

# PentaHelix Synergy on Tourism Development in Batu, East Java

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Tourism in Batu, a city in East Java, has developed rapidly and requires involvement from various stakeholders. This research related to the actual implementation of tourism development, using exploratory studies of the 'Penta Helix' concept, defined below, which was carried out to compile a complete picture of the idea. A qualitative approach deepened archival understanding and developed observations and interviews with field actors. PentaHelix involves synergies, in this case to develop the tourism sector. There is a 'PentaHelix' or collaboration of five elements; namely government, academia, private, media and environmental institutions. However, several weaknesses were found in this synergy, namely the role of academics and environmental institutions. They are called weak points due to a lack of synergy in maximising their roles. The realization of the desired tourism development is a model of synergising tourism development with 'inter-helix' cooperation. Academics and environmental institutions need to increase their performance, to synergise tourism development with a PentaHelix perspective in Batu. Moreover, they can build symbiosis between tourism and a PentaHelix perspective in general, to develop tourism itself through the synergy of various elements in the helix. This research provides a new course, to preserve cultural heritage through a PentaHelix collaboration to develop tourism.

**Key words:** *Tourism Development, PentaHelix, Batu.*

## Introduction

Cooperation between the government and stakeholders is required for innovation in various fields. Especially in the creative economy and tourism, this interaction or collaboration can bring strategies to develop various fields. Therefore the relationship between the government, the private sector and civil society in governance must be sustainable. The Indonesian Government has established 14 national priority programs, in which the top three national priorities are Inter-Revenue Groups, Tourism Development, and Urban Development. Synergy is needed, for cooperation in building and developing tourism in Indonesia, one being a helical perspective or approach. PentaHelix synergy is the collaboration of five elements. It becomes the key to developing Indonesian tourism, especially to realize targets for 2016 to 2019. The amount of investment tends to increase (LAKIP BPMPT 2017). The increase of investment in Batu creates new problems if not addressed immediately. The BPMPT increase in investment can be seen in the following table:

**Table 1:** Achievement of Year Investment Realization 2017 BPMPT

No	Strategic Target	Performance Indicator	Target	Realisation	Achievement
1	2	3	4	5	6
2.	Increasing Realization of Investment Value	The amount of realized investment	300 M	1.755 M	585

**Source:** LAKIP BPMPT 2017

From Table 1 the amount of investment in Batu has increased significantly, especially in tourism. Indicators suggest that the performance on these targets is very successful with an average achievement of 585% (Very Successful). The indicator measures the level of success. The amount of investment realization in 2016 was, in Indonesian Rupiah (IDR) 1,915 billion. Compared to 2016, the 2017 achievement decreased by IDR 160 M. The investment realization in 2015 was IDR. 487 M. In 2014 it was IDR 401 M. Investment value grew 78% in 2017. In 2016 it was 610%; in 2015, 18.4%; and in 2014, 17.8%. Thus, in Batu, the investment performance, based on the results of the target performance indicators, is very successful with an average achievement of 585% (Very Successful).

Batu is a unique area that was just turned into an independent city on October 17 2002. Previously Batu was a municipality under the Malang Regency. The Minister of Home Affairs legalized the change in accordance with Law No. 11 dated, June 30, 2001, concerning the improvement of Batu Administrative City status. Over time Batu is seen administratively as a new autonomous region, one which develops a "brand image" as Kota Wisata (Tourism City) with an area of only 199,087 km<sup>2</sup>. Development in Batu in the past five years has been very rapid. It is visible in widespread infrastructure developments such as housing, offices, hotels, businesses, tourist attractions, etc. Hence, the strength of the investment climate in

Batu is in tourism. Batu has become an iconic tourist city and needs facilities, among the most important of which are for the hospitality industry, restaurants, etc (PHRI East Java 2014), because its number of tourist attractions has increased significantly. As presented in Table 2 below, the investment value in Batu in 2012-2016 tended to experience a significant increase:

**Tabel 2:** Investment in Batu 2012-2015

Period	Investment Value	Fluctuative Percentage
2012	676.281.000.000	
2013	791.507.000.000	15,63%
2014	915.072.000.000	17,04%
2015	1.402.072.000.000	15,61%
2016	1.885.072.000.000	21,44%

