

# Developing Promotion of Tourist Village Using Applied Technological Innovation: An Empirical Study

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**ABSTRACT :** *One of the efforts to strengthen sectoral economic growth and promote potential tourist village destinations in West Java Province, Indonesia, is to develop them through applied technological innovation. The lack of applied technological innovation is a problematic issue that will impact the development and promotion of potential tourist village destinations, especially in their development through web-based Geographic Information Systems (GIS) and artificial intelligence (AI) utilization in the current digital era. This empirical study aims to empirically analyze the influence of applied technological innovation (web-based GIS) and the use of AI) on the development and promotion of potential tourist village destinations in the case of seven tourist villages in West Java, Indonesia. An empirical survey by distributing questionnaires online, and data collection using purposive random sampling techniques were carried out in this quantitative research. Valid data is processed using smart PLS software. The main results reveal that the application of technological innovation through the development of web-based GIS and the use of AI has a positive and significant effect on the promotion of potential tourist village destinations. Hopefully, this research can contribute significantly to strengthening rural economic growth in the tourist village destination sector in West Java Province, Indonesia,*

**KEYWORDS** –*Artificial Intelligence, Promotion; Tourism Village Destination, Web-based GIS*

## I. INTRODUCTION

The tourism sector in Indonesia is one of the priorities of the national development program to encourage the country's foreign exchange earnings. Before Covid 19, according to OECD (Organization for Economic Cooperation and Development) data quoted from the article by Purwowidhu, C, (2023) it was stated that the Indonesian tourism sector contributed 5.0% of GDP (Gross Domestic Income). The tourism sector performance target in 2024 has decreased to 4.5% and this is because it is still affected by the pandemic (Maulana, Oktaviyanti, Wahyuni, Sasono, & Sakti, 2022), although it is hoped that it will open up more job opportunities. As an economic engine in Indonesia, tourism can help the government increase sectoral economic growth and contribute to achieving sustainable development goals (SDGs), from a social and environmental perspective. RPJMN 2020-2024, as a medium-term government program, also focuses on achieving sustainable development in all sectors, including tourism (BPK-RI, 2020). Regulations for developing sustainable tourism destinations are contained in the Minister of Tourism and Creative Economy Regulation No. 9 of 2021(BPK-RI, 2021).

West Java Province in Indonesia, as a leading contributor to the GDP of the national creative economy, needs information technology support in the industrial era 4.0 through the latest technological development innovations. Innovations from the development of the latest technology such as web-based information systems and the use of artificial intelligence (Artificial Intelligence) can be carried out in a business or business in certain sectors such as tourism which was added by Coccia, (2021), requires adjustments to various aspects, namely environmental, ethical, cultural, social, and political, which will be interrelated to impact the community's economy. As the second largest province in Indonesia, West Java has an area of approximately 37,144 square kilometers based on data from the Geospatial Information Agency (BIG) in 2023, consists of 27 cities and districts, and has abundant tourism potential, spread across all cities and districts(Nurhidayah & Pratama, 2023).

The promotion of tourism potential is seen as having an important role in supporting the sectoral economy in Indonesia. Tourism is also a multidimensional activity, namely as part of a series of development processes related to social, cultural, economic, and political aspects (Hadi, 2023). The diversity of Indonesia's tourism potential includes rural landscape-based tourism. Tourism villages are usually developed in rural areas and have unique characteristics (Itah Masitah, 2019). Seven tourist villages in West Java received the 2023 Indonesian Tourism Village Award (ADWI) from the Ministry of Tourism and Creative Economy of the Republic of Indonesia (Hiidayat, 2023), namely: (1) Taraju Tourism Village in Tasikmalaya Regency, West Java, (2) Bantaragung Tourism Village in Majalengka Regency, West Java, (3) Selamatik Tourism Village in Ciamis Regency, West Java, (4) Baros Tourism Village in Bandung Regency, West Java, (5) Cibeusi Tourism Village in Subang Regency, West Java, (6) Purwabakti Tourism Village in Bogor Regency, West Java, and (7) Astana Religious Tourism Village in Cirebon Regency, West Java. These seven tourist villages are the considerations for the development of a geographic information system and the use of artificial intelligence that will be carried out in this study. The various urgencies offered by the potential of tourist villages that have been mentioned emphasize the importance of developing tourist village destinations that are planned, synergistic, and sustainable. This is very crucial because the progress of a village area is related to the role of the tourism village sector and of course, will have an impact on improving the economic sectors of rural communities around the tourist village destination.

Applied technological innovation for developing a sustainable tourism model for tourist villages in this study also has the target of increasing tourist visits to tourist villages in West Java through the development of a web-based Geographic Information System (Ristianti, Bashit, Ulfiana, & Martono, 2022). The utilization of Artificial Intelligence as an applied technological innovation can also optimize the promotion and marketing of tourist villages through market analysis, forecasting needs, and developing more effective marketing strategies. (Mumtaz & Karmilah, 2022). In this study, through the Natural Language Processing application (Álvarez-Carmona et al., 2022), Tourist Service Chatbot (Ramadhan, 2020), and Virtual Assistants and Personalized Assistants (Ferreira, Loureiro, Ashfaq, & Pereira, 2023).

