

# OPTIMIZATION MODEL ANALYSIS TO DEVELOP DESTINATION TRAVEL

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## ABSTRACT

**T**ourism sector in Indonesia is dramatically increased. Risk in tourism industry is high, particularly in destination. Risks in the tourism appears as a result human interaction and nature. Risks that often happen in the tourism is operational risk. Therefore, optimization and risk management is needed to keep quality and make development strategy for tourism. One of tourism object in Bogor is Agung Jagatkartta Parhyangan Temple at Mount Salak in Ciapus, Bogor. This temple is included the spiritual tourism that can be used to reduce the risk in the tourism.

The objective of this research is to create optimization model analysis to develop destination travel using PHA (Process Hierarchy Analysis) by combining the priorities variable at each hierarchy and analyze how direction of tourism development by SWOT analysis. This research can help Jagatkartta Temple to transform to be destination travel which has value added, comparative advantage and local society prosperity.

**Keywords:** Tourism Risk, Optimization, Tourism Development, PHA, SWOT

## INTRODUCTION

Indonesia has an attractive place for tourism as the beautiful inland areas, cultural heritage and history, beaches, and many more. Indonesia's tourism industry has a role to increase its contribution to the Gross Domestic Product (GDP) because this is will be trigger more foreign exchange income. Currently, Indonesia's tourism sector contributed approximately 4% of the total economy. Here is the number of foreign tourist arrivals in Indonesia from 2007 to 2015 by [2].

Table 1. The growth rate of foreign tourist arrivals to Indonesia 2007-2015

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Foreign Tourist	5.51	6.23	6.32	7.00	7.65	8.04	8.80	9.44	9.73

Source: Badan Pusat Statistik

Indonesia has the extraordinary progress in the growth of tourism. It can be seen from the number of foreign tourist arrivals are increasing rapidly and the national priorities for the tourism industry and infrastructure investments. Indonesia has the advantage in terms of competitiveness, namely a competitive price, a wealth of natural resources (biodiversity), and any number of cultural heritage sites. However, the tourism infrastructure in Indonesia is still considered less worthy and to be an ongoing problem. This causes rising costs, logistics thus making the investment climate less attractive but also reduces travel smoothly for tourism.

Tourism destinations is an entity in a particular geographical area in which there are components of tourism products and services, also other supporting elements such as the tourism industry, community and developers institution which form a system that synergistically in creating motivation to visit and the totality of the tourist visit experience [7]. Tourism destination involves various sector areas, such as the visitor in this case is foreign or local travelers and for the local community became providers tourism product and also as the host. Development of a tourist destination not only in the interests of tourists but also have to look at the interest of public or involves public both local, regional and national levels.

Tourism destinations development are related to each other in people's lives because it can improve economic communities life through the income of a particular area. According to [11] the purpose of tourism development is to encourage the development of some sectors, such as changing or creating new ventures related to services, travel, expanding local goods market, have a positive effect on employment and accelerate economy circulation in an travel business destination area will increase the multiplier effect.

Tourism has diverse potential such as the natural beauty, traditions or culture and hospitality. Tourism should have the readiness of facilities and infrastructure. The natural beauty that naturally is very helpful in the tourism development. Then, its supported by local communities hospitality. It becomes an attraction to tourists know more about community life or tradition.

Spiritual tourism became a new trend in the tourism industry. Spiritual tourism really appreciate the local culture, love nature and the environment, also the tourists who come are educated tourists. Spiritual tourism potential to be developed in Indonesia because Indonesia has a number of destinations that are suitable for it. Destination with spiritual tourism will be interesting for tourists. It would be nice areas if the destination has various kinds of facilities support. The facilities are hotels, villas, cottage, homestay, restaurants, traditional and modern shopping center. It will be a positive impact for both tourist and local people. This will be very helpful in developing tourist destinations with spiritual tourism.

