourism, including the development of tourist villages towards smart villages, where the village can integrate village development according to its potential with technology (Mihajlović & Strugar, 2015; Kumar & Shekhar, 2020).

Tourism is a service sector where consumer satisfaction is the main key in its development. Consumer behavior that changes along with changes in environment and technology must be responded to quickly through innovation (Tuzunkan, 2017). Research on the importance of innovation in tourism was also conducted by Kozak et al. (2010). Tourism has an abstract product and depends on the socio-cultural of the local community as well as the psychology and habits of tourists, so innovation is needed to win the competition. Kumar & Shekhar (2020) analyzed the importance of using technology in tourism with a literature study. Many previous studies focused on literature studies, so this research was carried out by developing a quantitative analysis model.

RESEARCH METHOD
Data
Research data were collected from 200 respondents consisting of managers and visitors of Taman Ingas Kali Gawe in May 2021. Data collection techniques using purposive random sampling. The purpose of choosing this method is so that the population can be represented in terms of gender, age, occupation, and education.

SWOT Analysis
In this study, the development strategy of Taman Ingas Kali Gawe is based on SWOT analysis. This analysis is based on the logic that maximizes the power (Strengths) and opportunities (Opportunities) but simultaneously can minimize your weaknesses (Weaknesses) and threats (Threats). In addition, this instrument provides a simple way to estimate the best way to execute a strategy (Rangkuti, 2006). In addition, this method is also beneficial in the planning process related to what can be achieved and what things need to be considered. The success of a strategy that has been determined is very dependent on how much the strategy is in accordance with changes in the environment, competition, and organizational situation (Rangkuti, 2014).

Ordinary Least Squares
Ordinary Least Squares (OLS) is an econometric method in which the independent variables are the explanatory variables, and the dependent variable is the variable described in a linear equation. OLS is a regression method that minimizes the number of errors squared (Gujarati, 2012). A multiple linear regression model determines the relationship of more than two variables, one of which is the dependent variable and the others are independent variables (Gujarati and Porter, 2009). In linear regression analysis, the final result is a population regression function obtained from the sample regression function, which can later be used for estimation. The OLS model in this study, the use of information technology in tourism development as a dependent variable. The independent variables are habit, age, and gender. Habit refers to travel patterns or tourist behavior.

FINDING AND DISCUSSION
SWOT Analysis
SWOT Analysis is strategic planning techniques that are useful for evaluating the strength (S) and weakness (W), opportunities (O) and threats (T) in a project. The SWOT analysis method is an excellent tool to find the problem from four (4) different sides, namely:
   a. How can strength take advantage of the existing opportunity.
   b. How to overcome weaknesses that can prevent profits.
   c. How strengths can deal with existing threats.
   d. How to overcome weaknesses that can make threats become real or create a new threat.
Identification of internal factors (strengths and weaknesses) and external factors (opportunities and threats) faced by the Taman Ingas Kali Gawe tourist destination can be seen in Table 1 below.

Table 1. SWOT Tourism Destinations Taman Ingas Kali Gawe

STRENGTHS
1. Cool rural atmosphere
2. Family culinary tourism
3. Location close to tourist routes to Gunungkidul and Prambanan
4. High management commitment in efforts to develop destinations
WEAKNESS
1. Access to roads
2. Side by side with waste bank destination
3. Management destination ability is low
4. Data recording is manual
5. The utilization of information technology is very low
6. Do not have a clear development plan
7. Local/village government support is low
OPPORTUNITY
1. Development of information technology
2. Local economic empowerment
3. Cooperation with other parties, both government, private and universities
THREATS
1. Development of other similar tourist destinations
2. Dynamic tourist behavior
3. Covid 19 pandemic

Based on the identification of the SWOT components in Table 1, a strategy can be drawn up as in Table 2, which includes four strategies, namely:

1. A strategy that supports an aggressive growth policy (growth-oriented strategy) by:
    a. Destination arrangement.
    b. Product diversification and quality improvement.
    c. Build cooperation stronger and broader with stakeholders.
    d. Increased promotion by utilizing information technology.
2. Strategy by minimizing internal problems so that they can seize better market opportunities, by:
    a. Improving destination management through various training and mentoring.
    b. Utilization of information systems.
    c. Expanding the network of cooperation with the government, private sector, and universities.
    d. Develop an action plan for destination development.
3. The strategy that must be applied is to use strength to take advantage of long-term opportunities with a diversification strategy (product/market) by:
    a. Developing destinations according to tourist needs.
    b. Destination promotion.
    c. Implementation of strict health protocols.
4. Strategies to deal with situations that are very unfavorable due to internal problems and various threats. Strategies that can be done are:
    a. Maintaining the establishment of the management system.
    b. Capability improvement and development.