Several previous studies related to tourist village destinations, web-based geographic information systems, and the use of AI for tourism have been carried out by several researchers. Study from Bulchand-Gidumal, (2022), discusses the impact of AI on the Tourism, Travel, and Hospitality industry. This research reveals that artificial intelligence (AI) can now be present in the tourism sector with various applications of AI. A study on Chatbot Development for Interactive Tourism Information in South Tangerang was carried out by Ferdinan dan Anwar (2023), The results of this study reveal that chatbots can provide tourists with reliable, interactive, and convenient access to information about attractive tourism offers in South Tangerang, thereby improving the overall tourist experience and promoting the city's tourism sector. Regional Case Study by Ristianti et al. (2022), The research project intends to create a tourism promotion model in tourist communities using web GIS. However, the output of this research is Web GIS and there has been no use of AI applications related to the promotion of the tourist villages studied. Study from Herman, Rizkiyah, Widjaja, & Junaidi (2023), aims to examine the determinants of tourism village management using a tourist destination attribute approach. The results of their research confirm that a village can become a tourist destination by attracting visiting tourists.

This empirical study aims to empirically analyze the influence of applied technological innovation (web-based GIS) and the use of AI) on the development and promotion of potential tourist village destinations in the case of seven tourist villages in West Java, Indonesia.

The objectives of this research are to experimentally examine to empirically test whether the development of web-based GIS and the use of AI have a positive and significant effect on the promotion of tourism village potential in the province of West Java, Indonesia.

The findings of this empirical study on the development of promotion of potential village tourism destinations using applied technological innovation provide a significant contribution to strengthening rural economic growth in the village tourism destination sector in West Java Province, Indonesia, and are new in this research.

**II. LITERATURE REVIEW**

**2.1 Promotion of Tourist Village Destination**

A tourist village is one of the developments in rural-based tourist destinations that offer visits to tourists to see, feel, and interact directly with the villagers they visit and get a unique and different experience from other tourist destinations(Windayani & Marhaeni, 2019). A tourist village destination is a geographical area within a rural area that can be visited because it has tourism potential and attractions(Herman et al., 2023) Promotion of tourist village destinations is an effort to improve the economy of village residents so that the economic exchange that occurs can provide benefits for the development of the community and the village area itself. Identifying tourist village potential(Soeswoyo et al., 2021), and a series of competitive rural tourism strategies are the main concerns in promoting the destinations of seven tourist villages in West Java in this research. The seven tourist villages that were the object of the survey in West Java are the tourist villages that received awards as mentioned(Hiidayat, 2023), namely: (1) Taraju Tourism Village, (Tasikmalaya District, West Java), (2) Bantar Agung Tourism Village (Majalengka District, West Java), (3) Selamatik Tourism Village (Ciamis District, West Java), (4) Baros Tourism Village (Bandung Regency, West Java), (5) Cibeusi Tourism Village (Subang Regency, West Java), (6) Purwabakti Tourism Village (Bogor Regency, West Java), and (7) Astana Religious Tourism Village (Cirebon District, West Java). The identification of tourist villages that will be developed through Web\_GIS and the use of AI are obtained, and the results are tabulated in Table 1.

**Table 1 Promotion of Tourism Village in West Java Indonesia**

No	Name of Tourist Village	Tourist Village Location	Tourism Village Potential
1	TARAJU Tourist Village	<ul style="list-style-type: none"> <li>▪ Tasikmalaya District, West Java</li> <li>▪ 121 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Tea Picking and Processing Tour</li> <li>• Coffee Picking and Processing Tour</li> <li>• River Tubing and Camping</li> <li>• Creation from Waste Arts and Cultural Tourism</li> </ul>
2	BANTAR AGUNG Tourist Village	<ul style="list-style-type: none"> <li>▪ Majalengka District, West Java</li> <li>▪ 138 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Ciboer Pass Rice Terrace</li> <li>• Binuang Sky and Cipeteuy Waterfall</li> <li>• Cicerem Blue Lake</li> </ul>
3	SELAMATIK Tourist Village	<ul style="list-style-type: none"> <li>▪ Ciamis District, West Java</li> <li>▪ 122 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural Potential,</li> <li>• Potential for Natural Beauty</li> <li>• Food security</li> </ul>
4	BAROS Tourist Village	<ul style="list-style-type: none"> <li>▪ Bandung Regency, West Java</li> <li>▪ 21.2 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Stilt House with Wooden Roof Walls,</li> <li>• Activities on the Farm,</li> <li>• Traditional food and game</li> </ul>
5	CIBEUSI Tourist Village	<ul style="list-style-type: none"> <li>▪ Subang Regency, West Java</li> <li>▪ 37.8 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Natural Potential</li> <li>• Cultural Diversity</li> <li>• Creative Economy Products</li> </ul>
6	PURWABAKTI Tourist Village	<ul style="list-style-type: none"> <li>▪ Bogor Regency, West Java</li> <li>▪ 160 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural Diversity</li> <li>• Biodiversity</li> <li>• Natural Diversity</li> </ul>
7	ASTANA RELIGIOUS Tourist Village	<ul style="list-style-type: none"> <li>▪ Cirebon District, West Java</li> <li>▪ 37.8 km from Bandung</li> </ul>	<ul style="list-style-type: none"> <li>• Various Tourist Attractions</li> <li>• Comfortable homestay</li> <li>• Traditional Tour Packages, Typical Souvenirs and Culinary</li> </ul>

