

## **DEVELOPMENT OF HUMAN RESOURCES-BASED TOURISM NETWORKING MODEL**

### **Objek Wisata**

Department of Management, Faculty of Economics and Business, Tadulako University

---

**Abstract:** This study is a combination of quantitative and qualitative methods. Data were analyzed using Mactor software. The results of the study show that as the most contributing actors, universities collaborating with other stakeholders, namely the village government, highly support the goals, contribute ideas and creativity, and recommend development programs in increasing the capacity of Human Resources and developing the tourism area of Central Sulawesi by training and education for sustainable development. The network of cooperation between actors in the pentahelix model in Central Sulawesi is less optimal. This means that coordination and synergy are needed. This research on the institutional model of human resource-based tourism network development has not described the model for developing tourism potential as a whole. The results of this study are expected to contribute ideas in considering decisions related to tourism development in Central Sulawesi with a focus on human resource development.

---

**Keywords:** tourism, pentahelix, mactor, human resources.

---

### **1. INTRODUCTION**

The tourism sector has the potential to contribute to the economic growth of a country. The process of planning and developing the tourism sector worldwide is not often a priority for government work (Setiawan, 2016). The development of tourism in an area can bring many benefits to the surrounding community economically, socially, and culturally. However, if the development is not prepared and managed properly, it can cause various problems for the community (Badarab et al., 2017).

Human Resources (HR) needed for effective service of tourism activities is less considered in the tourism planning and development process. This results in serious problems in the tourism industry and hinders the participation of local communities in economic activities developed from tourism development. Human resources play an important role in tourism development. Human resources in tourism cover tourists or workers. The role of human resources as workers can be in the form of human resources in government institutions, human resources who act as entrepreneurs who play a role in determining satisfaction and quality of workers, experts and professionals who play a role in observing, controlling, and improving the quality of tourism, community, and even investors.

Besides the government, the community can take part in tourism development as mandated in Government Regulation Number 50 of 2011 concerning the Master Plan for National Tourism Development 2010-2025 that tourism development is carried out by increasing the capacity of community resources and increasing awareness and the role of the community (Hidayah et al., 2019). This regulation serves as the basis for implementing tourism activities in order to increase competitiveness based on the nation's cultural values and local wisdom of the community in a systematic, planned, integrated, sustainable, and responsible manner while still protecting religious and cultural values, environmental sustainability, and national interest.

The implementation of regional autonomy makes each region flexible to develop and manage its region according to its potential including managing the tourism sector. The regional autonomy makes each region tend to prioritize increasing Regional Original Revenue so that environmental sustainability and the involvement of local communities are neglected (Yuningsih et al., 2019). Therefore, local wisdom is needed to address development holistically to realize equity in economic development, ecology, and social justice. Here, the support of all parties is needed which means that tourism development is not only the responsibility of the government.

Human resources are one of the factors that play an important role in the development of the tourism sector. The human resources owned by each stakeholder play a role as a key factor in realizing the success of tourism performance (Yuningsih et al., 2019). Human resource development in the tourism sector faces global challenges that require solutions by breaking through the boundaries of countries, regions, and continents. This research needs to be done to provide input to the stakeholders involved, especially the local government that tourism needs to be considered due to its contribution to the economy of the local community. This study helps tourism object managers to evaluate and improve management in managing tourism objects to attract visitors. Therefore, it is necessary to increase the competence of human resources through synergy and collaborative steps in tourism development in Central Sulawesi.

## **2. LITERATURE REVIEW**

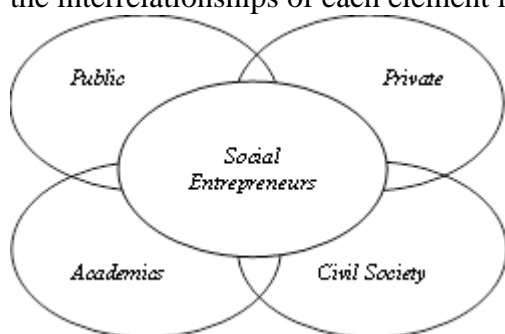
The government program is important to build good habits in improving quality human resources in various sectors, including tourism. President Joko Widodo in his speech stated some factors strengthen human resources such as being healthy, intelligent, skilled, and prosperous. The role of the tourism industry cannot be underestimated as it can provide recommendations to improve capabilities and expertise in tourism human resources (Mistriani et al., 2020). Tourism has become one of the new styles of the industry that can support rapid economic growth in terms of employment, income, the standard of living, and activating other production sectors in the host country. Therefore, tourism human resources must understand the importance of competition in the world of work after graduating. This era does not only require diplomas but also the readiness of human resources equipped with competencies. To be able to compete in business and to get a superior position in the current economic competition, human resources are required to be able to obtain legally accredited skills and expertise.

