

# WORLD CULTURAL HERITAGE DESIGNATED IMPACTS IN JATILUWIH AGRITOURISM, BALI, INDONESIA

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**Submission date:** 26-Jan-2023 09:30AM (UTC+0700)

**Submission ID:** 2102083708

**File name:** Final\_Article\_Dewa\_Putu\_Oka\_Prasiasa.docx (270.05K)

**Word count:** 7831

**Character count:** 46550

**WORLD CULTURAL HERITAGE DESIGNATED IMPACTS IN JATILUWIH  
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[dewaputuokaprasiasa@undhirabali.ac.id](mailto:dewaputuokaprasiasa@undhirabali.ac.id)**ABSTRACT**

**Purpose:** This research examined the economic and socio-cultural impacts on the villages of Jatiluwih in Bali after the listing of *subak* as World Cultural Heritage. In addition, this study also aims to identify the constraints encountered by the Operations Management and establish management programs in managing Jatiluwih Tourist Attraction as part of World Cultural Heritage.

**Theoretical framework:** Tourism, as a product, cannot be exported but imports the consumers to consume the product in the exporting country. Therefore, tourism cannot exist in separation from the host community. When planning for tourism, local regional and national governments should be aware of the pressures on the physical and social environment caused by the inflow of tourists. Host communities also need to be aware that tourism is likely to cause a wide range of impacts.

**Design/methodology/approach:** This study used qualitative methods supported by quantitative data through Interpretive Structural Modeling (ISM) analysis. Data collection techniques used were observation, interviews, document studies, and focus group discussion.

**Findings:** This study contributes a concise analysis of the various impacts, due to the growth of tourism, on the local community living within the World Cultural Heritage, such as increased in income, changes in personal relationships, modernization of agriculture, and the readiness of the society to move into social organizations. Increasing the number of tourism jobs while simultaneously maintaining World Cultural Heritage properties were significant challenges faced by Operations Management of Jatiluwih Tourist Attraction.

**Research, Practical & Social implications:** By analyzing tourism impacts around the World Cultural Heritage, one could realize the benefits acquired by the local community.

**Originality/value:** This research examines the constraints encountered by World Cultural Heritage site based on tourism impacts by applying Interpretive Structural Modeling analysis.

**Keywords:** *World Cultural Heritage, tourism impacts, Interpretive Structural Modeling, Bali.*

## INTRODUCTION

Heritage tourism has become an increasingly significant component of global tourism industry (Timothy, 2018), particularly for destinations such as Bali in its attempt to diversify its attractions away from sea, sand, and sun. As the tourists become increasingly aware and more interested in understanding heritage, it became one of the industry's fastest-growing segments (Prideaux et al., 2013). This is confirmed by Chen (1998) that the primary motivating factor of heritage tourists' travel is for the pursuit of knowledge. Consequently, historic towns and quarters are competing to attract tourists (Timothy and Tahan, 2020). World heritage sites had been used to represent national identity symbols (Nuryanti, 1996; Palmer, 1999) and employed considerably as tool for tourism marketing campaigns (Hasan and Jobaid, 2014).

As a leading destination in Indonesia, tourism development in Bali had set a milestone through affirmation to develop cultural tourism. This affirmation is strengthened by Regional Regulation Number 2 of 2012 concerning Cultural Tourism. Furthermore, in June 2012, Bali's *subak* received recognition from UNESCO as part of World Cultural Heritage. The label given by UNESCO is "Cultural Landscape of Bali Province: the *Subak System* as a Manifestation of the *Tri Hita Karana Philosophy*". This cultural tradition had shaped the landscape of Bali since the 12<sup>th</sup> century. The cultural landscape of Bali "comprises of five rice terraces and their water temples that cover 19,500 hectares. The temples are the focus of a cooperative management system of canals and weirs, known as *subak*, that dates back to the 9<sup>th</sup> century. Included in the landscape is the 18<sup>th</sup> century Royal Water Temple of Pura Taman Ayun, the largest and most impressive architectural edifice of its type on the island" (UNESCO, World Heritage List website, 2021).

With the recognition of *subak* in Jatiluwih as part of the World Cultural Heritage, the Tabanan Regency Government then established the Tourist Attraction Management Agency based on Tabanan Regent Regulation Number 84 of 2013. The Management Agency then formed Operations Management of Jatiluwih Tourist Attraction. By establishing a management body, it is expected that the management of tourist attractions can be more professional. The growing interest in the Bali traditional water management system (*subak*) as part of World Cultural Heritage lead to the rise in the number of tourist arrivals to Jatiluwih. The world's attention is focused on the rice fields in Jatiluwih Village, which is in Penebel District, Tabanan Regency. Jatiluwih Village has a beautiful natural panorama with a unique terraced rice field and resides by religious, agrarian communities. The air is also relatively cool because it is located at an altitude of 700 meters above sea level.