Source: Own Research (2024)

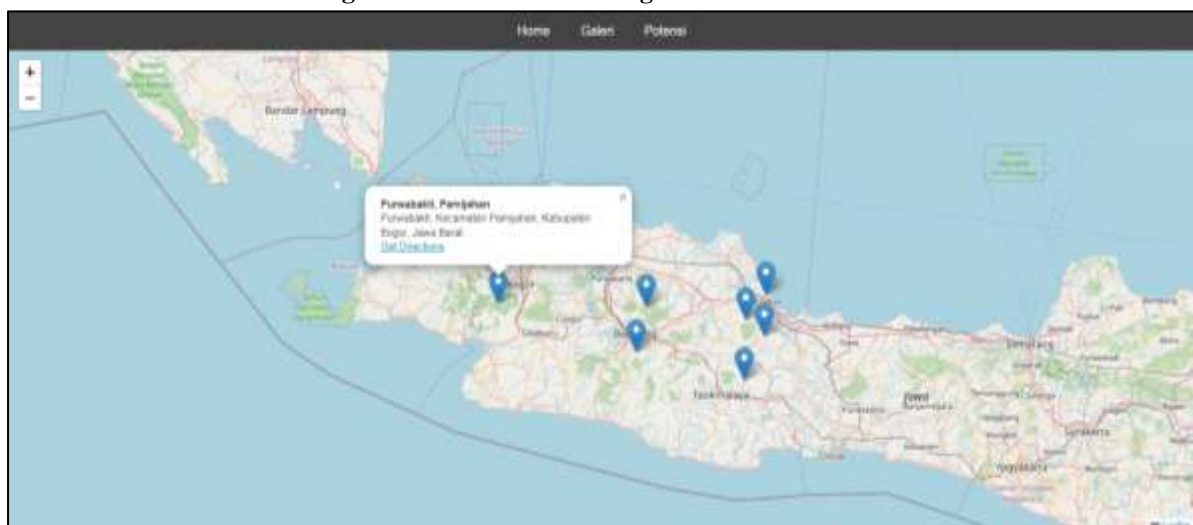
## 2.2 Technology Applied Innovation

The role of applied technological innovation in this research will be tested to solve the problem of increasing the promotion of tourist villages. Applied technological innovation is currently in the tourism sector, especially in marketing, so digitalization strategies must be directed at developing applied technological innovation. This was also said by (Putri & Arif, 2023), digital marketing or tourism promotion is all efforts made in terms of marketing using internet-connected devices with various strategies and digital media to communicate with potential consumers using online communication channels. In this study, the applied technological innovation used to improve the promotion of tourist villages is the web-based Geographic Information System and the use of Artificial Intelligence.

### 2.2.1 Web Based Geographical Information System

Geographic Information Systems (GIS) is a framework for storing, manipulating, analyzing, organizing, and displaying geographic data (Kuria, Kimani, & Mindila, 2019). GIS technology has been applied in various fields, one of which is tourism (Noviansyah, Fauzi, Bakhrun, & Lestary, 2023). The Geographic Information System was also developed to calculate the closest distance to tourist destinations, and also Geographic Information System design supports the selection of tourist destination locations and travel routes for visitors to make it easier to obtain tourist location information. According to the study by Arrumdany et al. (2019), GIS can be presented in mobile applications and web-based systems (called Web-Based GIS). Furthermore, Web-based Geographic Information Systems provide innovative solutions in the tourism sector, specifically in giving visual, detailed, and interactive information about a tourist attraction/tourist attraction and making it easier for tourists to find the location of tourist attractions in a destination (Ristianti et al., 2022). In Indonesia, not all tourist villages have a web-based information system, especially in the form of a web-based Geographic Information System.

**Figure 1 User Interface Design for Web Based GIS**



**Source: Own Research (2024)**

In this study, GIS development is indicated by the graphic visualization of the tourist village, the distance of tourist village locations, and spatial data management. Spatial data management is the process of collecting, storing, manipulating, analyzing, and displaying data that has geographic references or coordinates on the Earth's surface. Spatial data includes information about the location, shape, and relationship between objects in geographic space (Strand, 2016).