Tourism human resource is the potential of humans to realize their role as adaptive and transformative social beings who can manage themselves and all the potential contained in nature to achieve the welfare of life in a balanced and sustainable order in the tourism sector (Sunaryo, 2013). Atmoko & Santoso (2019) define human resources as everything that has the potential to be developed to support tourism, either directly or indirectly. Idrus (2018) states that the contribution of the tourism sector to a country is high including in Indonesia along with the increasing number of visits by foreign or domestic tourists which has a positive effect on the economy. This should be followed by an increase in tourist services, especially in terms of human resources. Human resources are the most determining factor in global competition, especially in the digital era because human resources play an important role in competing in creating innovation and building creativity. If the quality of human resources in tourism in Indonesia is low, it can set a bad precedent for tourists because Indonesian tourism cannot survive only with its natural beauty. Therefore, the quality of tourism human resources needs to be increased through capacity building capacity and quality of education.

Employment has brought economic and social development (Kidron, 2013). In improving the economy in the tourism sector, setting a special strategy to provide positive implications for the economic growth of the community, especially in Central Sulawesi is important. The development of the tourism sector as an effort to form sustainable development requires a strategy that can synergize various strengths of stakeholders. One of the tourism development strategies launched by the government is the application of the pentahelix model (Muhyi & Chan, 2017; Maturbongs, 2020). The Pentahelix model was first launched by the Minister of Tourism, and subsequently formulated into the Ministry of Tourism Regulation Number 14 of 2016

concerning Guidelines for Sustainable Tourism Destinations. The Pentahelix model supports the tourism sector and the tourism system by increasing the role of business, government, community, academia, and media to create value for tourism benefits for both the community and the environment.

Pentahelix is a socio-economic development model that encourages a knowledge-based economy to pursue innovation and entrepreneurship through beneficial collaborations and partnerships between academics, government, industry, NGOs, and entrepreneurs to have a connected network systematically and structurally (Tonković et al., 2015). The Penta Helix element was originally a Triple Helix consisting of Academics, Business Sector, and Government, which was then added with one element, Civil Society (or Communities) to become a Quadruple Helix, to accommodate the community's perspective, in this case, the "people's perspective" namely 'media and culture-based society' which has also become an integral part of innovation in the 21st Century (Park, 2014). This Penta Helix then added one more element, namely Media, because in the context of developing the creative economy in Indonesia, the media (both conventional and social media) play a significant role (Colapinto & Porlezza, 2012; Halibas et al., 2017), although still an independent or not directly affected by other elements in carrying out the function. The scheme for the collaboration network and the interrelationships of each element in Pentahelix can be seen below:



**Figure 1. Pentahelix Model** (Halibas et al., 2017)

Based on the figure above, the role of academics is as a drafter by standardizing business processes and certifying products and skills of human resources. The business acts as an enabler that provides ICT infrastructure, by supporting changes in human resources, business processes, and products in the digital era. The community acts as an accelerator as a means to facilitate the adoption of business processes into the digital era and as a liaison between stakeholders. The government acts as a regulator that regulates and coordinates all stakeholders. The media plays an expander role to support publications in promotion and information (Halibas et al., 2017).

Some studies related to tourism development have used the pentahelix model such as (Yuningsih et al., 2019) which found that the cooperation between actors in the pentahelix model was not optimal considering that there was still a tendency for actors to work independently and there was still distrust between actors. Maturbongs & Lekatompessy (2020) emphasized that collaboration built with linkages between actors in the pentahelix model starts from the planning stage of sustainable tourism development. The role of each actor is to always try to do their best for tourism development that has an impact on society and nature (Khusniyah, 2020; Rosardi, 2020; Vani et al., 2020).