Parahyangan Agung Jagatkarta temple located at Mount Salak, in Ciapus, Bogor. Parahyangan Agung Jagatkarta temple built in a unique location on Mount Salak because Pakuan Pajajaran Sunda Kingdom once stood at the site. Pakuan Pajajaran Kingdom is the capital of the Sunda Galuh Kingdom region, the last Hindu kingdom in the archipelago (Majapahit) which experienced its golden age under of King Siliwangi, before it was conquered by Muslim Java in the 16th century.

There are so many risk in the tourism industry. Risks that often occurs in tourism is operational risk. Facilities and infrastructure in Jagatkarta Temple are not good maintenance. It is unfortunate that Parahyangan Agung Jagatkarta Temple can be potential tourism destination with spiritual tourism. Tourism development will help Parahyangan Agung Jagatkarta to has a value added, efficiency, minimize risk, and comparative advantages. Development need a strategy to show how spiritual tourism be an empowered. In developing spiritual tourism in Parahyangan Agung Jagatkarta Temple, there are some constraints which need the solution. Based on the description above, the problem in this study can be formulated as below:

1. How to create optimization model to develop destination travel?

## 2. How strategy to develop destination travel?

According to the issues, the purpose of this study is to design optimization model and create strategy to develop destination travel in Parahyangan Agung Jagatkartta Temple in Ciapus, Bogor City.

### **Literature Review**

#### **Risk**

Risks is all matters which may result in losses for the company [9]. According to [4] a risk is defined as the level of uncertainty that has been known probability of occurrence or the uncertainty that can be calculated and it can cause harm or loss. Risk can also be interpreted by deviation from targets, goals, or expectations. According to [6] basically there are five flows that can be analyzed in risk management, they are operational risk, financial risk, risk information risk, relational risks, and inovasional risk. Tourism risk management generally focus on operational risk.

[4] Operational risk is potential deviation from expected results due to a malfunction system, human resources, technology, or other factors. Operational risk can occur at two levels, they are technical and organization. On the technical level, operational risks can occur if the information system, error in recording, information inadequate, and measure the risk which inaccurate and inadequate. At the organizational level, operational risks may arise due to monitoring system and reporting, systems and procedures, and policies do not run as operational should be. Risk can be caused by several factors, they are human resources, technology, systems and procedures, policies, and organization structure. Operational risk is one of the risks in the tourism sector.

#### **Develop Destination Travel**

[12] Tourism has an uniqueness, beauty and value which forming natural diversity and cultural. [15] Tourist destination concept is related on the tourists consumption, so the attractions and special events as a physical element that makes an attraction for tourists.

Natural tourism development is part of the service utilization from natural resource development and national development. Therefore, its implementation should be able to contribute on the economy and stimulate other sectors development [14]. Besides, eco-tourism development should be able to create a solid working basis, the right direction toward the target and develop equitably opportunities for the society benefit to meet the needs, get job opportunities, increase revenue and to support an increase in foreign exchange earnings.

Tourism development as an industry has been formulated and managed to achieve the desired objectives both in economic, social, cultural and environmental. Well planning is an important aspect in the tourism development. Planning is needed because it has a role. Maximize the benefits and minimize the negative effects produced by tourism development. Without any planning which can lead to undesirable developments such as the use of appropriate spatial, environmental damage, activity sectors development that is not balanced, the emergence social problems, and others [17].

In order to survive in the tourism held steady and sustainable, should be preserved and maintained as a historical relic, temple sanctity, customs that had

taken root in village life. Planning for the region and tourism development is well plan if give attention to the environment and cultural heritage [16].

### Spiritual Tourism

Spiritual tourism is part of alternative tourism, as a process of developing activities tourism between different communities. According to [1] Alternative tourism is a movement to "treat pain" caused by mass tourism. Based on [5] mentions the alternative tourism comes from two views of contemporary ideology, namely the alternative tourism. It is a reaction to the modern consumerism, and in this reaction to the developing countries exploitation.

### Method And Materials

Processing and analysis data using qualitative and quantitative analysis. Process Hierarchy Analytic (PHA) based on [13] is used to create a model for optimization to develop destination travel. SWOT analysis used to formulate strategy in developing destination travel in Parahyangan Agung Jagatkartta in Ciapus.