**Source:** BPMPT Batu 2016

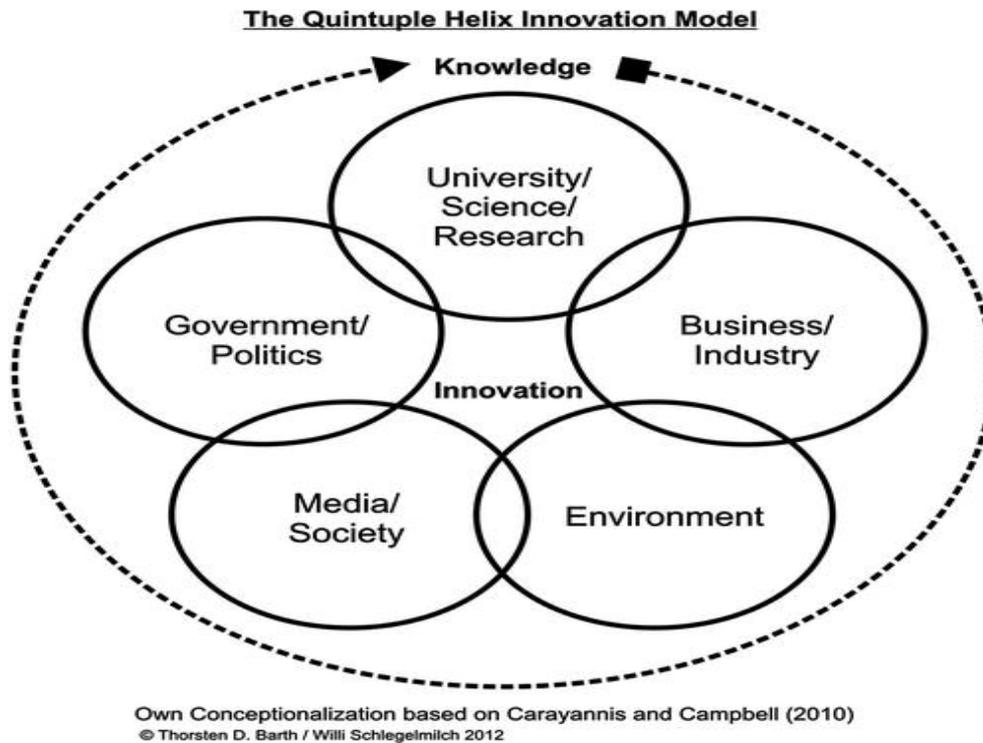
The data above shows that the total investment in Batu increased significantly. In 2016, nearly 2 trillion rupiahs was invested. Each year the private sector will increase investment in various fields, especially tourism.

## **Theoretical Review**

### ***Helixes as concepts***

Helix is a concept of synergy or cooperation, first known as Triple Helix. The development of helix next became quadruple helix, an approach with four helixes added with community. It will be very helpful to synergize the previous three elements. The fifth helix or quintuple helix was added by environmental institutions (Carayanis, 2010). It completes the five elements synergized to impacts development in the area, especially in tourism. In the research of Drevnkar. N et al. (2015), the synergy in a helix was used to develop research on historical tours in Croatia, explaining the concept well internationally. Analyzing the views of war veterans in Croatia, since the concept of the helix accords with the concept of tourism and memories of war, researchers found a concept to manage the development of a new tourism concept in Croatia. The paradigm of triple helix innovation in Drevnkar's research (2015) was based on the integration of commercialization, empirical knowledge, and the interests of the public and society, to make a new tourist concept there. The following is a picture of the Quintuple helix model, called the PentaHelix, adopted from Carayannis and Campbell (2010):

**Figure 1.** Quintuple Helix/PentaHelix Model (Carayannis and Campbell 2010)



The Quintuple Helix model or PentaHelix is an important force, and a guide to a new innovation. Its five approaches capture and specialize the amount of social interaction and academic exchange of a nation-state. This promotes and visualizes a system of knowledge cooperation and innovation, for more sustainable development. Quintuple Helix specializes in community and academic interaction, in this case the university, through ideas and scientific field exchanges (Carayannis 2012). In the current context, political analysis and decision makers turn to the concept of innovation. The government as a mediator for other helix elements is expected to carry out its tasks well, and in a complex manner, so that it can synergize and work together to realize more comprehensive tourism developments, especially in Batu. The problem in this research was to find out the role of the five helix elements, especially the helix of academics and the environment which is less optimal in supporting the development of tourism in Batu.