Based on data obtained from Operations Management of Jatiluwih Tourist Attractions, after recognition as part of World Cultural Heritage, the number of tourist arrivals to Jatiluwih Tourist Attraction has increased, the percentage increase between the year 2012 until 2019. The tourist arrivals has increased from 97,909 people in 2012 to 314,443 people in 2019. In 2012 the number of tourist visits was 97,909 people, while in 2013 as many as 101,560 people, an increase of 37.28%. In 2014 the number of tourist visits was 165,158

people. If the number of tourist visits in 2013 is compared to the number of tourist visits in 2014, there is an increase of 62.62%. In 2015 the number of tourist visits was 164,358 people. If the number of tourist visits in 2014 compared to the number of tourist visits in 2015 there was a decrease of 0.48%. In 2016 the number of tourist visits was 213,509 people. If the number of tourist visits in 2015 compared to 2016 there was an increase of 29.9%. In 2017 the number of tourist visits was 250,953 people. If the number of tourist visits in 2016 compared to 2017 there was an increase of 17.53%. In 2018 the number of tourist visits was 277,189 people. If the number of tourist visits in 2017 compared to 2018 there was an increase of 10.45%. In 2019 the number of tourist visits was 314,443 people. If the number of tourist visits in 2018 compared to 2019 there was an increase of 13.43%. In 2020 the number of tourist visits was 93,743 people. If the number of tourist visits in 2019 compared to 2020 there was a decrease of 70.18%. In 2020 the number of tourist visits has decreased significantly, this is due to the Covid-19 pandemic. According to the number of tourist visits to Jatiluwih Tourist Attraction, between the year 2012 until 2019, the average number of tourist visits per year is 186,535 with an average annual increase of 15.16%. In 2020 the number of tourist visits has decreased significantly, this is due to the Covid-19 pandemic.

This rise in the number of tourist visits directly impacted the revenue received by Operational Management of Jatiluwih Tourist Attraction. Income is raised by selling entrance tickets, parking fees, and rental of the site for shooting films, taking pre wedding or commercial photos, campground rental fees, and usage fees for other social activities. In 2012 the gross income was IDR 804,010,400, while in 2019 was IDR 11,149,258,150, achieving an average yearly growth of 54.29 % (Operations Management of Jatiluwih Tourist Attractions, 2019).

With the establishment of the Bali traditional water management system (*subak*) as part of World Cultural Heritage, the evolution of the Jatiluwih as a tourist attraction enters the development stage of the five stages in Butler's Tourism Area Life Cycle Model. This can be seen from the growth in the number of tourists, followed by increased tourism facilities such as restaurants, *homestays*, parking facilities, *tracking*, and other facilities. The changes that occur have various impacts on the economy.

The distribution of income received by *subak* residents from the Operations Management of Jatiluwih Tourist Attraction is used to finance activities relating to *subak*, like maintaining and repairing the Bali traditional water management system (*subak*) irrigation channels. The incomes received by *subak* residents improve their standard of living. Therefore the farmers are committed to maintaining the existing agricultural land. Ardika (2015: 106) concluded that the benefits gained through tourism industry activities could be used to conserve cultural heritage and biodiversity. However, there are still some *subak* residents who are not satisfied with the distribution of income. This, in turn, causes conflicts between farmers and *subak* officials, affecting the management of tourist attractions.

The development of tourism at heritage sites generates financial resources that can be used to preserve and sustain the heritage sites (Su et al., 2016). On the other hand, tourism development may put pressure on the residents' physical, natural, and cultural environment and daily life. In many cases, residents' economic status, social support, and psychological well-being are compromised with the expansion of tourism at World Heritage Sites (Jimura, 2011). This study aims to identify tourism's economic and socio-cultural impacts on the World Cultural Heritage residents in Jatiluwih. In addition, this study also aims to identify the constraints encountered by the Operations Management and establish management programs in managing Jatiluwih Tourist Attraction as part of World Cultural Heritage.

## LITERATURE REVIEW

Tourism, as a product, cannot be exported but imports the consumers to consume the product in the exporting country. Therefore, tourism cannot exist in separation from the host community. When planning for tourism, local regional and national governments should be aware of the pressures on the physical and social environment caused by the inflow of tourists. Host communities also need to be aware that tourism is likely to cause a wide range of impacts (Mason, 2020). Farid (2015) conducted a case study research in Mali and Ethiopia found that local people in Mali received maximum economic benefits from tourism. The Ethiopians need to increase competitiveness to increase tourism's contribution to the local economy, income, and employment opportunities. The study by Terkenli et al. (2007) found that tourism management produces opportunities and infrastructure improvements and increases most living standards. Terkenli et al. (2007) concluded that society's social and cultural values seemed more resistant to change. On the other hand, economics and the practice of living habits are vulnerable to transformation. In addition, Sandeep and Vinod (2012) explained that the interaction between the two cultures (host and guest) leads to changes in the host and living standards of the local community, labor, attitudes, habits, and mindset.

