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## Penta-Helix and Quintuple-Helix in the Management of Tourism Villages in Yogyakarta City

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### **Abstract**

Each country is currently focusing on developing tourism, considering its impact on economic growth and people's welfare. Yogyakarta is one of the regions with diverse tourist destinations. The majority of tourist destinations in Yogyakarta city promote arts and culture as tourism icons, including tourism village destinations. However, tourism villages in the city have not fully received tourist attention. Therefore, solutions are required to be found to optimize tourism management and significantly increase the number of tourist visits. This paper aimed to describe the interaction between the government, the tourism industry, higher education institution, media, society, and environment in the tourism village management in Yogyakarta city. The discussion results describe that tourism village management requires synergistic interaction from some elements covering the government, tourism industry, higher education institution, media, society, and environment. The interaction can at least be a solution in improving the quality of tourism village management. Triple-Helix focuses on interactions among higher education institution, industry, and government on innovation. Quadruple-Helix adds the fourth helix, namely culture and media-based public. Quintuple-Helix is a collaboration of elements contained in the Quadruple-Helix with the addition of the natural environment of society. Penta-Helix adds the media element. With the presence of the government, tourism industry, higher education institution, media, society, and environment that interact with each other, the management of tourism villages in Yogyakarta city becomes more optimal and attract more tourists to visit.

### **Keywords**

Tourism Management, Tourism Village, Quintuple-Helix, Penta-Helix, pentahelix

### **Cover Page Footnote**

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# Penta-Helix and Quintuple-Helix in the Management of Tourism Villages in Yogyakarta City

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## Abstract

Each country is currently focusing on developing tourism, considering its impact on economic growth and people's welfare. Yogyakarta is one of the regions with diverse tourist destinations. The majority of tourist destinations in Yogyakarta city promote arts and culture as tourism icons, including tourism village destinations. However, tourism villages in the city have not fully received tourist attention. Therefore, solutions are required to be found to optimize tourism management and significantly increase the number of tourist visits. This paper aimed to describe the interaction between the government, the tourism industry, higher education institution, media, society, and environment in the tourism village management in Yogyakarta city. The discussion results describe that tourism village management requires synergistic interaction from some elements covering the government, tourism industry, higher education institution, media, society, and environment. The interaction can at least be a solution in improving the quality of tourism village management. Triple-Helix focuses on interactions among higher education institution, industry, and government on innovation. Quadruple-Helix adds the fourth helix, namely culture and media-based public. Quintuple-Helix is a collaboration of elements contained in the Quadruple-Helix with the addition of the natural environment of society. Penta-Helix adds the media element. With the presence of the government, tourism industry, higher education institution, media, society, and environment that interact with each other, the management of tourism villages in Yogyakarta city becomes more optimal and attract more tourists to visit.<sup>5</sup>

**JEL classification:** L32, Z33

**Keywords:** Tourism Management, Tourism Village, Quintuple-Helix, Penta-Helix

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## I. Introduction

The tourism sector increasingly shows positive development, attracting tourists to visit tourism objects or destinations. Therefore, each country, including Indonesia, more intensively develops tourism because it has an impact on economic development and improves people's welfare. For foreign tourist data, the Central Bureau of Statistics stated that the number of tourists increased from 11.52 million in 2016 to 14.04 million in 2017. (<https://www.bps.go.id/pressrelease/2018/02/01/1468/html>, accessed January 23, 2019). Similarly, the number of domestic tourists also experienced an increase in 2015-2017, which was 255 million people in 2015, 264 million people in 2016, and 271 million people in 2017. (<https://ekbis.sindonews.com/read/1348763/34/-1540355935>, accessed March 3, 2019). The data indicated that tourists were increasingly interested in visiting tourist destinations in Indonesia.

Special Region of Yogyakarta is currently one of the most often-visited tourist destinations in Indonesia, especially for domestic tourists. The number of tourists reached 13,025,218 in 2013, 16,861,247 in 2014, 19,266,233 in 2015, 21,445,343 in 2016, and 25,950,793 in 2017 (Book of Tourism Statistics of Yogyakarta, 2017). However, the number of tourist visits to Yogyakarta City decreased. The slow development of tourist destinations and the rely only on existing tourist destinations have indeed decreased the number of tourists in the last three years.