### **Tourism Development**

Tourism is defined according to Batu City Regulation No. 1 of 2013 concerning Tourism Organizing. It stated that the tourism sector is a variety of tourism activities, and is supported by various facilities and services provided by the community, businessmen, the Government and the Regional Government. 'Tourism' is tourism-related activities that are multidimensional and multidisciplinary in nature, which appear as a manifestation of the

needs of each person and country and the interaction between tourists and the local community, fellow tourists, the Government, Regional Governments and entrepreneurs. The role of academics and environment as a synergy of the two helices needs some improvement. Although already implemented in cooperation, it is considered less optimal, in accordance with the following interview results:

*And the form of cooperation through the MOU or cooperation between two parties that have been stated and only cooperation with state universities, usually the local government or city government asks a team of experts in accordance with their fields through the LPM in universities then the LPM appoints a competent expert team ( LPM UM Malang interview 31 Oct 2016).*

For cooperation, it has been implemented. But the results obtained are less than optimal. As consequence, suggestions and studies are less useful in providing input for tourism development. These academics are a source of advice or material for policy formulation, provided they can maximise their role, to manifest products in the form of potential identifications, mapping, resource threshold values, development ideas, planning and management concepts, and implementation methods.

Tourism linked to the last helix, environment, will play an equally important role as a party relating directly to stakeholders. If tourism developments merely build, tourism will certainly have a bad impact for the future, given the following interview results:

*“I think this environmental study is important in providing business licenses ... because it provides input in the preparation of technical designs from business or activity plans and gives input in the preparation of environmental management plans and monitoring. Moreover it provides information to community for the impact of planned business or activity ... it is so that local people do not feel aggrieved (interview 12 Oct 2016 with environmentalists).*

From the above explanation, there is a need for good environmental studies that support tourism development, through mutual support among stakeholders. To interrelate various parties, let alone talk about tourism in Batu, regional tourism should be organized according to the following principles, under Batu City Regulation No. 1 of 2013 concerning the Organizing of Tourism:

- a. upholding religious norms and cultural values as embodiments of the concept of life in the balance of the relationship between men and God, the relationship between humans and humans, and the relationship between humans and the environment;
- b. upholding human rights, cultural diversity and local wisdom;
- c. providing benefits for the welfare of the people, justice, equality and proportionality;

- d. maintaining natural and environmental sustainability;
- e. empowering local communities;
- f. to guarantee integration among sectors, regions, the capitals and regions which constitute a systemic unit within the framework of regional autonomy, as well as among stakeholders;
- g. to comply with the ethic codes of the tourism world, and international agreements in tourism; and
- h. strengthening the integrity of the Unitary Republic of Indonesia (NKRI).

Tourism development will run well if there is mutual support among its elements, and if local revenue is expected to increase along with good cooperation among elements in the helix.

### **Research Method**

This research was conducted with a qualitative approach. Qualitative research is intended to produce discoveries that cannot be achieved (obtained) by using static procedures or by other methods of quantitative measurement. In this study, the steps taken on the problem-setting were reviewed and carried out comprehensively, holistically, deeply and in accordance with other conditions (naturally). For the purpose of obtaining information about investment in Batu City, it was chosen from a data source, from a key informant, purposively. To support this research the following is presented:

1. Head of BPMPT Kota Batu
2. Head of Bappeda Kota Batu
3. Head of Batu Tourism Office
4. LPPM of Muhammadiyah University of Malang
5. Batu Community Leaders
6. Malang Bioconversion Expedition Team Member
7. Member of PHRI
8. Media Representatives located in Batu

This research related to the synergy between PentaHelix in terms of tourism development in Batu City. The main concern is the result of the research, and the synergy of PentaHelix that supports the development of tourism, as related to the problem and research objectives achieved. The technical analysis used in this study was data analysis modelling according to Miles & Huberman, Saldana (2014). The flow of the activities was data collection, data condensation, data presentation, verification and description, using data triangulation techniques and triangulation data analysis as a cycle process.