In addition to having an impact on the economy, tourism development could also have impacts on socio-culture. Theoretically, Cohen (1984) divided the social and cultural impacts of tourism into ten groups: the impact on the interrelation and involvement between the local society and the wider society, including the level of autonomy or dependence; impact on interpersonal relationships between society members; impact on the social organization / institutional foundations; the impact on migration to and from tourism areas; the impact on the rhythm of social life; impact on work distribution patterns; impact on social stratification and mobility; impact on the distribution of influence and power; the impact on increasing social deviations; and the impact on the arts and customs. The economic benefits generated from tourism can take various forms (Weaver and Lawton, 2001), namely employment, increasing opinion, diversifying the economy, and infrastructure.

Assessing socio-cultural impacts was complex. First, the complexity and difficulty of separating socio-cultural impacts from other impacts were difficult to measure (Matheison and Wall, 2006). During the World Heritage Convention in 1972, UNESCO defined world cultural heritage as monuments, architectural buildings, statues, and large paintings, ancient elements or buildings, inscriptions, cave-dwelling houses, and mixed attributes of the overall unique value from historical, artistic, or knowledge views. A group of buildings: grouped or fragmentary or related buildings that, because of their architectural form, togetherness, or place in the scene, is an extraordinary universal value from the viewpoint of history, art, or knowledge. The site could be wholly man-made or a combination of man-made and natural, and in areas containing archaeological sites that have outstanding universal value from the viewpoint of history, aesthetics, ethnology, or anthropology (Boniface, 1995). Keitumetse (2009) defined cultural heritage tourism as a component of cultural heritage (monuments, archaeological sites, museums, and others) and cultural experiences (festivals, communities). Another opinion expressed by DuCros (2001) was cultural heritage products as the heritage art of galleries, cultural centers, heritage entertainment venues, heritage trails, and others. Cultural heritage represented something that relates to the past and has a unique or significant value as wealth or inheritance (Keitumetse, 2016).

The heritage industry poses a conflict between heritage protection and tourism development (Li et al., 2008:308). Conflicts are particularly prominent in developing countries, where cultural heritage is thriving. Many heritage sites were threatened by increased commercialization (Edson, 2004), or damage from uncontrolled tourist access, in addition to excessive restoration, intended to enhance tourist attraction (De la Torre, 2013). With the growing popularity of heritage tourism, governments, communities, and individual

entrepreneurs exploited heritage sites for economic purposes (McMorran, 2008). On the other hand, Chambers and Rakic (2008:145) show a paradox where a heritage site is considered an extraordinary universal value (and hence awarded the World Heritage Award). It is implicitly no longer expected to be regarded as symbols of a particular national identity. The term cultural heritage site provoked debate over issues belonging to and ownership and transformed these sites into a contested heritage.

Parimmartha (2008) stated that, philosophically, the *Subak* Jatiluwih system as a form of Balinese cultural heritage has value in the sense of building equality, the combination of cultural potential (community creativity), and natural environment (landscape). In addition, a harmonious relationship with the power of God continues to be preserved, guided by the concept of *Tri Hita Karana*. Establishment of a *subak* as the World Cultural Heritage by UNESCO because it has an outstanding universal value of the family.

*Subak* can be described as coordination of water usage by the farmers for their rice fields from the same source with *Bedugul* temples and had complete autonomy both inside (taking care of their household interests) and outside (having free relationship directly with outsiders) (Sutawan et al., 1986: 377). In addition, Sutawan et al. (1986) emphasized that *subak* and the farmer organization that regulated the irrigation of its members' fields also had the right of autonomy. Meanwhile, Geertz (1980: 78-79) had highlighted that *subak* was the term that was commonly translated as irrigation society. Nevertheless, the *subak* is, in fact, very much more; an agricultural planning unit, an autonomous legal corporation, and a religious community. A *subak* is defined as all the rice terraces irrigated from a single dam and major canal.

*Subak*, as a traditional irrigation system, has several essential characteristics. Sutawan (2008: 29) reiterated that these essential characteristics had clear and definite boundaries according to the hydrological area, not the village administrative area; formal irrigation institutions; religious rituals were an inseparable part of *subak* irrigation management; had the right of autonomy in managing own household; had one or more shared water sources and one or more *Bedugul* temples; each *subak* member had his own "one inlet or one outlet"; *subak* activities depend on mutual cooperation spirit or help; mutual assistance and mutual trust respect the basis of togetherness and kinship; and decision making in the management of the *subak* irrigation system based on the principles of democracy, justice, transparency, and accountability.

According to UNESCO, the determination of *subak* as World Cultural Heritage stated that "cultural properties [that] represent the combined works of nature and man ... they are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and opportunities presented by their natural environment and successive social, economic and cultural forces, both external and internal". Based on the definition given by UNESCO, that *subak* as world cultural heritage is a combination of nature and human work. *Subak*, in its development, must provide benefits for the preservation of nature and the success of social, economic, and cultural resources aspects (Yamashita, 2013).

