



## Critical Factors for Increasing Tourism Competitiveness: Analysis of Travel and Tourism Competitiveness Index in Sumedang Regency

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### ABSTRACT

The disruption of the tourism sector needs to be measured to increase tourism competitiveness. This study aims to map tourism competitiveness with the Travel and Tourism Competitiveness Index (TTCI) pillar after the Covid-19 pandemic. Of the 14 pillars of TTCI released by the World Economic Forum, only eight pillars with 56 indicators are used that are relevant to the condition and availability of data at the village level. This research uses a mixed method with a sequential explanatory design approach. The data uses village potential data from the Central Statistics Agency in 2018, 2019, and 2021. The analysis unit consists of 270 villages and seven sub-districts in Sumedang Regency. The results of a composite assessment of all TTCI indicators and pillars show a striking difference in the environmental sustainability pillar, which has increased very highly compared to before the Covid-19 pandemic. The results of the TTCI scoring have mapped aspects of potential, advantages, and weaknesses in terms of eight pillars of tourism competitiveness at the village, subdistrict, and district levels. This study presents actual data on the potential of villages to increase tourism competitiveness using TTCI parameters. It can be a reference for stakeholders to improve areas that are priorities for tourism development, especially facing the aftermath of the Covid-19 pandemic. The declining pillar of human resources during the pandemic requires the attention of stakeholders, especially in developing tourism priority areas.

**Keywords:** tourism competitiveness, Covid-19 pandemic, Travel and Tourism Competitiveness Index

### INTRODUCTION

The tourism industry is one of the economic sectors that has a vital role in the economic growth of a region. In recent decades, tourism has become one of the major sectors that contribute significantly to people's income through job creation and the development of other tourism-related sectors.

The tourism industry can create jobs directly or indirectly for locals. Hotels, restaurants, tourist attractions, transportation companies, and tourism-related micro and small enterprises are sources of employment for local communities. The success of tourism has a multiplier effect in the form of local community welfare, increased income from the tourism sector, and improved infrastructure (Istiqomah et al., 2020).

The multiplier effect of the development of the business sector is a catalyst for a country's economic sector (Fafurida et al., 2022; Silvestrova et al., 2022). Informal business in tourism is also an important sector that contributes to tourism development with the interconnectedness of various regional economic sectors (Tichaawa, 2021). The

number of industries and business actors arising from tourism development is expected to create a sustainable economy at the national and regional levels.

Sustainable development in the tourism sector cannot be separated from stakeholders, both government, local communities, and private parties to optimize local potential and increase economic activities that have an impact on community welfare (Purnomo et al., 2020; Wirahayu et al., 2022). Tourism has the potential to diversify the economic structure of a region. When the local economy depends on one key sector, such as agriculture or industry, tourism can provide new alternatives for creating income and balancing economic risks. In a study, characteristics and tourism business conditions are the main determinants of the welfare of local communities (Yudhoyono et al., 2021).

In the era of globalization and increasingly fierce competition, a country needs to improve the competitiveness of its tourism sector to remain relevant and attractive to tourists. Increased competitiveness makes tourist visits no longer seasonal, thus causing a more significant multiplier effect on the interconnected tourism industry (Istiqomah et al., 2020; Monteiro et al., 2017).

The Travel and Tourism Competitiveness Index (TTCI) of the World Economic Forum (WEF) is the most popular parameter used to measure tourism competitiveness (Rodríguez-Díaz & Pulido-Fernández, 2019). The TTCI report describes and measures the diversity of factors influencing a country's ability to compete globally in the travel and tourism sector. (World Economic Forum, 2019)

Published every two years, TTCI is a strategic benchmark tool for policymakers and all parties involved to advance the development of the travel and tourism sector and the foundation of this two-sector multistakeholder dialogue. In the TTCI 2019 report, Indonesia is ranked 40th with a score of 4.3 out of a maximum score of 7, up two places compared to 2017. Increasing the competitiveness of national tourism requires support from each local government to develop tourism according to its potential and advantages.

Sumedang Regency is one of the West Java Province regions with beautiful tourism potential. The charm of tourism in Sumedang Regency lies in natural tourism, cultural tourism, artificial tourism, and particular interest tourism, such as hills for paragliding activities, which several times held international events in Batudua, Cisitu District. Sumedang Regency has many tourist attraction locations spread across 26 districts. This considerable tourism potential encourages the Sumedang Regency Government to make Sumedang Regency a world-class tourist destination. In addition, maximizing tourism potential is expected to generate Regional Original Income (PAD) and provide a higher multiplier effect.