## Results

This research discussed how the development of tourism has become a hot topic, since the developing tourism sector influences other sectors greatly. Therefore the demand for tourism is increasing in line with the level of human needs that increase year-by-year. Tourism development certainly cannot easily grow without any effort. Thus, the availability of facilities and infrastructure is necessary for the development of this sector, to become one of the mainstay sectors. However, obstacles to environmental conditions are an integral part of the tourism industry. For developers and organizers of tourism activities, the quality of the environment must get attention. There are other problems contained in the synergy of the PentaHelix, and it requires the Government to be the main actor in the synergy of this element. Government should develop the tourism sector. It is important and needs special attention from various parties, as stated in the following interview:

*“Yes, indeed, for large investors, we provide convenience in licensing and providing assistances so that many investors will come ... intensify promotions, then utilize artists from Batu City and inviting artists from the capital city for promotion ... well, such as During Ied Fitr the government hold an open house and invite famous artists ... the goal is to make a promotion, so it can bring in investors ”(interview of the Head of Bappeda, 5 October 2016)*

If this sector does not get special attention, there is a livelihood chain of effect. Starting, for example, from pedicab drivers, tour guides, tour operators, the country's finances will be affected. Those are like a circle pattern of interrelation. On the other hand, if this sector gets special attention and eventually progresses well, more parties will benefit (data processed from the 2016 interview).

In the last decade many developing countries have paid special attention to the tourism industry. This is clear in many tourism development programs in those countries. One country seems to want to surpass the other, to attract more tourists to stay longer and spend more money. Interesting programs must be considered, especially regarding the benefits that will be obtained, and whether the damage is greater should be assessed. For this reason, services in the field of investment with the PentaHelix perspective are needed to develop investment in tourism, where participation and cooperation from five parties, namely the government, the private sector, academia, environmental institutions and community are required, to support the investment business sector. Every business potential owned by the private sector is facilitated by the government, through easier terms and conditions, in accordance with the rules and as assessed by academics and through environmental analysis. This creates a better mechanism in investment, especially in tourism. This way the business climate of investment in tourism, especially in Batu City, can be better known and trusted by the community, as presented in the following interview:



*We decided to invest in Batu is indeed already with full calculations ... this city will be a tourist city that continues to grow ... tourism development is increasingly advanced ... many new tourist attractions will increasingly add to the lively city of this tourist city (interview with the Jatim Park developer October 3, 2016)*

The private sector, obviously, must take a valuable lesson and use it for business development to achieve business goals. These goals are profit, people, planet, and sustainability, as well as growing and developing from micro, small, medium to large scale, as stated in the Batu City RPJMD 2012- 2017. Increasing land prices due to speculators can reduce investors' interest in investing in Batu City.

A continuous synergy is needed in PentaHelix to support tourism development. It is time for tourism in Batu to develop into various fields, including the development of artificial tourist attractions (playgrounds, educational tours) and natural tours (rafting, paragliding). Both fields have special attractions for tourists. However, if it is seen from the trends, especially foreign tourists, the main attraction is the natural tour. If this artificial tourism sector is managed by the government, Batu will be able to compete with other more developed regions. It will commit to developing tourism like other regions in Indonesia such as Yogyakarta, Papua, Bali and so on. However, if this sector goes unnoticed, and focuses only on the development of natural tours, over time tourists will get bored because basically natural tours are static and 'once in a lifetime'.

PentaHelix is a term used to mention the participation and cooperation of the five development elements, named above. As a concept, the main idea of PentaHelix is the power synergy between those elements. Academics with resources, knowledge and technology focus on producing various findings and applicable innovations. Entrepreneurs' capitalization provides economic benefits for society, while the government guarantees and maintains the stability of their relations with conducive regulations. The media provides news about the development of tourism from various sectors, while environmental institutions provide locations and studies on how to develop tourism without damaging the ecosystem. As presented in the following interview:

*Licensing issues indeed do not see who he is ... as long the conditions are fulfilled, we grant it ... for instance one want to build a hotel, one must have a disturbance permit (HO) and also a building permit (IMB) (interview with the Head of Batu City BPMPT 2 July 2016).*

The investment problem in tourism does require mutual synergy and good cooperation between stakeholders, in this case called the helix; the synergy between the five helix or