### 2.2.2 Utilization of Artificial Intelligence

Artificial intelligence (AI) is now becoming a phenomenon in all fields, including travel and tourism, appearing in various applications such as personalization and recommendation systems, robots, conversational systems, smart travel agents, and prediction and forecasting systems (Bulchand-Gidumal, 2022). The utilization

of AI today can quickly change business services in various sectors, including tourism. The use of AI technology will be able to provide innovative solutions to provide personalized and accurate recommendations to tourists, increase operational efficiency, and optimize tourist destination management(García-Madurga & Grilló-Méndez, 2023). The things that are taken into consideration in this study are determining the appropriate AI application to support the promotion of tourist village destinations.

**Figure 2 Web-based AI to GIS Integration Feature Display**



**Source: Own Research (2024)**

Artificial intelligence is a digital technology that helps businesses improve and grow in the digital era, affecting how firms innovate and respond to changing consumer demands. (Mustak, Salminen, Wirtz, & Plé, 2021). Artificial intelligence has numerous uses in the tourism business and is transforming it, though it has yet to achieve its full potential(Tussyadiah, 2020).

- **Natural Language Processing**  
Artificial intelligence, especially Natural Language Processing (NLP) would be able to considerably assist in acquiring information about mass content made by online users or tourists to get to know tourism services and products(Álvarez-Carmona et al., 2022).
- **Tourist Service Chatbot**  
Chatbot for e-tourism that allows people to communicate textually to book a visit, plan travel, and ask about interesting tourist attractions that are worth visiting(Muley & Technology, 2023).Chatbot is an AI application in the form of a chat system that can answer questions according to the capabilities embedded in it (Ramadhan, 2020). The use of chatbots by individuals in the tourism industry is still not widespread and requires a lot of research and study (Gatzioufa & Saprikis, 2023). With chatbots, it is hoped that tourists can easily and quickly obtain the information they need(Ferdian & Anwar, 2023),
- **Virtual & Personalized Assistant**  
Intelligent Virtual Assistants (IVA) are the technological development of personal assistants. They are AI-enabled devices that work via voice instructions. Tourists can have real-conversations with IVAs, ask questions, seek news, order items or services, search for nearby eateries, and access contacts and emails in seconds(Ferreira et al., 2023)

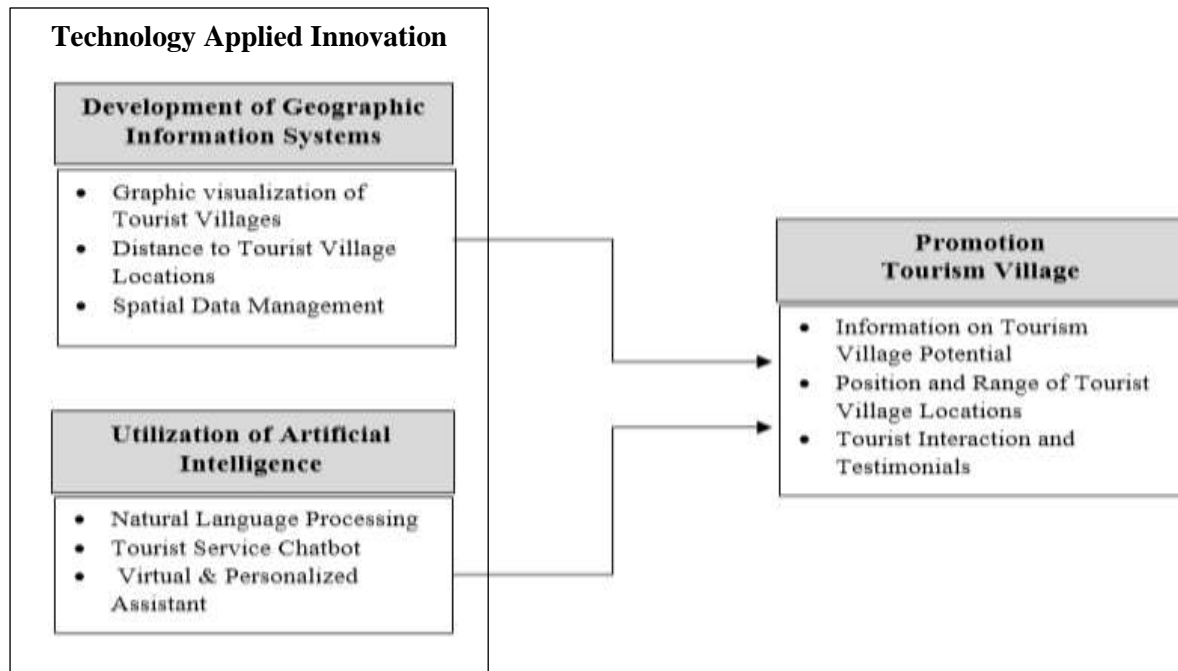
**2.3 State of The Art**

In this empirical study, State of the art is a step to present the novelty of the results of the study conducted. Being the first to come up with ideas, models and problem solving is the basis of research. Figure 1 states that the influence of applied technological innovation (web-based GIS) and the use of AI) on the development and promotion of potential tourist village destinations in the case of seven tourist villages in West Java, Indonesia. This overview of the State of the Arts can be called a novelty in this study.