### The Increase in the Number of Tourists in Several Tourist Destinations in Yogyakarta City in 2015-2017

<b>Tourist Destinations</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Kraton</i>	601,593	587,041	546,490
<i>Taman Sari</i>	399,970	514,332	533,545
<i>Gembira Loka</i>	1,824,810	1,657,431	1,509,358
<i>Taman Pintar</i>	948,163	1,037,711	1,005,293

**Source: Book of Tourism Statistics of Yogyakarta (2017)**

Some famous tourist destinations generally experienced a decline in the number of tourists. The Regional Representative Council (*DPD*) chairman of Association of Indonesian Tours and Travel Agencies (*Asita*) of Yogyakarta, Sudiyanto said that the government of Yogyakarta city should develop new tourist attractions by optimizing existing potentials, namely cultural heritage buildings, cultural activities, and tourism villages. However, not all villages have tourist attractions that can attract tourists (<http://www.konfrontasi.com/content/ragam>, accessed September 5, 2017). The tourism villages in Yogyakarta city are the Annual Tourism Village, *Dipowinatan*, *Purbayan*, *Prenggan*, *Taman Sari*, *Kauman*, *Kadipaten*, *Pandean*, *Becak Maju*, *Rejowinangun*, *Pakualaman*, *Cokrodingratan*, *Warungboto*, *Niti Gedong Kiwo*, *Sayidan*, *Sosromenduran*, *Dewobronto* (<https://pariwisata.jogjakota.go.id/detail/index/55>, accessed September 11, 2018). The existence of these tourism villages is not yet well known by tourists. Dwi Wahyu Budiantoro, a member of the Regional People's Representative Assembly (*DPRD*) of Yogyakarta City, said that Yogyakarta city has 17

tourism villages. Unfortunately, not all tourism villages are actively promoted. Some remain still, not maintained. The enthusiasm of the tourism villages is often only seasonal (<https://radarjogja.co/2019/02/26>, accessed April 17, 2019).

The development of tourism villages is strengthened through the Regulation of Yogyakarta's Major 115 of 2016 to optimize and improve the people's welfare. However, the number of tourist visits has not shown a significant increase. Even in the 2017 Tourism Book of Yogyakarta, only *Dipowinatan* is presented in the Statistics Book, including information on the number of tourist visits.

The development of tourist villages, at this time, cannot be given over the government. Interaction with other stakeholders, such as the private sector and the community, is needed. The interaction of the three elements is explained in good governance. In this regard, many governance studies were widely reviewed, including Ziegler (2002), Sjamsuddin (2005), Utomo (2008), Thoha (2008), Evan M. Berman (2009), Sumarto (2009), Sedarmayanti (2009), Effendy (2010), Bevir (2011), Kartika et al. (2012), Putra (2012), Sedarmayanti (2012), Hakim (2013), Dwiyanto (2018).

However, along with changing times, the interaction of the three elements (the government, private sector, and society) is not enough to support the development of tourism. The role of higher education institutions is significant in supporting tourism development. Theories linking higher education institutions include Etzkowitz and Leydesdorff (2000), Leydesdorff and Meyer (2006), Etzkowitz (2008), Arnkil *et al.* (2010), Leydesdorff (2012), Ortiz *et al.* (2016), Beugre (2017). Triple-helix consists of higher education institution, industry, and government elements integrating into reciprocal relationships to improve other performance. Higher education institutions need to prepare outputs that can meet the workforce criteria in the future (Etzkowitz, 2008). Hall & Williams (2008) in Metsaots (2016) revealed that with changes in the tourism industry, it is important to see innovation as an integral part of the whole tourism system. Merchan *et al.* in (Ortiz *et al.*, 2016) as quoted from Etzkowitz and Leydesdorff (2000) conveyed that higher education institutions have the potential to produce knowledge, industries provide economic resources and market potential to absorb innovation, and the government sets standards and policies innovation incentives.

Interactions among the roles of government, industry, and higher education institution are significant to develop innovation-based tourism. However, interaction is not only on the triple-helix. Quadruple-helix emphasizes that the media and cultural-based society has an important role in innovation. Quadruple-helix reviewed by Carayannis and Campbell (2009), Arnkil *et al.* (2010), Miller *et al.* (2016), Cavallini *et al.* (2016), Woo Park (2014) in Cavallini *et al.* (2016), and Markkula (2014) in Cavallini *et al.* (2016) explained that this fourth helix must be added to understand innovation in the current era which is also related to democracy. Democracy can change the conditions of innovation. Meanwhile, the triple-helix is not sensitive enough for matters relating to democracy.