Development in the tourism aspect has the ultimate goal, namely to increase the community's income and add economic value in line with the welfare of the community (Putra, 2021). Tourism development through increasing human resources can maximize forms of collaboration ranging from accommodation, attractions, and supporting facilities displayed in a structure of community life and integrate with existing traditional governance, especially the community. This is because the local community is more aware of the demographics of the tourism area and more aware of the sociological perspective (Yusnikusumah & Sulistyawati, 2016). Participation is a voluntary attitude that arises from the community who can achieve a successful level of tourism development programs. Support from the community is a supporting factor for developing tourism. Besides, participation can be interpreted as a form of mental and emotional involvement

of a person who is in a group that encourages him/her to contribute his/her abilities so that the group's goals can be achieved and are responsible for tourism development programs.

Proper management of tourism development provides a good impact on the development of tourism (Indonesiani, 2015). Therefore, community involvement is important in anticipating the obstacles so that tourism development can continue to run according to the needs and abilities of the regions. The development of tourist areas must be thoroughly planned to get optimal benefits for the community. Thus, the role of stakeholders in the development of tourism potential is important.

The tourism development model by adopting a stakeholder network scheme in Penta Helix can promote a culture of innovation and creative synergy between stakeholders in developing the tourism sector. In social innovation, actors come together from different sectors of society to share a common goal using specialized skills and resources to address societal challenges. Tourism development based on local wisdom cannot be separated from the collaboration between actors involved in tourism. Therefore, this study focuses on stakeholder collaboration in the pentahelix network in tourism development concerning human resources to produce a relevant collaboration model to increase tourism potential in Central Sulawesi.

### 3. METHOD

This research used a combination method focusing on leading tourist destinations in each District/City in Central Sulawesi Province. This study used both primary and secondary data. The determination of the information used a purposive sampling technique. Data were analyzed using Mactor software (Matrix of Alliances and Conflicts Tactics, Objectives and Recommendations). Mactor is a software developed by Michel Godet in 1991 to analyze in depth the power relations between actors, the competitiveness of actors, and the attitudes of actors towards goals. Mactor works based on the influence between actors (inter-actor influence) distinguished as a direct influence, indirect influence, and potential influence. Direct influence occurs if actor A affects actor B, while indirect influence occurs if actor A affects actor B and B affects actor C, and with the transitivity process, actor C is indirectly affected by A. Potential influence occurs if influence should be possessed by actor A against B. Mactor works based on a structural analysis approach (Fauzi, 2019). Rees & MacDonell (2017) proposed the stages of Mactor's analysis as follows:

1. Define system actors;
2. Define a set of goals;
3. Describe the power relations of actors as measured on a scale of 0 (no influence) to 4 (strong influence); and
4. Describe the attitude (level of resistance) of the actor towards the goal as measured by a scale of (+) supporting, (0) neutral and (-) opposing and the importance of the goal for the actor as measured on a scale of 0 (not important) to 4 (very important).

The input data were obtained from the interpretation of the results and arranged in the form of a matrix which is then processed by Mactor software to produce various analytical results. The results of the analysis are presented in the form of graphs and tables that describe the potential/competitiveness of actors in tourism development in Central Sulawesi focusing on human resources, a description of the pattern of alliances, and possible conflicts between these actors, as well as a description of the actor's support to realize the predetermined goal.


### 4. RESULT AND DISCUSSION

Central Sulawesi Province shows its high passion for the tourism sector. The concept of tourism based on local wisdom runs well. However, it needs better packaging and development to attract more tourists. Central Sulawesi Province consists of 12 (twelve) districts and 1 (one) city. Each district/city certainly has its own leading tourist attraction. The detailed leading tourist attraction of each district/city in Central Sulawesi can be seen in the following table. Community recreation area with various sports facilities, culinary places and photo spots.