Based on Figure 1, it is explained as follows:

- 1) Development of GIS to support the promotion of tourist villages(Ristianti et al., 2022). This tourism promotion is supported by a graphic visualization of the tourist village and shows the distance from the tourist village(Siswanto, 2013), and is used for spatial data management(Strand, 2016).
- 2) The utilization of AI can support tourism promotion. Some AI applications that can be utilized are Natural Language Processing(Álvarez-Carmona et al., 2022), Tourist Service Chatbot(Muley & Technology, 2023), and Virtual & Personalized Assistant(Ferreira et al., 2023).
- 3) Promotion of tourist village destinations can be supported by GIS development (Ristianti et al., 2022) and the use of AI, where the main thing that becomes promotional material is the potential of the tourist village(Soeswoyo et al., 2021).

**Figure 3 State of the Art of Research Model**



Source: Own Research (2024)

### III. RESEARCH METHODOLOGY

The empirical study methodology uses a descriptive method with a quantitative approach.

#### 3.1 Research Data Collection and Samples

This study uses quantitative methods, where data had obtained using online survey techniques through purposive random sampling. Finally, 100 samples had chosen as valid data among 150 employee responses from various Indonesian banks.

#### 3.2 Research Data Analysis

The Likert's scale to measure the variables of this study is a quantitative way (scale of 5). SmartPLS 3.2.7 is a data processing software application. The model test and hypothesis test are the two most used empirical tests. For the proposed research model, inner and outer model tests were conducted. For this study, Cronbach's Alpha and Composite Reliability values > 0.7, were used to determine the reliability and validity of the variables and indicators. According to Hussain et al.(2018), Goodness of Fit (GoF) and R-square values had used as evaluations in the Inner Model (R<sup>2</sup>). The hypothesis had tested with a P-Value of less than 0.05 and a T-Statistic value of more than 1.960.

Hypotheses development analysis based on this research model, as seen in Figure 4.

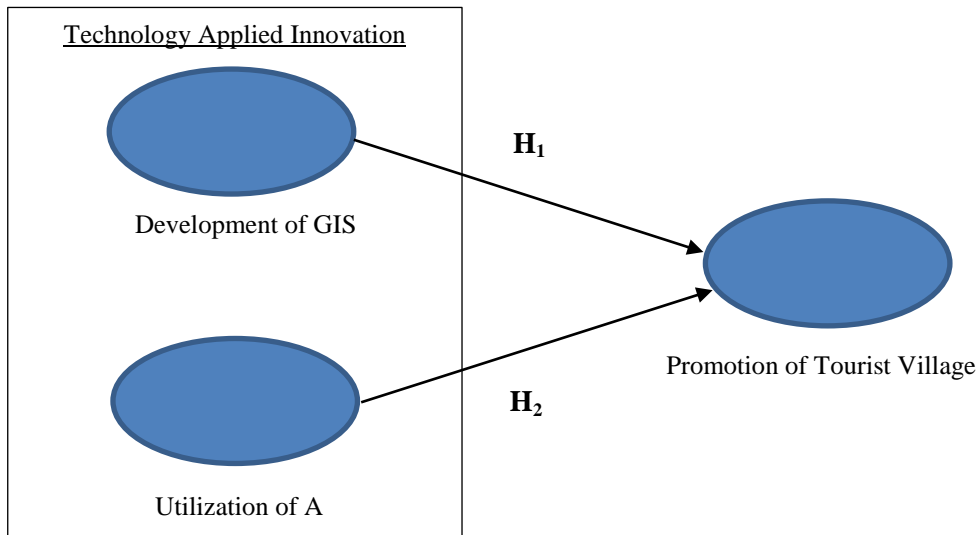
Promotion of tourist village destinations can be supported by GIS development (Ristianti et al., 2022). This tourism promotion is supported by a graphic visualization of the tourist village and shows the distance from the tourist village(Siswanto, 2013). Then the hypothesis:

**H<sub>1</sub>:** Development of GIS affects the Promotion of tourist village

The utilization of AI can support tourism promotion. Some AI applications that can be utilized are Natural Language Processing(Álvarez-Carmona et al., 2022), Tourist Service Chatbot(Muley & Technology, 2023), and Virtual & Personalized Assistant(Ferreira et al., 2023). Then the hypothesis:

**H<sub>2</sub>:** Utilization of AI impact on the Promotion of tourist village

**Figure 4 Research Model and Hypotheses Development**



Source: Own Research (2024)

**IV. RESULTS AND DISCUSSIONS**

**4.1 Results of this Study**

The findings of the model test and the hypothesis test are examples of empirical test results in the quantitative method. In this empirical test, 100 people who fill out questionnaires will be analysed. The output of outer loading measurement results from data processed using smart PLS are shown in Table 1. By looking at the outer loading value, the greatest influence on the Development of the GIS variable is the Distance from The Tourist Village Locations indicator, amounting to 0.921. In the Utilization of AI variable, the largest indicator is Tourist Service Chatbot, namely 0.932, The Promotion of Tourist Village variable is an indicator that has a large value, namely Position and Range Tourist Village Location with a value of 0.924 with an outer loading..