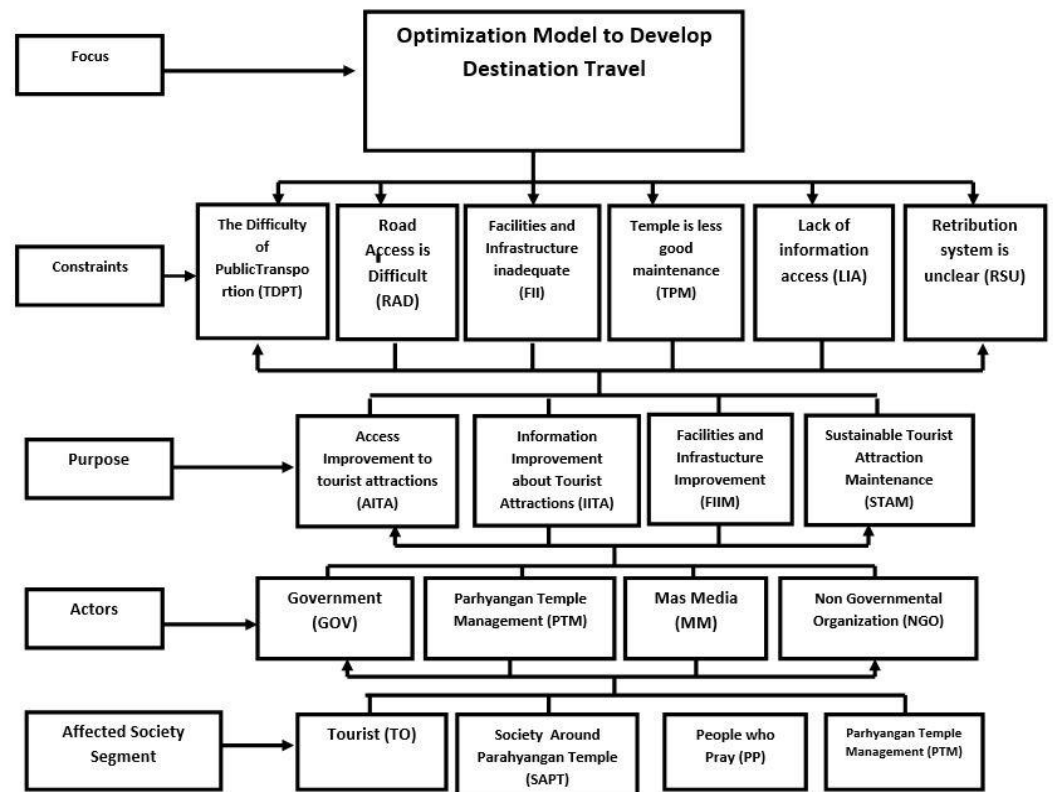
### RESULT AND DISCUSSION

Parahyangan Agung Jagatkarta Temple ("The Perfect Holy Gods Nature") or often called simply Jagatkarta Hindu temple archipelago is located in Bogor, West Java, Indonesia. Jagatkarta Temple is the largest temple in West Java and the 2nd largest in Indonesia after Besakih in Bali, considered as a worship and funeral for Prabu Siliwangi and the hyang (ancestors) of Pakuan Pajajaran that stood in the region of Parahyangan. Entering the temple is no rules or procedure but for women who are menstruating are prohibited to entering the temple, because the temple is a sacred place. When the temple has traditional ceremony, visitors only allowed entrance to the front of the main temple. The main temple has spacious courtyard and in spacious yard there is Ganesha statue and rest hall. Although visitors just in the courtyard of the temple, they can feel a spiritual travel when Hindus praying. The atmosphere really like in Bali's temple, they use "udeng" (traditional cap) for men and kebaya for women [3].