**Table 1. Leading tourist destinations in each district/city in Central Sulawesi in 2021**

No.	Destination	Brief description	Documentation
-----	-------------	-------------------	---------------

12 | Interdisciplinary Journal of Educational Practice | <https://sadipub.com/Journals/index.php/ijep>

1.	<b>Palu City</b> "Hutan Kota Palu" Jl. Soekarno-Hatta, Kecamatan Mantikulore	Community recreation area with varied sports facilities, culinary and photo spots	
2.	<b>Parigi Moutong District</b> "Pantai Kayubura" Pelawa Baru Village, Parigi Tengah Sub-district	This bay is a part of the world's coral triangle.	
3.	<b>Poso District</b> "Air Terjun Saluopa" Wera Village, Pamona Puselemba Sub-district	A multi-step waterfall (12 steps)	
4.	<b>Morowali Sub-district</b> "Pulau Sombori" Tanda Oleo Village, Bungku Pesisir Sub-district	A beach with clear and bluish green water and surrounded by green islands and karst cliffs	
5.	<b>Tojo Una-Una Sub-district</b> "Api Alam (Tanjung Api)" Labuan Village, Ampana Tete Sub-district	The availability of natural gas becomes a special attraction	
6.	<b>Banggai Sub-district</b> "Pulo Dua" Kampangar village, Balantak Sub-district	Hills with green grass and trails that have been fenced and colored	
7.	<b>Banggai Laut District</b> "Wisata Tolobundu" Lantibung village, Bangkurung sub-district	Marine tourism with clear sea water and beautiful coral reefs	
8.	<b>Banggai Kepulauan District</b> "Danau Paisu Pok" Luk Panenteng Village	Lake with clear blue water and plants at the bottom of the lake	
9.	<b>Tolitoli District</b> "Pantai Sabang" Sabang village, Galang sub-district	The beauty of white sand and clear sea water become one of the best diving and snorkeling spots in Tolitoli	
9.	<b>Buol District</b> "Pulau Busak" Busak 1 village, Karamat sub-district	This island has a beautiful coral reef	
10.	<b>Donggala District</b> "Tanjung Karang" Labuan Bajo Village, Banawa Sub-district	The beauty of the beach with adequate facilities and amenities	



11.	<b>Sigi District</b> "Kawasan Danau Lindu" Sadaunta Village, Kulawi Sub-district	The panoramic beauty of mountain valleys with nice lake views	
12.	<b>Morowali Utara Sub-district</b> "Teluk Tomori" Petasia sub-district	Beautiful nature reserve	

Source: Pesona Sulawesi Tengah Edisi II/2021 (Sriadijaya, 2021)

Table 1 show that each district/city has a leading tourism destination. The need for travel will continue to increase along with the increase in the world's population along with the increasingly busy workload. The process of developing the tourism sector is not easy. It faces many obstacles. The first is the frequent conflicts and social unrest as well as less conducive political situation and conditions resulting in less security for tourists. The second is the low quality of service from tourism providers, unfair competition among tourism operators, and a lack of understanding of the importance of consumer protection which is highly emphasized in Europe, America, and Australia. The third is the low public awareness of the importance of tourism development. Many development plans fail due to a lack of support from the community. The fourth is the lack of capital and low human resources, especially skilled and professional personnel in managing the tourism sector. The fifth is top-down tourism management.

Human resource problems are challenging in tourism development because human resources determine everything in tourism (Ratnasari, 2017). Tourism highly appreciates professionalism both in investment management and in the fields of hospitality, transportation, communication, and information. Besides, although tourism has opened up market opportunities for other sectors, due to the low human resources, these opportunities cannot be utilized optimally. Low human resources can result in decreased quality of handicrafts, inappropriate marketing techniques, inaccurate reading trends of the market, and others. Due to low human resources and lack of domestic capital, tourism may be controlled by foreign parties who have better human resources and are more prepared in terms of capital. Thus, special efforts are needed to avoid this.

Management in Central Sulawesi refers to the Pentahelix model which involves 5 stakeholders. The stakeholders are Academics, Business Sector, Government, Community, and Media. The results of the identification and classification of stakeholders and their role in the development of Human Resources (HR) in tourism management in Central Sulawesi are presented in the following table.