**Table 1 Output Values from Outer Loadings Indicators of Research Variables**

Variables / Indicators	Development of GIS	Utilization of AI	Promotion of Tourist Village
X11= Graphic Visualization of The Tourist Village	0.919		
X12= Distance From The Tourist Village Locations	0.921		
X13= Spatial Data Management	0.910		
X21= Natural Language Processing		0.774	
X22= Tourist Service Chatbot		0.932	
X23= Virtual & Personalized Assistant		0.928	
Y1 = Information on Tourist Village Potential			0.834
Y2 = Position and Range Tourist Village Location			0.924
Y3 = Tourist Interaction and Testimonial			0.922

Source: Own Research (2024)

Stages of analysis of the outer model test results. Analysis of the results of measuring the validity and reliability of research variables is seen by the magnitude of Cronbach's Alpha value and the Composite

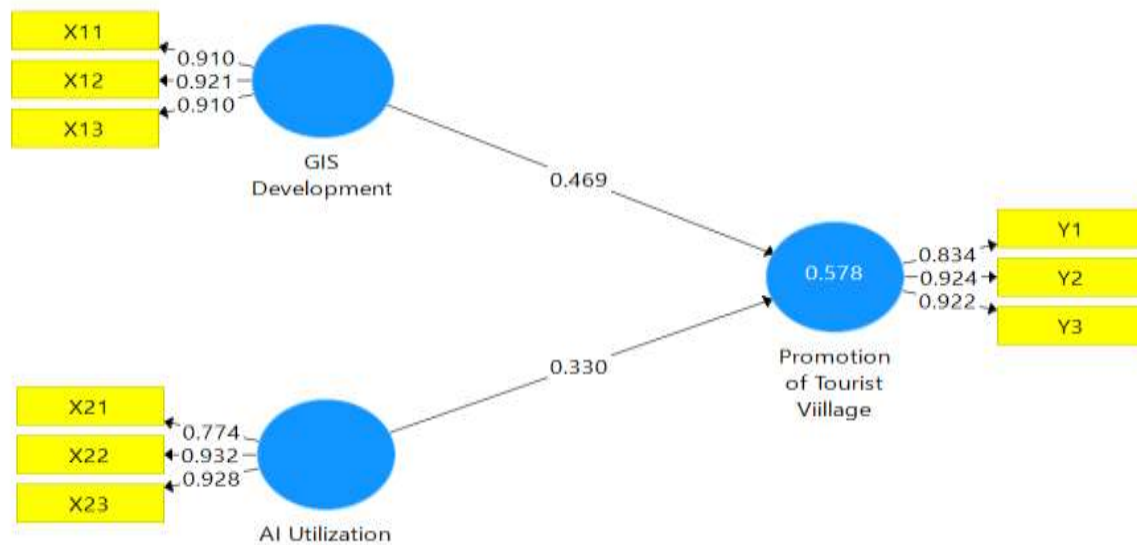
Reliability Value. Results of data processing and execution with Smart-PLS version 3.2.7, which was also used in the study conducted by Hussain et al.(2018). Table 2 shows the value of Cronbach's Alpha > 0.7 and Composite Reliability > 0.7, this shows that all the variables used in the research are valid and reliable.

**Table 2. Result of Validity and Reliability Testing**

Variables	Cronbach's Alpha	RhoA	Composite Reliability	Average Variance Extract
Development of GIS	0.902	0.915	0.958	0.835
Utilization of AI	0.857	0.916	0.912	0.776
Promotion of Tourist Village	0.873	0.876	0.923	0.800

Source: Own Research (2024)

An overview of the Output of Outer Loading in Path Analysis in the measurement model is shown in Figure 5.



**Fig. 5. The Output Of Outer Loading In Path Analysis**

Structural Equation Modelling (SEM) analysis was used in this study, and the equations are as follows:

$$Y = \beta_{11} X1 + \xi_1 \tag{1}$$

$$\text{Promotion\_of\_Tourist\_Village} = 0.469 * \text{GIS\_Development} + \xi_1$$

$$Y = \beta_{11} X2 + \xi_2 \tag{2}$$

$$\text{Promotion\_of\_Tourist\_Village} = 0.330 * \text{AI\_Utilization} + \xi_1$$

$$Y = \beta_{12} X1 + \beta_{21} X2 + \xi_3 \tag{3}$$

$$\text{Promotion\_of\_Tourist\_Village} = 0.469 * \text{GIS\_Development} + 0.330 * \text{AI\_Utilization} + \xi_3$$

where:  $\beta$  = beta coefficient value , and  $\xi$  = measurement error.

Measurement of the structural model or Inner Model can be shown in Table 3.