## MATERIAL AND METHODOLOGY

Data were collected through observation, interviews, document studies, and focus group discussions. Observations were applied to examine the economic and socio-cultural impacts that occurred in Jatiluwih. Interviews with informants were conducted using in-depth interviews to obtain complete and comprehensive data related to economic and socio-cultural impacts on society. Data collection was also conducted through document studies by utilizing the theories and research results related to economic and social culture in Jatiluwih. As for the focus group discussions, nine key informants or experts were selected from among the tourism entrepreneurs and local communities using purposive sampling. The nine experts

consisted of community leaders (head of traditional village, head of *subak* and head of village), Head of the Agriculture Office of Tabanan Regency, Head of Tabanan Regency Tourism Office, tourism practitioners (Operations Manager of Jatiluwih Tourist Attraction, Chairman of Association of Indonesian Travel Agent, and Chairman of Indonesian Guide Association) and academicians.

The research also uses Interpretive Structural Modeling (ISM) for data analysis. ISM is used to identify relationships between specific parts to interpret a problem or issues (Jharkharia and Shanker, 2005). The ISM technique is a process that transforms a mental model that is not clear and weak in explanation, becomes a system model that is clearly defined and applicable for various purposes (Saxena, 1992). ISM was used in the poverty alleviation study in rural China (Cai and Xia, 2018), in institutional development in the Central Java potato agroindustry (Yusianto and Hardjomidjojo, 2019), and in design an agro-industrial tourism development strategy in facing the new normal life in Bondowoso Regency, East Jawa (Kustiari et al., 2021). Analytical techniques using the ISM model are intended to formulate the constraints encountered by Operations Management of Jatiluwih Tourist Attraction in sustain Jatiluwih as a tourist attraction.

## RESULTS AND DISCUSSION

Operations Management of Jatiluwih Tourist Attraction was set up as part of an organization managing the World Cultural Heritage attractions and among its objectives is to analyze the economic impacts (with employment and income indicators), socio-cultural impacts (with mutual cooperation, agricultural culture, and social organization indicators) of tourism on the residents of Jatiluwih.

### Economic and Socio-Cultural Impacts

Operations Management of Jatiluwih Tourist Attraction was set up as part of an organization managing the World Cultural Heritage attractions and among its objectives is to analyze the economic impacts (with employment and income indicators), socio-cultural impacts (with mutual cooperation, agricultural culture, and social organization indicators) of tourism on the residents of Jatiluwih.

The increase in the number of travel industry organizations had given rise to the opportunities of being employed in this sector. Among 2010-2012, a total of 48 individuals were employed in the eateries and homestay organizations. Of the total, 30 people (62.5%) came from Jatiluwih Village, while the remaining 18 individuals (37.5%) were from outside of Jatiluwih Village (Widari, 2015). Alongside the establishment of *Subak* Jatiluwih as part of the World Cultural Heritage and the expanding number of visitors, which had impacted the travel industry organizations, the tourism workforce had also expanded. Between 2013 - 2018, the number of individuals employed had risen to 112 individuals. Of the total, 77 individuals (68.7%) originated from Jatiluwih Village, and 35 people (31.3%) originated from outside Jatiluwih Village.

Jatiluwih Tourist Attraction Management Agency was set up and based on the Tabanan Regent Guideline Number 84 of 2013. The Management Board at that point shaped Operations Management of Jatiluwih Tourist Attraction. The number of staff retained by Jatiluwih Tourist Attraction Management were 27 individuals. At the administrative level there were ten individuals, while the operational staff were made up of 17 individuals. In the wake of assessing the execution of the executives, to improve administration and execution, an expansion in the number of workers was done with the understanding between the Management Board and Operations Management of Jatiluwih Tourist Attractions. The number of staff employed in 2017 were 56 individuals. At the administrative level, the number of administrative staff were expanded to 14 individuals, and the operational staff to 42 individuals. When compared to the number of operational staff in 2013 from 17

individuals, there was an addition of 25 individuals or 147%. While at the administrative level, the number of managers were expanded from 10 to 14 individuals, an expansion of 4 individuals or 40%.

The expansion in business assimilation from the administration of Jatiluwih Tourist Attraction supported the statement of Weaver and Lawton (2001), which expressed that the host will be retained into work because of the travel industry improvement. The quantity of neighborhood work retained in the restaurant, food stalls, and homestay organizations was still moderately low, contrasted with the populace remembered for the workforce gathering. A significant number of inhabitants of Jatiluwih Village work outside the village, leaving the farming job to the older residents. The agriculture area is the primary business of generally neighborhood individuals.