The environment is a helix element that is added to the quintuple-helix. Quintuple-helix has been reviewed by many previous studies, some of which are Carayannis and Campbell (2010), Carayannis *et al.* (2012), Provenzano (2016), Ortiz *et al.* (2016), Beugre (2017). The quintuple-helix innovation model from Carayannis and Campbell is

a framework to provide knowledge, innovation, and competitive advantage sustainability. Quintuple-helix implants triple-helix and quadruple-helix, by adding the fifth element, namely the natural environment. The natural and economic environment must be seen as a driver of competitiveness and sustainable prosperity.

Media is one of the elements in the penta-helix in addition to the government, private sector, higher education institution, and society. According to Soemaryani (2016), the media can help in promoting tourism potential. Muhyi *et al.* (2017) explained that penta-helix is the addition of the triple-helix strategy by involving the community and non-profit organization elements to realize innovation. He added that media are the stakeholder playing an important role in informing businesses, including developing business, and in promoting businesses. Media are also significant in promoting regional tourism.

Thus, tourism management needs to be strengthened through interactions between the government, tourism industries, higher education institutions, the community, media and the environment. Synergistic interactions among the six helices deserve to be developed so that tourism villages can be more optimally managed. Based on the background that has been described, the statement of problem of this study is how the interactions among the government, tourism industries, the community, higher education institutions, media, and the environment are in tourism management and also how the model of tourism management is in tourism villages in Yogyakarta city in the penta-helix and quintuple-helix. This paper aimed to describe and analyze the interactions among the government, tourism industries, the community, higher education institution, media, and environment in tourism management and explain the tourism management model of tourism villages in Yogyakarta City in the penta-helix and quintuple-helix.

The writing of this paper consists of *Introduction, Previous Studies, Methodology, Results and Discussion, and Conclusions and Suggestions (scope of future studies)*.

## **II. Previous Studies**

A study on tourism was previously conducted by Momeni, Ali and Seyed (2019) whose main point was to prioritize the institutional form renewal to provide conditions for the formation of productive innovations. Katarzyna Borkowska and Michael Osborne 2018 found that the limited internet access and the lack of basic digital literacy were experienced by most city residents who were socio-economically disadvantaged, making it difficult for them to get benefits offered by smart solutions. Meanwhile, the study of Imas Soemaryani (2016) discusses the penta-helix model to increase tourist visits to Bandung through HR development. The involved parties are the regional government, businessmen, academics, media, and society. Provenzano, Arnone and Seminara (2016) explained the importance of connecting innovation processes with rural areas in the quintuple-helix based on sustainable development principles. Differently, this paper focuses on tourism management of tourism villages in Yogyakarta city through synergistic interactions from the government, higher education institutions, tourism industry, society, media, and environment. In this case, the researchers want to describe and analyze the role of the six helices and their interactions in the tourism village management.

### III. Methodology

This paper was prepared using a qualitative-descriptive method with library research design. Library research is an investigation that aims to collect data and information in library rooms, such as from books, magazines, documents, historical notes, and so on (Pasolong, 2013). This paper contains literature on the concept of penta-helix and quintuple-helix as well as data related to the management of tourism villages in Yogyakarta city.

### IV. Results and Discussion

Tourism is now an important part of a country's management along with the changing needs of modern society, considering tourism a primary need. Yogyakarta city is a tourist destination with the iconic and attractive Malioboro. Many tourist destinations are not yet widely known by tourists, one of which is tourism villages. Tourism villages are actually captivating to be visited for their arts and cultures.

Concerning the helix element of tourism village management, the government of Yogyakarta city fully supports the development of the management. The government efforts to introduce tourism villages are quite intensive, one of which is by holding the Annual Tourism Village Festival. On July 21-22, 2018, the Tourism Office held the Tourism Village Festival event at XT Square, enlivened by various arts, stands of tourism villages, and 16 *bregodo* (<https://pariwisata.jogjakota.go.id/detail/index/191>, accessed May 16, 2019).

The role of the government alone is not enough to improve tourism management in tourism villages. To develop the tourism industry, the government is developing creative communities from the tourism industry. One way to promote the various tourism activities or potentials is by socializing through social media in the form of photos, videos, or other formats, such as *Kipo*, the unique culinary from Kotagede (<http://www.inditourist.com/read/html>, accessed May 16, 2019). The efforts of the government of Yogyakarta city in interacting with the tourism industry are indeed required, given that the role of the government can motivate the growth of the tourism industry.