**Table 3. Results of the Inner Model Testing**

Variable	R-Square	Communality	GoF	Q-Square
Development of GIS		<b>0.469</b>		
Utilization of AI		<b>0.418</b>		
Promotion of Tourist Village	<b>0.578</b>		<b>0.506</b>	<b>0.334</b>

Source: Own Research (2024)

**Goodness of Fit (GoF)**



The total appropriateness index had calculated using Goodness of Fit (GoF) criteria, Q-square values, and R-square values while assessing the Inner Model(Hussain et al., 2018). The following formula is used to determine the Goodness of Fit (GoF) values:

$$\begin{aligned}
 GoF &= \sqrt{\text{Average Communalilty} \times \text{average } R^2} & (3) \\
 &= \sqrt{0.4435 \times 0.578} \\
 &= \sqrt{0.256343} \\
 &= \mathbf{0.506}
 \end{aligned}$$

The GoF value of 0.506 (> 0.36) received a high evaluation of the model measurement(Akter et al.,2011).

**Q - Square value**

The Q-square value was used to demonstrate that the research model is predictive. The formula for calculating the Q-square value is as follows:

$$\begin{aligned}
 Q^2 &= 1 - [ (1 - R1^2) ] & (4) \\
 &= 1 - [ (1-0.334) ] \\
 &= 1 - 0.666 \\
 &= \mathbf{0.334}
 \end{aligned}$$

The value obtained from the Q-square 0.334 (> 0.15) indicates that the intermediate prediction level(Akter et al., 2011).

**R - Square value**

The R-Square value is used to assess the structural model's predictive power. It's an indication of many construct variables the research model can explain. The R-Square value is determined from the results of data processing with smartPLS software and not from the calculation of a formulation. This R-Square value results are shown in Table 4. The R-square value is calculated using the measurement findings of the endogenous R-square value. If the value of R-square = 0.02 has a low effect., or with size effect, 0.13 has a medium effect size and > 0.36 a high effect size, according to Cohen's (1998) study (Akter et al., 2011).

Table 4. Results of R-Square Testing

	<i>R-Square</i>	<i>R-Square Adjusted</i>
Promotion od Tourist Village	<b>0.578</b>	<b>0.512</b>

The R-square value for Promotion od Tourist Village variable is 0.578. Because the R-square value is greater than 0.30, it indicates that both of them have a very high effect category. Based on the R-square value, it can also be stated that 57.8 percent of Promotion and Tourist Village is influenced by Development of GIS and Utilization of AI, both of which are applied technological innovations. Furthermore, the promotion of 42.2 percent tourist villages is influenced by other factors not discussed in this study.

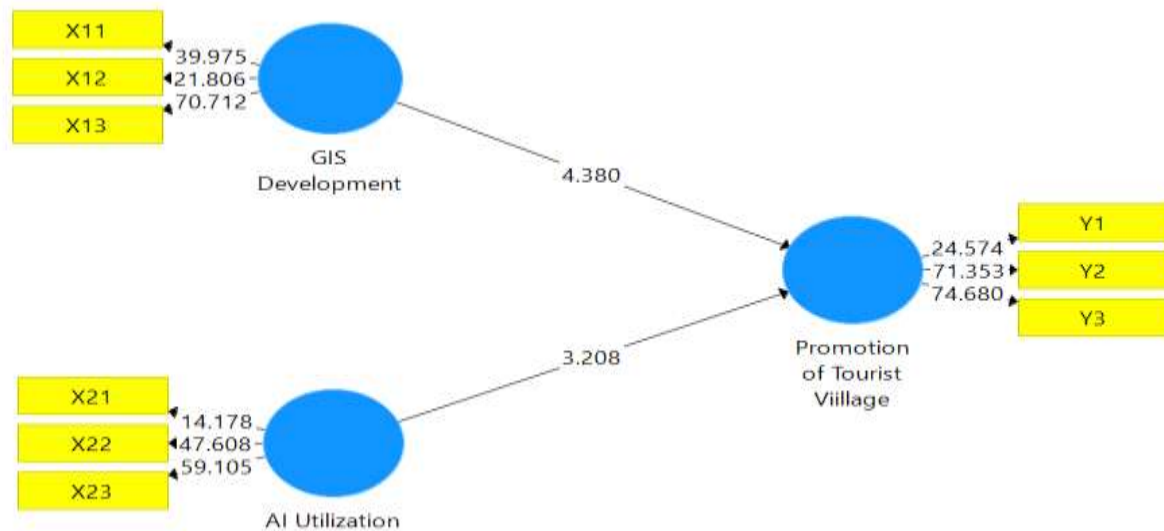
**Results of Hypothesis Testing.**

All results of hypothesis testing (Direct Effect) are presented in Table 5.