### Optimization Model Analysis to Develop Destination Travel

Process Hierarchy Analytic (PHA) is a decision analysis technique using a paired comparison in a multilevel diagram which generally starts from the focus (target), then the first level criteria and sub-criteria and so on [9]. This decision analysis is the result of combined by three expert decision who are competent to know about the attraction of Jagatkartta Temple. Figure 1 shows the general PHA framework which consist of 4 (four) levels. The first level shows the focus or ultimate goal that is "Optimization Model Analysis to Develop Destination Travel". The second level in a hierarchy structure shows the constraints in the Parahyangan Agung Jagatkartta Temple, consist of the difficulty of public transportation, road access is difficult, facilities and infrastructure inadequate, the temple is poor maintenance, lack of information access, and retribution system is unclear. The third level in the hierarchy structure represent the purpose of the optimization model, they are access improvement to tourist attractions, improvement of information about tourist

attractions, facilities and infrastucture improvement, and sustainable tourist attraction maintenance. The fourth level in a hierarchy structure represent the actor in the Parhyangan Agung Jagatkartha Temple, the actor consist of Government, Parhyangan Temple Management, Mas Media, and Non Governmental Organization. The fifth level in a hierarchy structure shows the society affected segment in the Parhyangan Agung Jagatkartha Temple, they are Tourist, Society Around Parhyangan Temple, People who Pray, and Parhyangan Temple Management. The results of this analysis will be used as



the basis for determining “Optimization Model Analysis to Develop Destination Travel”.

Figure 1: Hierarchy Structure of Optimization Model Analysis to Develop Destination Travel

**PHA (Process Hierarchy Analysis) Result**

Based on the questionnaire experts results using the Process Hierarchy Analytic (PHA) that obtained pairwise comparisons between the main focus of the controls and constraints then will be seen which one has the most impact [8]. Table 2 shows the weight of each variable in each hierarchy.

After an assessment by using PHA, then creates a optimization model by combining the priorities at each hierarchy. In the first hierarchy is a constraints variable, in this hierarchy that be priority is road access is difficult (0.262). Then the second hierarchy is a objective variable, in this hierarchy that be priority is Access Improvement to tourist attractions (0.341). In the third hierarchy is a actor hierarchy whose priority is Government (0.472). In the last hierarchy is a affected society segment hierarchy and in this hierarchy that be priority is Society around Parahyangan Agung Jagatkartha Temple (0.378).

Table 2 shows priorities variable and weight result in each hierarchy by PHA. The results of combining the variable priority at each hierarchy is to create a optimization model is in order to develop destination travel, the Government form a team that works together with society around Parahyangan Agung Jagatkartha Temple creates a program to improve access to tourist attractions such as provision of more public transportation to tourist attraction, fixing the way to the tourist attraction and more information about tourist attractions with creates a website that contains about Parahyangan Agung Jagatkartha Temple.

Table 2. Priorities variable and weighting result in each hierarchy

Hierarchy	Variable	Weight
Constraints	The Difficulty of Public Transportation	0.210
	Road access is difficult	<b>0.262</b>
	Facilities and infrastructure inadequate	0.191
	Temple is poor maintenance	0.085
	Lack of information access	0.151
	Retribution system is unclear	0.099
Purpose	Access Improvement to tourist attractions	0.248
	Improvement of information about tourist attractions	<b>0.341</b>
	Facilities and Infrastructure Improvement	0.256
	Sustainable Tourist Attraction	0.156
	Maintenance	0.156
Actor	Government	<b>0.472</b>
	Parhyangan Temple Management	0.222
	Mass Media	0.172
	Non Government Organization	0.134
Society Affected Segment	Tourist	0.319
	Society Around Parahyangan Temple	<b>0.378</b>
	People who Pray	0.164
	Parhyangan Temple Management	0.139

### SWOT Analysis

To determine the tourism development direction, must be know first the tourism characteristics in the region. Tourism characteristics can be identified by SWOT analysis. SWOT analysis (Strenghts, Weaknesses, Opportunities, Threats) is a way to identify the character of the area in detail on the various factors of reviews to make a foothold for the development plans of the program in accordance with the condition of the area [10].

#### 1. Strengths

Strengths are the qualities that enable us to accomplish the organization's mission. These are the basis on which continued success can be made and continued/sustained. Strengths can be either tangible or intangible. Strengths are attributes or characteristics within the organization that are considered to be important to the execution and ultimate success of the project.