Table 2. SWOT Strategy for Taman Ingas Kali Gawe Tourism Destinations

Internal / External	Strength	Weakness
Opportunities	**SO Strategies** 1. Destination arrangement 2. Product diversification and quality improvement 3. Building cooperation stronger and broader with stakeholders. 4. Increased promotion by utilizing information technology	**WO Strategies** 1. Improved destination management through various training and mentoring 2. Utilization of information systems 3. Expanding cooperation networks with government, private sector, and universities 4. Develop action plans for destination development
Threats	**ST Strategies** 1. Destination development according to tourist needs 2. Promotion of destinations 3. Implementation of strict health protocols	**WT Strategies** 1. Maintain the establishment of the management system 2. Improvement and development of capabilities

Analysis of the Ordinary Least Squares Model

Development of information technology-based tourism destinations (Y) is influenced by various factors, such as travel behavior (Habit), age (Age), and gender (Gender). The regression results in Table 3 show that the variables of travel behavior (Habit) and age (Age) have a significant effect on the 10 percent alpha, and gender (Gender) has a significant effect on the 5 percent alpha. The regression coefficient for the travel behavior variable is positive, meaning that respondents who like to travel are more agreeable to the development of information technology-based tourist destinations. Information technology makes it easier for tourists who travel frequently. Information about destinations, especially new ones, can be easily found through the internet or social media. The role of information technology in promoting tourism has been carried out in many studies.

Table 3. OLS Model Regression Results
Dependent Variable: Y
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.319058	0.295478	11.23283	0.0000
HABIT	0.123915	0.062529	1.981733	0.0502**
AGE	-0.009989	0.005394	-1.851847	0.0669**
GENDER	-0.337719	0.139001	-2.429620	0.0168*

Note: * significant at α=5%, ** significant at α=10%

Table 4. Classical Assumption Test Results

Test	Results	Conclusion
Normality	Prob Jarque-Bera = 0,900	Data normally distributed
Heteroscedasticity	Prob Obs*R-squared = 0,566	No heteroscedasticity
Multicollinearity	Nilai Covariance Matrix < 0.8	No multi collinearity
Autocorrelation	Prob Obs*R-squared = 0.051	No autocorrelation

The regression coefficient of the age variable is negative, meaning that millennials tend to agree more with the development of information technology-based tourism destinations. The younger generation is information literate which is a huge market potential for the tourism sector. Tourism development must be able to accommodate the needs of millennials attached to the use of information technology. Likewise, the coefficient of the gender variable is negative. This result means that men tend to disagree with information technology-based destination development, and women agree with information technology-based destination development. Women are active users of social media, have a greater tendency to use tourism services by utilizing information technology. The results of this study complement previous research in terms of the variety of factors that influence tourism development based on information technology.

CONCLUSION

The growth of the tourism sector cannot be separated from how the management of tourist destinations can optimize their strengths by minimizing existing weaknesses, capturing opportunities, and avoiding emerging threats. Technology is an essential factor today that cannot be ignored. Destination development that cannot adapt quickly to dynamic technological changes will be far behind other similar destinations. The increasingly fierce competition can no longer be faced with conventional methods but must constantly innovate and synergize with technology.

The results of the study indicate that the tourism development strategy in Taman Ingas Kali Gawe should utilize information technology. Visitors who often travel, millennials, and women who use social media tend to agree on the development of tourism based on the use of information technology. Further research can be developed through the use of more specific technologies such as the Internet of Things (IoT), artificial intelligence, and big data. Determination of tourism development strategies can also be done using different analyses of strategic planning models, such as BCG Matrix, TOWS Matrix, Grand Strategy Matrix, and Internal-External Matrix. The purpose of all these analyzes is to develop strategies that can be applied in the face of competition. This study focuses on case studies in one tourist destination so that the object of the study can be expanded in further studies.

ACKNOWLEDGEMENT

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