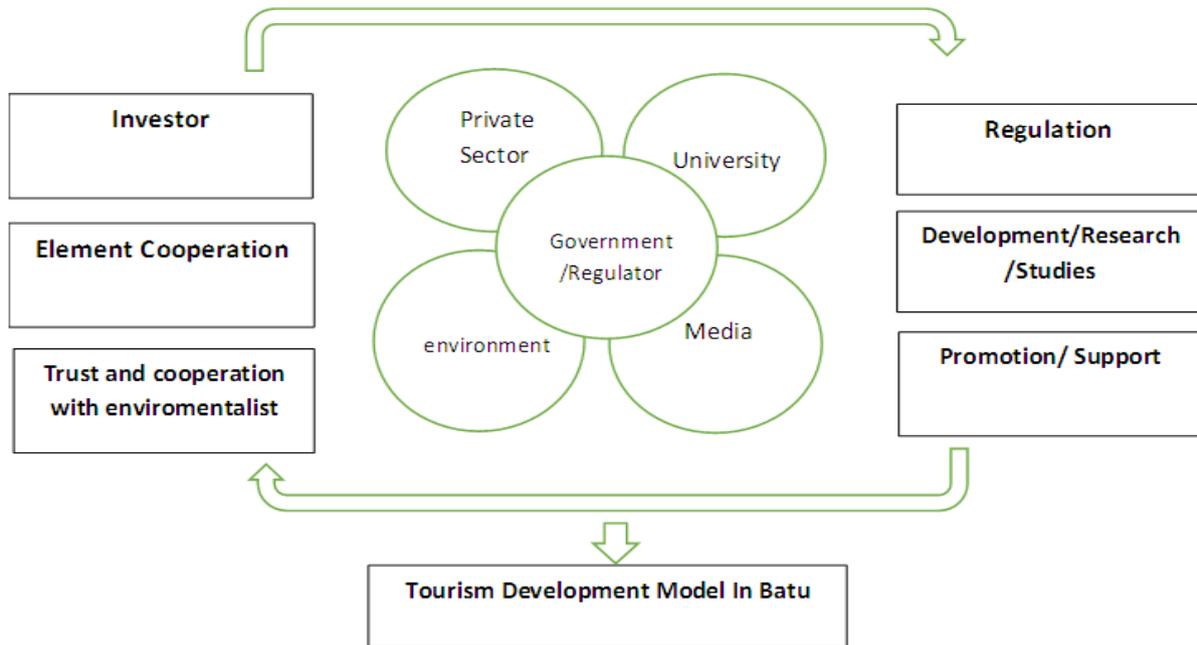
pentahelix. The concept of tourism development is translated into a national program based on the domestic economy, in the district and city level with a high level of independence.

Regulation is necessary to promote tourism in Batu City. It continues to prioritize aspects of protecting the religious values, culture and original characteristics of the city. The definition of tourism according to Batu City Regulation No. 1 of 2013, concerning Tourism Organizing, stated that the tourism sector is a variety of tourism activities and is also supported by various facilities and services provided by the community, businessmen, the Government and the Regional Government. Meanwhile 'tourism' is all activities related to tourism with a multidimensional and multidisciplinary nature that appears as a manifestation of the needs of each person and country, and the interaction between tourists and the local community, fellow tourists, the Government, Regional Governments and entrepreneurs. Furthermore, that Regulation opines that tourism is a travel activity carried out by a person or group of people, by visiting certain places for recreational purposes, personal development, or learning the uniqueness of tourist attractions visited in a certain time.

Batu City is a declared tourist city that has a vision and mission leading to tourism progress and development. Its existence as such has long been known by the general public because of its natural resources and culture. Many people visit this city for sightseeing and enjoying the beautiful scenery. These visits continue to increase and progress more rapidly. Therefore, to regulate these developments, all aspects related to tourism must be arranged in such a way as to realize legal certainty for tourists, tourism players and the people of Batu City.

Besides the above conditions, there is still a dilemma (paradox) in developing tourism particularly in Batu. The most fundamental aspect of tourism development is "High Investment, Not Quick Yield". The development of the tourism sector requires a large investment with a long term return. This condition is really unattractive for most tourism stakeholders who still have an "Instant and Shortcut" culture where they prefer those who can immediately make a profit. In this context, tourism business integration is needed, which is a synergy of tourism actors horizontally and vertically, and benefits each party. Therefore we need a form of synergy or cooperation that can stimulate the emergence of developments in the tourism sector by involving all stakeholders, including the environment, academia, the entrepreneurs, the media, and the important role of the local government. Figure 2 below presents the synergy of PentaHelixin tourism development in Batu.