Jatiluwih Village is a farming area in a rural territory and majority of the residents are farmers. The income of the farmers within the neighborhood depends upon their agricultural yield. Income received during each reap (once every six months) shifts depends on the size of land owned by every farmer. For instance, farmers with 20 acres of rice fields during each reap get an income of 1 ton, or around IDR 4,000,000 (gross income); while farmers with a land size of 36 acres will earn during each harvest 1.5 tons or around IDR 6,000,000 (gross income).

Even though the uniqueness of rice terraces with its *subak* system had attracted more tourists to visit Jatiluwih Village during the vacation, this increase has not affected the income received by the farmers. They tried to be self-sufficient with the income received as rice farmers. A few farmers did side jobs to gain extra income: as manual laborers in chicken ranches or in the travel industry. The increase in the number of tourist arrivals influenced the income received from the Management of Jatiluwih Tourism Attraction. The gross income derived from managing Jatiluwih Tourism Attraction is shown in Table 2.

Table 1. Gross Revenue Management of Jatiluwih Tourist Attraction 2011-2020

No.	Year	Total Income (IDR)	Enhancement (%)
1	2011	466,593,000	-
2	2012	804,010,400	72.3
3	2013	1,509,795,500	87.8
4	2014	3,293,216,500	118.1
5	2015	3,297,436,046	0.1
6	2016	5,088,165,000	54.3
7	2017	9,294,100,000	82.7
8	2018	10,059,246,000	8.2
9	2019	11,149,258,150	10.8
10	2020	2,474,602,400	-77.8

Source: Operations Management of Jatiluwih Tourist Attractions, 2021

The impact of the recognition of Jatiluwih as part of World Cultural Heritage on the additional income received by the communities both directly and indirectly supported Farid's research (2015). The research mentioned that local societies played a crucial role in managing cultural heritage to obtain economic benefits from tourism management. Many researchers wrote on the impacts of tourism, such as employment opportunities (Terkenli et al., 2007), increases standard of living standards (Cohen, 1984; Weaver and Lawton, 2001), and increase income for the local community (Sandeep and Vinod, 2012). The results of Akama's research (2004) opposed the statements of Farid (2015), Terkenli et al. (2007), Cohen (1984), Weaver and Lawton (2001), Sandeep and Vinod (2014). Akama (2004) stated that only between 2% to 5% of total tourism revenue filters down to the society on the surface, in the form of low-paid jobs, souvenir sales, and agricultural products.



Mutual cooperation in the implementation of customs in the communities of Jatiluwih Village is still maintained even better. When traditional ceremonies, the society prepared all

of the necessities of the ceremony in mutual cooperation. However, there was also a sense of mutual cooperation, which began to decline. As a social group, the communities of Jatiluwih Village usually did their society service to clean the village area around the rice terraces. Before the designation of *subak* as World Cultural Heritage, villagers with awareness and sense of ownership, would attend with enthusiasm every public service events held. After establishing the Jatiluwih Tourist Attractions Management Agency, cleanliness along the rice terraces and the roads traversed by tourists were under the responsibility of the management. Local communities no longer want to carry out public service along the rice terraces. The communities believed that cleanliness around the rice terraces was no longer their responsibility (Utama, et al., 2023).

The transfer of responsibility for cleaning the area around the rice terraces from the communities to the manager decreased the mutual cooperation aspect. This is the cause of reduced personal interaction in society. The reduced personal interaction in the communities strengthens Cohen (1984), who argued that one of the socio-cultural impacts of tourism was the impact on interpersonal relationships between community members and the decreasing personal relationship. However, it is associated with Mantra (1993). In that case, the decreasing personal relationship is a socio-cultural change in the tourism area in Bali and only occurred in the outer layer because it is related to changes in economic status. While deep layers, such as *Banjar* solidarity, ups and downs, and religious activities, remained sustainable. Thus, this research found that there has been a change in the personal relationships of communities in the villages located in the World Cultural Heritage area and changes in personal relationships caused by changes in economic status.

Agricultural culture implemented by *subak* members continued to be carried out, namely ceremonies related to agricultural activities, including *mapag toya*, *kempelan*, *ngendag tanah carik*, *ngurit*, *ngerasakin*, *pangawiwit*, *ngekambuhin*, *pamungkah*, *penyepian*, *pangarestitian nyegara gunung*, *mesaba*, *ngadegang Batari Sri*, *nganyarin* and *manyi*. All of these ceremonies continue to be held by each *subak* as a tradition that must be carried out. Agricultural culture in the implementation of ceremonies relating to agricultural activities and the rice planting system continued to be implemented. However, from the rice planting pattern adopted by *subak* members, there has been a shift. The shift occurred due to the current modernization in agriculture that hit farmers in the Jatiluwih Village. Modernization in agriculture in the form of the use of tractors to plough fields. The existence of modernization elements in the form of tractors in the processing of rice fields in the Jatiluwih Village reinforces Cohen (1984) that socio-cultural changes in the form of these tractors are due to changes in the rhythm of people's lives. With the establishment of *Subak* Jatiluwih by UNESCO as World Cultural Heritage, the rhythm of community work was higher due to working in a side business in the tourism sector. With their opportunity of getting jobs in the tourism sector, their time to work allocated to the rice fields is getting less. Thus, the use of mechanization was the choice taken to operate the rice fields. Thus, the findings of this study from an agricultural culture that there has been a change in work rhythm due to the development of tourism businesses triggered by the establishment of *Subak* Jatiluwih as a World Cultural Heritage site (Waruwu, et al., 2022).