**Table 2. Stakeholder in tourism management in Central Sulawesi**

No.	Stakeholder	Classification	Roles/Goals
1.	BAPPEDA (Development Planning Board)	Government	Planning regional development, especially in the tourism sector, as the representation of the vision and mission of the regional head's development
2.	Tourism Office	Government	Designing and implementing human resource development programs in the tourism sector
3.	Business actors	Business	Investing in the development of infrastructure that can support tourism management
4.	Universities	Academics	Objectively contributing thoughts and ideas of planning for the development of human resources in the management of regional tourism
5.	Village government	Government	Determining policies for increasing human resources in tourism by involving village communities in tourism management training

6.	Youth association	Community	Creating and providing input on creative ideas and getting involved in the management of local tourism destinations
7.	Public figure	Community	Being a source of ideas and strengths in village development through certain considerations in increasing tourism human resources
8.	Mass media	Media	Being one of the tools to change behavior in the community through the promotion of the importance of sustainable tourism

Source: Processed data, 2021.

Based on the results of the analysis, the complexity of the actors involved in developing human resources in Central Sulawesi involving stakeholders is grouped into primary stakeholders and secondary stakeholders. Primary stakeholders consist of BAPPEDA, the Tourism Office, and the Village Government. They play a major role in the process of developing tourism potential in Central Sulawesi. While universities, business actors, public figures, youth associations, and mass media are secondary stakeholders who act as supporters and implementers of decisions made by primary stakeholders.

The results of the initial matrix from Mactor's analysis in the form of the Direct Influence (MDI) Matrix as presented in Table 3 show the level of influence of actors on other actors. The stakeholders in the first column are assessed for their level of influence on the actors in the first row. This matrix has a direct effect which can be explained through 4 points, namely 0 = no effect, 1= in accordance with the SOP, 2 = carrying out projects, 3= missions to be achieved, and 4= actions that have been done.

**Table 3. Direct Influence Between Actor (MDI)**

MDI	BAPPEDA	Tourism Office	Business actors	Universities	Village government	Youth association	Public figure	Mass media
BAPPEDA	0	3	2	2	1	1	1	1
Tourism Office	3	0	2	2	3	3	1	4
Business actors	2	2	0	2	1	2	2	3
Universities	2	2	2	0	2	2	1	2
Village government	1	3	1	2	0	1	1	1
Youth association	1	3	2	2	1	0	1	2
Public figure	1	1	2	1	1	1	0	1
Mass media	1	4	3	2	1	2	1	0

Source: Mactor, 2021

Based on the Matrix of Direct Influences (MDI) above, each stakeholder has various levels of influence. The Tourism Office, both at the provincial and district/city levels, has the highest level of existence in developing human resources in the tourism sector in Central Sulawesi. Table 4 (2MAO) describes the position of the actor towards the goal to be achieved.

**Table 4. Actors' Attitudes toward Goals (2MAO)**

2MAO	Local government	HR development	Infrastructure development	Ideas sharing	Tourism development	HR development	Ideas sharing	Promotion
BAPPEDA	3	1	4	4	2	3	2	2
Tourism Office	3	1	4	2	2	3	2	2

<b>Business actors</b>	1	1	2	1	1	4	3	3
<b>Universities</b>	2	2	0	4	3	3	3	0
<b>Village government</b>	4	1	1	1	1	2	3	1
<b>Youth association</b>	1	1	1	1	1	4	3	4
<b>Public figure</b>	1	1	1	4	1	4	3	4
<b>Mass media</b>	1	4	0	0	0	4	1	4

Source: Mactor, 2021

The first result of Mactor analysis is a map of the influence and dependence of actors. The influence of actors shows the ability of actors to influence other actors, design, plan, and implementation of the development of a project. The sources of the power of the actor's influence are determined by the ownership of material resources, social position, and knowledge of the actors towards the future of a system (Tronvoll, 2017). Based on their strengths, actors are positioned on the map of actor influence and dependence and are divided into dominant actors (high influence), dominated actors (high dependence), isolated actors (low influence and dependence), and relay actors (high influence and dependence) (Elmsalmi & Hachicha, 2014). The map of the influence and dependence of tourism area stakeholders in Central Sulawesi Province shows that among stakeholders that have influence and depend on the development of tourism human resources are the Tourism Office, Mass Media, Business Actors, Youth Association, Universities, and BAPPEDA. Six (6) actors with high influence and dependence are called relay actors as their influencing power is high but their dependence is also high. Relay actors are actors who are expected to play a role during the execution process of various decisions in the field, especially in the development of human resources. Relay actors determine the success of the operationalization of tourism human resource development in Central Sulawesi with their respective capacities and roles. The Tourism Office is the dominant actor, i.e. one that is highly influenced and dependent on other actors. To support its role, it is necessary to strengthen other actors through the Tourism Office through training on tourism management and development.