**Figure 2.** PentaHelixSinergy in Tourism Development



## Discussion

PentaHelix's synergy is the key to develop tourism particularly in Batu. The PentaHelix model shows a collaboration in knowledge and technology and promotion, science, and implementation of regulations in the form of regulations and legislation, which bring new and important changes. The five concepts in PentaHelix must go hand in hand as a single unit that supports each other, interconnected, element. The strategic role of government as the first helix and policy regulator must massively accommodate the applicable concepts in tourism management in the scope of regionalism to the outside area. Government must be able to mediate, and together with regional legislative councils, formulate policies for various elements of tourism stakeholders to synergize in mapping and developing community needs in tourism. The second helix is media, a force and one strategic component that will be the most effective voice for publishing. Through journalists, the media is very important in developing various tourism potentials, particularly that of Batu. It does not matter how beautiful a tourist attraction is, how great tourism events are, how adequate infrastructure is, how friendly, secure, comfortable and clean a tourist attraction is. Without an extension to inform others about the features and uniqueness of a tourist attraction, there will not be any visitors, and even quietness. With the development of the digital world information is a necessity. The media is very effective in pushing tourism campaigns, especially since Batu City has been declared a tourist city. Information on tourism by journalists and media will inform readers of interesting tourism objects in various places. The third helix is an academic, or a university that acts as community educators; a buffer to build the robustness of high quality, reliable, professional, intelligent and efficient tourism human resources, as well as global insight. Academics and universities uphold the values of local wisdom, by providing

education or good input on the development of tourism through relevant and effective ways, although sometimes it still cannot be maximized (data is processed from various sources: 2016). Tourism resources must be integrated with religious insight, local wisdom, nationality, culture, language and psychology. Human resources are the key to services, considering that tourism is a service product. Another important aspect for future developments is the establishment of many educational institutions that focus on tourism. It will accelerate the process of better human resources, people who are competent in their fields.

The fourth Helix is the private sector. As one of the PentaHelix supporters it plays an important role in tourism development, and is one of the important stakeholders that guarantees the implementation of facilities supporting tourism. The fifth helix or the last helix is environmental institutions, where these environmental factors are related to tourism development. The local community as partners in environmental management plays a close role in the progress and development of tourism in Batu City particularly. Tourism developments must be a planned as a whole, so that benefit can be maximised for the community; economic, social and cultural. The role of the government in developing tourism in its outline is to provide infrastructure (not only in physical form), expand various forms of facilities, coordinate activities between government officials and the private sector, as well as universities and the media. The development of synergy or cooperation between stakeholders continues to increase, and in the development of tourism, the PentaHelix Model can apply.

However, the development of Batu as a tourist city will continue to be carried out, with various thoughts about improvement, as stated by Etzkowitz (2013). It requires synergy and cooperation between the government, the private sector and also universities or academics, to support and work together and focus on development issues, especially in tourism, in which they support one another. Furthermore, it is said that in the literature that the relationship between the helix and the impact on economic growth does not look real. Nevertheless it was stated that economic growth was obtained from the increase in synergy and complementarity between different productive units (Afonso, Monteiro & Thompson (2010)).

## **Findings**

Cooperation between helices is very important in supporting regional tourism. The pattern of cooperation that has existed so far requires the handling of various parties that support the implementation of good cooperation. The pattern of cooperation, in both the quadruple and quintuple helix, is used in educational and industrial organizations. In this research the collaboration synergy is used to develop tourism in the region. In this case the area is Batu. The existence of Batu as a tourism city has long been known by the general public because of its natural resources and culture. Many people visit this city for sightseeing and enjoying the beautiful scenery. These visits continue to increase and progress more rapidly. Therefore, to



regulate these developments, all aspects related to tourism must be arranged, such as to realize legal certainty for tourists, tourism players and the people of Batu, through synergy or cooperation in the concept of PentaHelix.

## **Conclusions**

Tourism in Batu requires further development. It can be done by synergizing the five elements in PentaHelix. They consist of government, and universities or academics who play a role in academic and critical studies, to determine which business is not beneficial. Next, the private sector as capital owners develop tourism, followed by the media, through good and targeted publications in accordance with Batu City's goals, and synergize with one another. Finally environmental institutions act as a resource provider and can also be creative analysts that provide studies and non-destructive input, for the natural balance to be developed in tourist areas. The realization of the desired tourism development is the creation of a tourism development model, synergized with the concept of 'inter-helix' cooperation, to create recommendations of tourism development models with a PentaHelix perspective in Batu. In particular, they can discuss how the concept of academics and environmental helices work together to support tourism development.

The best solution is building a symbiosis between tourism and the development of tourism itself, through the synergy of various elements in the helix. It means that while developing the tourism sector, togetherness is also built through synergy or cooperation. If it can be realized, it does not matter how advanced our country is, good cooperation between various sectors in the helix will be maintained without neglecting tourism development.



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