**Table 5. Results of Hypothesis Testing**

	<i>Original...</i>	<i>Sample Mean</i>	<i>Standard Dev...</i>	<i>T Statistic</i>	<i>P Values</i>
Development of GIS → Promotion od Tourist Village	<b>0.469</b>	<b>0.519</b>	<b>0.023</b>	<b>4.380</b>	<b>0.000</b>
Utilization of AI → Promotion od Tourist Village	<b>0.418</b>	<b>0.801</b>	<b>0.474</b>	<b>3.208</b>	<b>0.000</b>

Fig. 6 shows the Path Analysis Outer Loading Output with Bootstrapping Algorithm. This is the outcome of data processing with SmartPLS 3.2.7 and the Bootstrapping Algorithm. Bootstrapping is a resampling technique used in statistics to improve the robustness and accuracy of probability sampling algorithms.



**Figure 6. The Path Analysis Outer Loading Output with Bootstrapping Algorithm.**

Analysis of the results of hypothesis testing is then explained as follows:

**H1**, identify the influence of GIS Development on the Promotion of Tourist Villages. As shown in Table 5, the Beta coefficient value measurement is 0.469 the T-statistic value = 4.380 (>1.96), and the P-Value is 0.000 (<0.05). So this result means that GIS Development has a positive and significant influence on the Promotion of Tourist Village.

**H2**, identify the influence of AI Utilization on Promotion of Tourist Village As shown in Table 5, the Beta coefficient value measurement is 0.418, the T-statistic value = 3.208 (>1.96), and the P-value is 0.000 (<0.05). So this result means that AI Utilization has a positive and significant influence on the Promotion of Tourist Village.

#### 4.2. Discussion of The Results of Study

This study provides empirical study evidence of GIS Development and AI Utilization (both as applied technological innovation) to support the promotion of tourist villages in the case of seven tourist villages in West Java, Indonesia. Studi empiris ini belum pernah dilakukan pada penelitian-penelitian sebelumnya. Studi dari Restianti terkait GIS development (Restianti et al., 2022). Selain itu studi tentang tourism promotion is supported by a graphic visualization of the tourist village and shows the distance from the tourist village (Siswanto, 2013). These two studies are not empirical studies. The study of Chatbot Development as an AI for Interactive Tourism Information in South Tangerang was also carried out by Ferdian, A. D., & Anwar, S. N. (2023), also not an empirical study.

The empirical model developed has valid and reliable variable values (Cronbach Alpha (CA) and Composite Reliability (CR) values >0.7). Furthermore, all variable indicators are valid and reliable (outer loading value > 0.5). The Promotion of Tourist Village variable has a coefficient of determination ( $R^2$ ) of 0.578, so it can be stated that 57.8 percent of the Promotion of Tourist Village is influenced by the Development of GIS and Utilization of AI, both of which are applied technological innovations. Furthermore, the promotion of 42.2 percent of tourist villages is influenced by other factors not discussed in this study.

The results of the hypothesis test confirm that GIS Development has a positive and significant influence on the Promotion of Tourist Village. These results are in line with and supported by previous studies that Web-based GIS is very supportive of tourism promotion (Restianti, 2020; Siswanto, 2013). Other results reveal that AI Utilization has a positive and significant influence on the Promotion of Tourist Village. This finding is in line with Ferdinand and Anwar's study, which states that Chatbot is one of the AI applications that is very supportive in the tourism business.

The results of this study state that the development of GIS and Utilization of AI will impact significantly in promotion of tourist village destinations in the case of the seventh tourist village in West Java, Indonesia, It

should be noted that the seven tourist village destinations have received awards from the Indonesian government.

This research has theoretical and managerial implications for the tourism industry, especially for the tourist village destination business sector regarding how to promote tourist village destinations through applied technological innovation.

These findings have significant implications for the West Java Provincial Government, in the managerial aspect, especially for those promoting the tourism industry in general in the Indonesian tourism sector. Apart from that, it also has implications for tourism industry players to emphasize that technologically applied innovation to promote tourist destinations is a must. This paper has certain limitations: First, the findings limit the study of the tourist village destination selected in West Java Indonesia context. Second, due to the small sample size, the empirical findings may be limited by the approach. Finally, the questionnaire approach is not completely free of the respondent's subjectivity.

## V. CONCLUSION

This empirical study seeks to uncover the development of promotional potential for village tourism destinations using applied technological innovation through web-based GIS and AI utilization.

The development of web-based GIS as applied technological innovation has a significant effect on the development of promotional potential for village tourism destinations in the current of digital era. This is proof that not many people still understand the benefits and convenience of web-based GIS for promoting potential tourist destinations in the tourism industry in digital form in Indonesia.

The AI utilization also as applied technological innovation has a effect on the development of promotional potential for village tourism destinations in the current of digital era. On the other hand, the latest technology such as AI should be utilized to support the digital tourism industry, which is currently being developed in Indonesia. Finally, the main result of this research is that the development of promotional potential for village tourism destinations using applied technological innovation through web-based GIS and AI utilization.

For further research, the empirical research will be used as a reference for conducting future applied research regarding Web-based GIS and AI utilization for the potential promotion of the seven tourist villages in West Java, Indonesia.

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