#### 2. Weaknesses

Weaknesses are the qualities that prevent us from accomplishing our mission and achieving our full potential. These weaknesses deteriorate influences on the organizational success and growth. Weaknesses are the factors which do not meet the standards we feel they should meet. Weaknesses in an organization may be depreciating machinery, insufficient research and development facilities, narrow product range,

poor decision-making, etc. Weaknesses are controllable. They must be minimized and eliminated.

### 3. Opportunities

Opportunities are presented by the environment within which our organization operates. These arise when an organization can take benefit of conditions in its environment to plan and execute strategies that enable it to become more profitable. Organizations can gain competitive advantage by making use of opportunities. Organization should be careful and recognize the opportunities and grasp them whenever they arise. In terms of classification opportunities has to do with external elements that will prove helpful in achieving the goals set for the project

### 4. Threat

Threats arise when conditions in external environment jeopardize the reliability and profitability of the organization's business. They compound the vulnerability when they relate to the weaknesses. Threats are uncontrollable. When a threat comes, the stability and survival can be at stake. Examples of threats are - unrest among employees; ever changing technology; increasing competition leading to excess capacity, price wars and reducing industry profits; etc.

Table 3. SWOT Analysis

	<b>Strength</b>	<b>Weakness</b>
<b>Internal Factor</b>	1. Located at the foot of Mount Salak with a very beautiful natural scenery and cool air. 2. The presence of several historical heritage (temples and statues) that can be passed during the spiritual travel in temple. 3. Temple area is very spacious 4. Hindus culture is very viscous in the around the temple. 5. Entrance fee is cheap 6. Temple environment is still natural.	1. Road access to Parahyangan Agung Jagatkartha Temple still inadequate, especially for cars. 2. There are no kiosk which selling crafts around the temple. 3. facilities and infrastructure inadequate that suitable with spiritual tourism needs for travelers. 4. Parahyangan Agung Jagatkartha Temple management not allow tourists to go more into the temple area because it is sacred as worship place.
<b>Eksternal Factor</b>		
<b>Opportunities</b> 1. An exotic nature can be used as a perfect destination. 2. Distance with other attractions around the temple is relatively close. 3. Local community supports and participae in tourism development.	<b>SO Strategy</b>  Create and developing spiritual tourism product and eco-tourism.	<b>WO Strategy</b>  1. Improving facilities and infrastructure quality in Parahyangan Agung Jagatkartha Temple. 2. Human resource improvement.
<b>Threat</b> 1. Local communities has not been able to produce a product that is local area characteristic. 2. Limited budget for tourism development in Parahyangan Agung Jagatkartha Temple. 3. Potential area around the temple is still not develop optimally. 4. There is no restaurant facilities. 5. There are no official travel agent add spiritual tourism in Parahyangan Agung Jagatkartha temple into a package tour.	<b>ST Strategy</b> Technology information improvement use for promotional activities.	<b>WT Strategy</b> Strengthening promotional distribution of spiritual travel products in Parahyangan Agung Jagatkartha temple to villas around the temple.

Based on the SWOT analysis result, then develop destination strategies in Parahyangan Agung Jagatkartha temple. The strategies are:

1. Strength - Opportunities strategy (*SO*) This strategy seeks to harness the power possessed for the opportunities that exist outside or external environment. The strategy that can be applied in developing destinations is to create and develop spiritual travel products and ecotourism quality.

2. Strength - Treats strategy (ST), This strategy take advantage the strength to face the threat. Strategies that should do in developing destination as spiritual tourism in Parahyangan Agung Jagatkartha temple is technology information improvement use for promotional activities.
3. Weaknesses - Threats Strategy (WO) this strategy designed to minimize the weaknesses by trying to take advantage from opportunities. The development strategy that can be applied in Parahyangan Agung Jagatkartha temple are improve the facilities and infrastructure quality in Parahyangan Agung Jagatkartha temple and human resource improvement.
4. *Weakness - Threats Strategy (WT)*, This strategy aims to survive by minimizing weaknesses to avoid the threat. The strategy can be applied in developing spiritual tourism in rh Temple is strengthen the promotional distribution of spiritual tourism product in Parahyangan Agung Jagatkartha temple to villas around the temple.