Although using tractors to cultivate the fields had hit farmers in Jatiluwih Village, some farmers still continue to use cows/buffaloes to plough their fields. Farmers still use cows/buffaloes because the quality of the harvested rice is better than using tractors. When using a cow/buffalo to plough the field, the plowed land will be much deeper than using a tractor. Another reason that makes some farmers continue to use cows/buffaloes to plough the

fields is that the land are far from the *subak* road so that it cannot be passed by the tractor. In addition, the use of cows/buffalo to plough the fields can reach difficult parts of the fields (such as ricefields corners) and did not cause air pollution. This impact strengthens Cohen (1984) which stated that socio-cultural changes in the form of the use of the tractor are due to changes in the rhythm of people's lives which tend to be increasingly busy working on side businesses in the tourism sector, so they did not have enough time to work in their fields (Utama, 2016).

Along with its development, traditional villages in Jatiluwih Village are still respected as a traditional social organization. The existence of traditional villages in Jatiluwih Village is increasingly maintained as a traditional social organization. From previous ancestors, if there are communities that face customary problems, they are resolved jointly between traditional village administrators and villagers, this is still true today. The community still entrusts and respects the existence of customary villages as organizations that have the authority and autonomy to regulate customary issues in Jatiluwih Village. Traditional social organizations that exist include the arts. The arts organizations continued to be preserved and developed (Widiastini, et al., 2023).

Besides the beauty of rice terraces as a tourist attraction, the existence of *subak* was also another potential that Jatiluwih Village owns. *Subak* is a traditional organization that regulated irrigation, is a social organization inherited from generation to generation by the local communities. The development of the era did not affect *Subak* Jatiluwih, moreover with the recognition of *subak* as World Cultural Heritage. The majority of Jatiluwih communities made a living as farmers, increasingly motivated to maintain the existence of *subak*.

#### **Constraints Encountered**

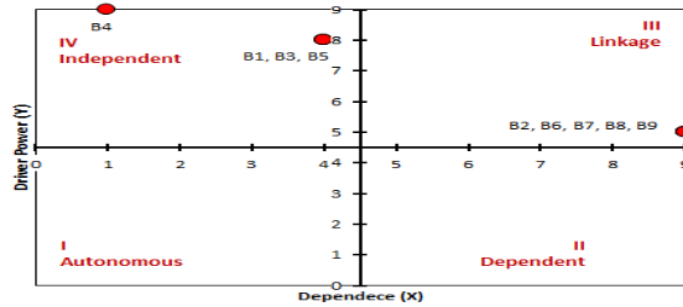
Jatiluwih Tourist Attraction with its various potentials requires programs in its management in order to be sustainable. The management of Jatiluwih Tourist Attraction faces various obstacles. In formulating programs, various phenomena related to the management of Jatiluwih Tourist Attraction were carried out. The constraints encountered of Jatiluwih Tourist Attraction is formulated based on the results of Interpretive Structural Modeling (ISM) analysis. Filling out the ISM questionnaire (expert survey) involves experts from local governments, community leaders, and practitioners found that there were at least four economic impacts and five socio-cultural impacts in Jatiluwih Jatiluwih Tourist Attraction. So the tourist attraction development gone well, it was necessary to identify program constraints. Economic impacts include community income, tourist attraction management income, agricultural employment, and tourism employment. Socio-cultural impacts include mutual cooperation, personal communication, agricultural culture, modernization of agriculture, and social organization. By using Interpretive Structural Modeling (ISM) analysis.

Element of program constraints of economic and socio-cultural impacts in the form of 9 sub-elements, namely:

- B1: community income
- B2: mutual cooperation
- B3: tourist attraction management income
- B4: tourism employment
- B5: agricultural employment
- B6: personal communication
- B7: agricultural culture
- B8: agricultural modernization
- B9: social organization