The second result of Mactor analysis is a map of the competitiveness of actors. Actor competitiveness shows the intensity of the strength of an actor's influence on other actors which is determined by direct influence, direct dependence, indirect influence, and indirect dependence. The competitiveness map also indicates the willingness of actors to use their strengths to control other actors (Elmsalmi & Hachicha, 2014). The results show that the Tourism Office, youth association, and mass media have the highest competitiveness. This mapping is precise because the Tourism Office is the most authorized and responsible institution for human resource development programs in the regions, especially in the tourism sector in Central Sulawesi. Youth association has the authority to create and provide input on creative ideas and involve themselves in the management of local tourism destinations. Mass media is a strategy to change behavior in the community through promoting the importance of sustainable tourism, while other actors are in a moderate position.

The next analysis concerns the development goal map. One of the factors that determine the support or rejection of stakeholders in development is the goal of the development in accordance with the actor's mission (Fuentes, 2013). To find out the map of the actor's support for development goals, a group of goals to be achieved is mapped with the level of importance. The more important a goal describes the stronger the actor's support for that goal. The goal map of HR-based tourism development in Central Sulawesi shows that all actors support all of the predetermined goals. It can be seen that there is no blue color on the goal bar graph.



The highest intensity of support is on the developing Human Resources in the tourism sector in Central Sulawesi.

The results of the next analysis focus on the actor convergence map. The convergence map describes the similarity of actors' attitudes towards goals. Actors who have the same attitude will converge while those who have different attitudes will diverge. Convergence analysis aims to determine the possible points of the potential alliance of actors. Convergence maps can be used to determine which actors can work together to avoid possible conflicts. Potential alliances can be built between community leaders, youth associations, business actors, the Tourism Office, and BAPPEDA because they are close to each other in the same quadrant. Then, BAPPEDA with a public figure and BAPPEDA with the Tourism Office are groups of actors who can form a very strong alliance for the successful development of human resources in the tourism sector in Central Sulawesi. BAPPEDA and public figures can be the key to success from upstream to downstream in human resource development programs. The final analysis concerns the relationship of each actor to the goal. The relationship of the actor to the goal is important because it indicates which goal the actor is focused on so that he is willing to use his power to achieve that goal. The intensity of the actor's attitude toward the goal of developing human resources in the tourism sector shows that universities in collaboration with other stakeholders, namely the village government, are the most supportive/focused/strong actors in support of the purpose of contributing ideas and creativity, recommendations for development programs in improving the capacity of human resources and the development of tourism areas.

Based on the results of the study, academics have to be involved in policy implementation. Many programs are designed to implement political policies that support community development, but now they focus on developing their human resources through training and education for sustainable development. Academics have the expertise and play important role in research institutions. Academics will automatically be involved in policy implementation. Business actors as entrepreneurs should be utilized for human resource development in the tourism sector in Central Sulawesi to achieve the goal of 'people to tourism sustainability. It is time for entrepreneurs to take advantage of the concepts produced by academics through seminars and discussions.

In general, the government bureaucracy is seen as the most responsible administrative agent in implementing policies. This view applies to the implementation of policies in both developed and developing countries. The bureaucracy has great authority to fully control the "area" of policy implementation in its area of operation because they have a mandate from the legislature. The community that plays a role in the implementation is groups or communities because the implementation of various discretions is carried out by the bureaucracy. Many groups in the community try to influence various implementing regulations, especially those related to the development of human resources that support sustainable tourism. Mass media is an important link between the state and society. The combination of passive reporters and active analysts has its own place in the public policy process to provide space for the government and society to understand social problems as well as to solve these social problems, especially community behavior in managing tourism.

## **5. CONCLUSION**

Human resource-based tourism development in Central Sulawesi uses the pentahelix model consisting of academics, business actors, government, communities, and mass media. Based on the results of the study, universities have a very strategic role, namely objectively contributing thoughts and ideas for planning human resource development in regional tourism management, training, and education for sustainable development. The network of cooperation between actors in the pentahelix model in Central Sulawesi is less optimal considering that there is still a tendency for actors to run independently. Besides, there is distrust between actors so coordination and synergy are needed.