### **Strategies to Create and Develop Spiritual Travel and Ecotourism Product Quality**

An unique product itself will be an attraction for tourists. This is what should be used as a strategy to create and develop an ecotourism products quality. The product should be a product which is still rare and packed with attractive packages and empower local residents while still preserving nature and the environment. This product will provide a unique experience for tourists, improve the local economy and caring for the environment.

Program that can be applied are:

1. Education sustainable from the government and private sector about service quality and understanding of the Parahyangan Agung Jagatkartha temple.
2. Involving local people in formulating a tour package.
3. Collaboration with local businessman to provide accommodation services to tourists such as hotels and restaurants.
4. Provide experiences travel with involving tourists to get know more about the nature, culture, and unique activities of local community in the area around Parahyangan Agung Jagatkartha temple.

### **Strategies to use Information Technology for Promotional Activities**

Destinations promotion in Parahyangan Agung Jagatkartha temple is still not optimal. Though the temple is as beautiful as temples in Bali and is the second largest temple in Indonesia. Spiritual tourism and ecotourism promotion should be further improved by marketing. Programs that implemented are:

1. Promoting all the other potential attraction that exists in the Parahyangan Agung Jagatkartha temple by social media, magazine, newspaper, and make tourism website such as Parahyangan Agung Jagatkartha temple website.
2. Selling and promote spiritual travel by online system.

### **Strategies to Improve Infrastructure and Human Resource Quality in Parahyangan Agung Jagatkartha Temple**



Facilities and infrastructure in tourist destinations is important to provide convenience for tourists while they on them way to the destination. The strategies that will implemented are:

1. Collaboration with government and private sector to support the provision of facilities and infrastructure around the temple until the maintenance.
2. Improve the facilities in the area around the temple as expanding the parking area, building restaurants and clean restroom.
3. Educate local community to be tour guide.

#### **Strategies to Strengthen Promotional Distribution of Spiritual Tourism Products in Parahyangan Agung Jagatkartha Temple to Villas around the Temple.**

1. Collaboration with Villa management around the temple to promote spiritual travel package in Parahyangan Agung Jagatkartha Temple.
2. Spread brochures of spiritual travel package in Parahyangan Agung Jagatkartha Temple in the street, mall, other places.
3. Collaboration with travel agent to promote spiritual travel in Parahyangan Agung Jagatkartha package.

#### **CONCLUSION**

Parahyangan Agung Jagatkartha Temple built in a unique location on Mount Salak and has historical value. This place is very potential to develop to be a good destination. Spiritual travel will be great experience to tourist when they come to this place. This temple needs development and efforts to be a tourist destination that has value added and become competitive. So many risks involved when in the process developing the destinations. These risks need to be minimized by an optimization model in its efforts to develop into a destination travel with spiritual tourism. This model created by combining the priorities variable at each hierarchy. The results of combining the variable priority at each hierarchy is the Government form a team that works together with society around Parahyangan Agung Jagatkartha Temple creates a program to improve access to tourist attractions such as provision of more public transportation to tourist attraction, fixing the way to the tourist attraction and more information about tourist attractions with creates a website that contains about Parahyangan Agung Jagatkartha Temple.

Optimization models are made to minimize the risks in destination developing. It needs a good strategy to develop a destination. Therefore based on SWOT analysis to analyze temple's internal and external factors, it can be formulated four strategies that can be used to develop destination travel in Parahyangan Agung Jagatkartha temple. The strategies are :

1. Create and developing spiritual tourism product and eco-tourism.
2. Technology information improvement use for promotional activities.
3. Improving facilities and infrastructure quality in Parahyangan Agung Jagatkartha Temple and Human resource improvement.
4. Strengthening promotional distribution of spiritual travel products in Parahyangan Agung Jagatkartha temple to villas around the temple.

In conducting the development of tourism needs something that attract and also should be supported by the infrastructure. The hospitality of the local community is needed to addressing tourism development.

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