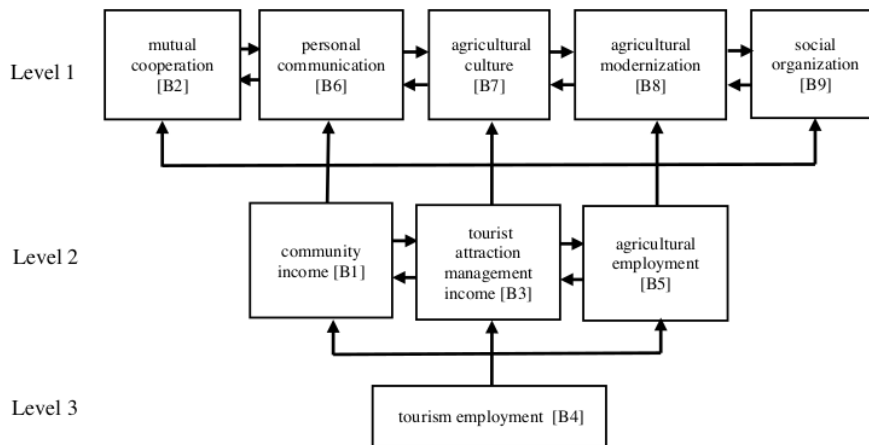
The analysis showed that the highest Driver Power (9) and lowest dependence (1) was B4. This means that sub-element B4 (tourism employment) was a key sub-element of the program constraint with the highest Driver Power pushing other sub-elements and has the

lowest dependence on other sub-elements. The second highest Driver Power (8) and the lowest dependence (4) were B1, B3, and B5. It meant that the sub-elements B1 (community income), B3 (tourist attraction management income), and B5 (agricultural employment) were the second key sub-elements of the program constraints that have strong Driver Power push other sub-elements and has a low dependence with other sub-elements. Other sub-elements (B2, B6, B7, B8, and B9) become linkage sub-elements (linkage). Dependence and driver power diagrams as in Figure 1.



**Figure 1**  
Dependence and Driver Power Diagrams of Program Constraints  
(Source: Processed of Research Results, 2021)

Based on Driver Power and Dependence diagrams, there was one sub-element in sector IV (independent). There were no sub-elements that were in sector II (dependent). Sub element B4 (tourism employment) was in sector IV (independent); other sub-elements that are also in sector IV are B1 (community income), B3 (tourist attraction management income), and B5 (agricultural employment). Sub elements B2 (mutual cooperation), B6 (personal communication), B7 (agricultural culture), B8 (agricultural modernization), and B9 (social organization) are in sector III (linkage). Referring to the Driver Power and Dependence diagrams, the structured diagram of the constraints then arranged as in Figure 2.



**Figure 2**  
Structured Diagram Program Constraints  
(Source: Prepared by Authors, 2021)

The structured diagram showed that increasing the number of tourism employment were a major constraint faced by Operations Management of Jatiluwih Tourist Attraction that maintain the World Cultural Heritage Area and the sustainability of *subak*. Apart from tourism employment, the other constraint were the occurrence of income inequality in the community between those who work in the tourism sector and those who work in the agricultural sector as well as *subak* members, the unequal distribution of income provided by Operation Management of Jatiluwih Tourist Attraction to water irrigation *subak*. The other constraint encountered of tourist attraction development, which is included in the sub-element of the linkage, is related to one another. This sub-element is also a sub-element that connects key sub-elements (tourism employment), pushing constraints in mutual cooperation, personal communication, agricultural culture, modernization of agriculture, and social organization. In this regard, the central government and regional governments need to push for economic and socio-cultural sustainability, especially for tourist attractions as part of World Cultural Heritage. Refore, there is need to build and develop local potentials that serve as leading tourism destinations based on the preservation of resources, environment and culture (Agustina et al., 2023) The aim was to encourage the tourist attraction development in Bali to be sustainable, which was sustainable from the economic, socio-cultural, and environmental aspects, and implement the principles to community-based tourism.

A sustainable Jatiluwih Tourist Attraction management programs is formulated based on constraints encountered. Programs preparation based on the results of Focus Group Discussion conducted with experts, they are as follows:

a. Development of agricultural culture attraction packages

The beauty of rice terraces is one of the attracting factors for tourists visiting Jatiluwih Tourist Attraction. Enjoying the beauty of rice terraces and trekking are activities that can be done by tourists, so tourists only a few hours spend while in the tourist attraction. In order for tourists to engage in other tourist activities and to provide new experiences for tourists, the operational management of the tourist attraction offers packages of agricultural culture attractions. Tourists can do activities plowing fields, planting, and harvesting rice.

b. Homestay development

With the development and diversification of tourism products, the length of tourist visits at Jatiluwih Tourist Attraction is expected to be further extended. The development of lodging facilities in the form of homestays is related to the status as a tourist village, which utilizes local people's homes intended so that tourists can get to know more about rural community life and interact with local communities. In addition to providing lodging, tourists who stay overnight in homestays are also taught to cook traditional Jatiluwih cuisine.

c. Job creation and entrepreneurship training

Improving the welfare of local communities is one of the objectives of the management of Jatiluwih Tourist Attraction. To achieve this goal, efforts can be made through job creation. Based on the results of the study, the management of tourist attractions after Subak Jatiluwih was designated as World Cultural Heritage had an impact on increasing employment and income for local communities. For this reason, it is necessary to create jobs from the development of agro tourism packages, spiritual tourism, and homestays.