This study is part of the study on the institutional model of human resources-based tourism development, so it does not describe the model for developing tourism potential as a whole. To optimize the pentahelix model in the development of HR-based tourism in Central Sulawesi, it is important to revise the regulations or regional tourism regulations concerning "collaboration between stakeholders". Besides, it is important to

strengthen institutional capacity to help promote tourism. Future studies can have different focuses or make comparisons with the same focus.

## REFERENCES

- Atmoko, T. P. H., & Santoso, I. B. (2019). Pengembangan Kapasitas SDM Pariwisata di Kawasan Airport City Kabupaten Kulon Progo. *Prosiding SENDU\_U 2019*, 21(1), 978–979.
- Badarab, F., Trihayuningtyas, E., & Suryadana, M. L. (2017). Strategi Pengembangan Destinasi Pariwisata di Kepulauan Togean Provinsi Sulawesi Tengah. *THE Journal: Tourism and Hospitality Essentials Journal*, 7(2), 97–112.
- Colapinto, C., & Porlezza, C. (2012). Innovation in Creative Industries: From the Quadruple Helix Model to the Systems Theory. *Journal of the Knowledge Economy*, 3(4), 343–353. <https://doi.org/10.1007/s13132011-0051-x>
- Elmsalmi, M., & Hachicha, W. (2014). Risk Mitigation Strategies According To The Supply Actors' Objectives Through MACTOR Method. *International Conference on Advanced Logistics and Transport*, 362–367. <https://doi.org/10.1109/ICAdLT.2014.6866339>
- Fauzi, A. (2019). *Teknik analisis keberlanjutan (1st ed.)*. Jakarta : Gramedia Pustaka Utama.
- Fuentes, C. D. (2013). Governance For The Tourism Sector And Its Measurement. In *UNWTO Statistics and TSA. Issue Paper Series*.
- Halibas, A. S., Sibayan, R. O., & Maata, R. L. (2017). The Penta Helix Model of Innovation in Oman: An HEI Perspective. *Interdisciplinary Journal of Information, Knowledge & Management*, 2, 159–174. <http://dx.doi.org/10.28945/3735>
- Hidayah, N. A., Hutagalung, S. S., Hermawan, D., Ilmu, F., Lampung, U., Februari, D., April, D., & Juni, D. (2019). Analisis peran stakeholder dalam pengembangan wisata talang air peninggalan kolonial Belanda di Kelurahan Pajaresuk Kabupaten Pringsewu. *Jurnal Administrasi Publik*, 7(1), 55–71.
- Idrus, S. (2018). Perspektif Sumber Daya Manusia Pariwisata Di Era Revolusi Industri 4.0. *Prosiding Sintesa*, 2 November 2018, 587–594.
- Indonesiani, D. Y. R. (2015). Analisis Pengembangan Objek Wisata Tanjung Karang di Kecamatan Banawa Kabupaten Donggala. *E-Journal Katalogis*, 3(7), 103–112.
- Khusniyah, K. (2020). Implementasi Model Pentahelix Sebagai Landasan Pengembangan Potensi Pariwisata Di Kabupaten Kediri (Studi Literatur). *Prosiding Seminar Nasional Kahuripan*, 1–5.
- Kidron, C. A. (2013). Being There Together: Dark Tourism and the Emotive Experience of Co- Presence in the Holocaust Past Related papers. *Annals of Tourism Research*, 41, 175–194.
- Maturbongs, E. E. (2020). Kolaborasi Model Pentahelix Dalam Pengembangan Pariwisata Berbasis Kearifan Lokal Di Kabupaten Merauke. *Transparansi : Jurnal Ilmiah Ilmu Administrasi*, 3(1), 55–63. <https://doi.org/10.31334/transparansi.v3i1.866>