ISI Yogyakarta is a higher education institution in Yogyakarta city also realizes that cooperation with the government through the signing of joint agreements specifically related to improving arts and culture is advantageous. ISI released the Regional Art Development and Coaching Program (*P3WILSEN*) in Yogyakarta city. This cooperation is hoped to encourage an increase in the arts and culture sectors in Yogyakarta city (<https://kerjasama.jogjakota.go.id/?mod=berita&sub=berita&do=show&id=169>, accessed September 11, 2018). The majority of attractions and activities in tourism villages are more dominantly related to culture. Therefore, the joint agreements between the government and ISI are significant to develop cultural attractions that can captivate tourist attention to visit the villages.

The synergistic interaction among the government, higher education institutions, and industry in the management of tourism villages are consistent with the triple-helix proposed by Etzkowitz (2008). Page (2009) in Metsaots (2016) and Beugre (2017) also

emphasized that government involvement aims to help resolve conflict issues, balance tourism promotion, and safeguard public issues. Hall & Willians (2008) in Metsaots (2016) revealed that with changes in the tourism industry, it is important to see innovation as an integral part of the whole tourism system.

In addition to the government, industry, and higher education institution elements, the community also plays an important role in developing tourism village management. *Dipowinatan's* people is organizing its tourism village to be better known by tourists. *Dipowinatan* has Javanese cultural and traditional values maintained until now. By developing a culture and tradition-based tourism village, tourists will be invited to see a variety of traditions and culture in the community directly (<https://visitingjogja.com/7003>, accessed May 17, 2019). The addition of the community to the quadruple-helix makes the approach more dynamic and responsive because the community in the tourism villages are directly involved in tourism management.

To introduce the tourism villages, the role of media is highly important. Some information about tourism villages were covered by the Yogya media. *Tribun* reported the news of the Head of the Tourism Development and Promotion Division of Yogyakarta's Tourism Office, Golkari Made Yulianto, stating that all this time, the tourism village managers still had other duties, no any utilities (such as tourism village markers and attraction information) are provided. His party hope that tourism 'cakes' cannot only be enjoyed by certain circles. Many tourists have not known that all potentials are present in tourism villages. (<http://jogja.tribunnews.com/2019/02/09>, accessed May 16, 2019). Media which is one of the penta-helix elements is needed to support the dissemination of information about tourism villages with various art and cultural attractions.

The sustainability of tourism villages emphasizing art and cultural tourism should be noticed. The role of the environment at least influences the sustainability of tourism villages. Community trends in the current millennial era have changed. While previous people were proud to have wealth, now people are more proud to travel and then post it to social media. Such changes in the community must be captured by tourism actors, especially in *Sosromenduran* tourism village which has been long established and often visited by stayed tourists. This village must be continuously developed both in terms of culture, arts, and crafts so that tourists feel at home and increase in number(<http://jogja.tribunnews.com/2018/09/09>, accessed May 16, 2019). One of the roles of the environment in the quintuple-helix, in this case, is the character of tourists who enjoy travelling or exploring. The results of the tours are then uploaded on social media. Tourism villages can be an alternative for tourists to get a distinctive image closely associated with arts and culture. Regarding tourism, Sunaryo (2013) said that each tourism destination has different levels of carrying capacity in supporting the burden of existing tourism activities.

With the synergistic interaction of the elements of penta-helix and quintuple-helix including the government of Yogyakarta city, higher education institutions, tourism industry, society, media, and the surrounding environment of the tourism villages, these efforts can improve the quality of village tourism management. The interactions among the six helices at least influences the improvement of people's lives, the economy and tourism industry, culture preservation, and sustainable development.



## **V. Conclusions and Recommendations**

Nowadays, the tourism sector is increasingly showing significant development. Therefore, Indonesia also focuses on developing tourism to increase economic growth and people's welfare. The majority of tourist destinations in Yogyakarta city promote arts and culture as tourism icons. However, the management of tourism villages is indeed not yet optimal at this time. Tourism villages need to be managed in collaboration with the government, industry, community, media, higher education institutions, and the environment. With this collaboration, the management of the tourism villages in Yogyakarta city becomes more optimal and able to attract tourists to visit. Description and analysis of the collaboration among the government, tourism industry, higher education institutions, media, society, and environment on the management of the tourism villages will be deeper if the researchers directly explore data at the research location.

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