d. Increased participation of farmers

Farming communities as owners of rice fields that are used as tourist attractions need to be involved in the management of tourist attractions. Increasing farmer participation is carried out by involving in agricultural culture attraction packages in the form of plowing fields, planting rice, and harvesting rice. Income distribution for *subak* needs to be improved, in

addition to not being charged for ceremonies related to rice field activities, it can also provide additional income for farmers.

e. Tourism socialization and environmental conservation training

Stakeholders' understanding of tourism, especially those related to World Cultural Heritage must continue to be instilled. Socialization regarding Tourism Awareness through the implementation of *Sapta Pesona* needs to be given regularly to local communities, entrepreneurs, and the Operational Management of Jatiluwih Tourist Attraction. In addition, education and learning are also provided to increase understanding of *Subak's* universal understanding values. With continuous socialization, it is hoped that stakeholders will have similar awareness and understanding to realize synchronization so that they can coordinate with each other, and are committed to maintaining the sustainability of tourist attractions with the concept of balance between the use and protection of cultural heritage sites.

### CONCLUSION

After *Subak* Jatiluwih designed as World Cultural Heritage, this research found that economic impacts are increasing in the tourism sector employment. Whereas related to income, this research found an income enhancement received by the communities of Jatiluwih Village, both those working directly in the tourism sector and those working indirectly in the tourism sector, the increase in the number of tourist arrivals influenced the income received from the Management of Jatiluwih Tourism Attraction. As for the socio-cultural impacts, it was found that in Jatiluwih Tourist Attraction, the community whose village is located in World Cultural Heritage area, there has been a change in personal relationships due to changes in economic status, which is characterized by the phenomenon of decreasing mutual cooperation activities. Agricultural culture in the implementation of ceremonies relating to agricultural activities and the rice planting system continued to be implemented however, this research also found the modernization of agriculture in the form of tractors usage in rice field processing. Along with its development, traditional villages in Jatiluwih Village are still respected as a traditional social organization. The majority of Jatiluwih communities increasingly motivated to maintain the existence of *subak* as a traditional organization that regulated irrigation.

The constraints encountered by the Operations Management of Jatiluwih Tourist Attraction include apart from tourism employment, the occurrence of income inequality in the community between those who work in the tourism sector and those who work in the agricultural sector, the unequal distribution of income provided by Operation Management of Jatiluwih Tourist Attraction to water irrigation *subak*. The other constraint encountered of tourist attraction development pushing constraints in mutual cooperation, personal communication, agricultural culture, modernization of agriculture, and social organization. Management programs in managing Jatiluwih Tourist Attraction as part of World Cultural Heritage include development of agricultural culture attraction packages, homestay development, job creation and entrepreneurship training, increased participation of farmers and tourism socialization and environmental conservation training.

Based on these findings, some things that can be suggested for the tourist attraction development as part of World Cultural Heritage as follows: economic activities were essential to do. However, traditional social activities such as mutual cooperation need to be maintained and developed to maintain personal relationships in the village. The communities is allowed to have side jobs in the tourism sector, the main work as a farmer must be carried out. Because by continuing to work as a farmer, the status of *subak* as World Cultural Heritage will be maintained.

### LIMITATIONS AND FUTURE STUDY RECOMMENDATIONS

In the context of sustainable tourism, this research did not analyze the environmental impacts. Also, it did not examine the role of stakeholders in the development of tourist attractions in the World Cultural Heritage area. As for future research, adopting mixed-method approaches, whereby qualitative and quantitative methods of data collection and analysis are combined, is more likely to improve the accuracy of research findings, and it could provide new perspectives for sustainable heritage tourism in Jatiluwih as part of World Cultural Heritage. Additionally, it is recommended that the same study be repeated to other World Cultural Heritage destinations in Indonesia.

The future research, studies on the tourists' satisfaction with their visit to experience Bali's traditional water management system (*subak*) and to observe the cultural landscape of Bali Province should be conducted. Understanding how tourists interpret this place's authenticity could assist Operations Management of Jatiluwih Tourist Attraction in the marketing and managing of this cultural heritage site (Hasana, et al., 2021)

### ACKNOWLEDGMENT

Thank you to the Chancellor of Dhyana Pura University, in particular the head of the Dhyana Pura University Research and Community Service Institute, who has supported this research to produce this scientific work. The research has been prepared and implemented in a cooperation and coordinated manner between the three researchers by distributing the nature of the work on two affiliations. The first researcher was interested in designing the integrative relationships between the research variable and the required hypotheses and providing the appropriate resources to complete the theoretical side. Meanwhile, the second to the third researcher was interested in designing the questionnaire and interpreting the Interpretative Structural Modeling (ISM) results, and providing appropriate analysis and clarification on the research findings.

### CONFLICTS OF INTEREST

The ideas and results of the research do not create a conflict of interest because the research is not related to health issues or other interests related to race, ethnicity, religion, and practical politics.

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