- Maturbongs, E. E., & Lekatompessy, R. L. (2020). Kolaborasi Model Pentahelix Dalam Pengembangan Pariwisata Berbasis Kearifan Lokal Di Kabupaten Merauke. *Jurnal Ilmiah Ilmu Administrasi*, 3(1), 55–63. <https://doi.org/10.31334/transparansi.v3i1.866>
- Mistriani, N., Maria, A. D., & Damayanti, V. (2020). Pentingnya Pelaku Industri Pariwisata Dibekali Uji Kompetensi Lewat Daring untuk Meningkatkan Sumber Daya Manusia Pariwisata di Indonesia. *Edutourism Journal Of Tourism Research*, 2(1), 32. <https://doi.org/10.46964/jtr.v2i1.325>
- Muhyi, H. A., & Chan, A. (2017). The Penta Helix Collaboration Model in Developing Centers of Flagship Industry in Bandung City. *Review of Integrative Business and Economics Research*, 6(1), 412–417.
- Park, H. W. (2014). Transition from the Triple Helix to N-Tuple Helices? An interview with Elias G. Carayannis and David F. J. Campbell. *Scientometrics*, 99(1), 203–207. <https://doi.org/10.1007/s11192-0131124-3>
- Putra, I. K. (2021). Akselerasi Pertumbuhan Bisnis di Sektor Pariwisata di Era Pandemi Covid 19 Melalui Pendekatan Pentahelix (Studi Pada Desa Wisata Sumberbiru Wonomerto, Kecamatan Wonosalam, Kabupaten Jombang). *Jurnal Sketsa Bisnis*, 8(1), 34–46.
- Ratnasari, S. L. (2017). Aktualisasi Peran Pemimpin Nasional Dalam Pengembangan Sumber Daya Manusia Bidang Pariwisata. *Jurnal Dimensi*, 6(3), 464–474. <https://doi.org/10.33373/dms.v6i3.1082>
- Rees, G. H., & MacDonell, S. (2017). Data Gathering For Actor Analyses: A Research Note On The Collection And Aggregation Of Individual Respondent Data For MACTOR. *Future Studies Research Journal: Trends and Strategies*, 9(1), 115–137.
- Rosardi, R. G. (2020). Model Pentahelix Dalam Pengembangan Pariwisata Berkelanjutan Di Kabupaten Batang, Jawa Tengah. *RISTEK: Jurnal Riset, Inovasi Dan Teknologi Kabupaten Batang*, 4(2), 7–17.
- Setiawan, R. I. (2016). Pengembangan sumber daya manusia di bidang pariwisata: Perspektif potensi wisata daerah berkembang. *Jurnal Penelitian Manajemen Terapan (PENATARAN)*, 1(1), 23–35.
- Sriadijaya, I. N. (2021). Protokol Kesehatan Berbasis CHSE untuk Sektor Pariwisata dan Ekonomi Kreatif. In *Dinas Pariwisata Provinsi Sulawesi Tengah (Vol. 2)*.
- Sunaryo, B. (2013). *Kebijakan Pembangunan Destinasi Pariwisata*. Yogyakarta: Gava Media.
- Tonković, A. M., Veckie, E., & Veckie, V. W. (2015). Applications Of Penta Helix Model In Economic Development. *Economy of Eastern Croatia Yesterday, Today, Tomorrow*, 4, 385–393.
- Tronvoll, B. (2017). The Actor: The Key Determinator in Service Ecosystems. *Systems*, 5(2), 38. <https://doi.org/10.3390/systems5020038>
- Vani, R. V., Priscilia, S. O., & Adiarto, A. (2020). Model Pentahelix Dalam Mengembangkan Potensi Wisata di Kota Pekanbaru. *Publikauma : Jurnal Administrasi Publik Universitas Medan Area*, 8(1), 63–70. <https://doi.org/10.31289/publika.v8i1.3361>
- Yuningsih, T., Darmi, T., & Sulandari, S. (2019). Model Pentahelik Dalam Pengembangan Pariwisata Di Kota Semarang. *Journal of Public Sector Innovations*, 3(2), 84–93. <https://doi.org/10.26740/jpsi.v3n2.p84-93>

Yusnikusumah, T. R., & Sulistyawati, E. (2016). Evaluasi Pengelolaan Ekowisata di Kawasan Ekowisata Tangkahan Taman Nasional Gunung Leuser Sumatera Utara. *Jurnal Perencanaan Wilayah Dan Kota*, 27(3), 173–189. <https://doi.org/10.5614/jrcp.2016.27.3.1>