Although it has a lot of tourism potential, the tourism competitiveness of each region of Sumedang Regency is not yet known, and the aspects that become its potential, advantages, and weaknesses. Thus, it is necessary to map the tourism competitiveness of each region to prepare priority tourist sites in Sumedang Regency by correcting deficiencies in the competitiveness aspect of the area.

Sumedang Regency is also an area in Indonesia developing tourism with the advantage of a strategic position. There are several national projects, such as the Jatigede Dam, which is a tourist attraction, and the construction of the Cisumdawu toll road, which facilitates accessibility between the Bandung Metropolitan and the Cirebon Metropolitan and Kertajati international airport in Majalengka Regency. Sumedang Regency is also included in the metropolitan development area of the tambourine triangle for new industrial and urban development in the north/northeast region of West Java. Strategic location plays an essential role in developing tourism-related industries. Sumedang Regency has the vision to become a world-class tourism district which, of course, must be supported by good competitiveness to encourage regional development. However, tourism development in Sumedang Regency faces significant challenges with the Covid-19 pandemic.

With the impact of the Covid-19 pandemic, which has reduced the number of tourist visits due to social restrictions, increasing tourism competitiveness is necessary. The Covid-19 pandemic has impacted decreasing tourism demand in Indonesia, with an estimated decrease of nearly 16.65 million tourists from January 2020 to March 2021 (Esquivias et al., 2021). Competitiveness is one of the strategies needed to encourage the tourism industry to grow again after COVID-19, in addition to promotion, content, community, and cooperation. (Tulungen et al., 2021). Therefore, it is essential to map tourism competitiveness referring to the pillars in TPCI.

The disruption of the tourism sector is so broad that measuring the pillars of tourism competitiveness is necessary to know how much has changed in each post after the Covid-19 pandemic. Therefore, this study aims to map tourism competitiveness with the TPCI pillar after the Covid-19 pandemic. This research presents data on the village's potential to improve tourism competitiveness using TPCI parameters.

This study only discusses regional competitiveness, including tourist attractions, in the analysis unit. Thus, this research is limited to mapping competitiveness at the spatial level of villages, sub-districts, and Regional Tourism Destination areas stipulated in the Sumedang Regency Tourism Development Master Plan for 2021-2025. The results of this study are expected to be input in determining priority areas for tourism development in Sumedang Regency.

## LITERATURE REVIEW

An analysis of tourism competitiveness must focus on factors supporting long-term economic prosperity. There is a view that states that competitiveness is understood as an effort to maintain the bargaining position of a destination or tourist area during competition with other markets (Hassan, 2000). In comparison, Dwyer & Kim (2003) are of the view that the competitiveness of tourist destinations or tourist areas is the ability of tourist destinations/regions to meet the needs of tourists so that they are considered to have good performance in various aspects that are deemed essential for tourists.

Given the importance of tourism competitiveness for a destination and country, since 2007, WEF has issued a biennial report on the competitiveness of tourism countries worldwide. The report aims to measure some factors and policies that make the tourism sector in these countries attractive. The report can also be used as a reference for tourism stakeholders in a country to build cooperation to improve the competitiveness of the tourism industry and their country's economy (World Economic Forum, 2019).

Some previous studies have utilized and adopted TPCI result reports. Some researchers use the TPCI results to compare the results of a country with its competitor countries (Kusumawardhani et al., 2019, Vonny Setianda & Roos Kities Andadari, 2015). Some other researchers use the results of TPCI to determine the influence and relationship on tourism performance in a country (Hanafiah et al., 2016; Hanafiah & Zulkifly, 2019).

In TPCI, four main sub-indices are considered the most critical factors for a country or tourist destination to be competitive: the enabling environment, tourism policies and conditions, infrastructure, and natural and cultural resources (World Economic Forum, 2019). Supporting environmental factors comprise five pillars: business conditions, security and safety, cleanliness and health, human resources, technology, and information and communication (ICT) readiness. F tourism policy actors and requirements comprise four pillars: priority for the tourism sector, openness with other countries, price competitiveness, and a sustainable environment. Meanwhile, infrastructure factors include three pillars: air transportation, land, port transportation,

and tourist-supporting infrastructure. Meanwhile, natural and cultural resource factors are assessed from the pillars of natural resources, cultural resources, and business travel.

These factors and pillars are considered determinants of tourism competitiveness for a country to be visited by international tourists. However, some researchers argue that there are the most significant factors in shaping a destination's and country's tourism competitiveness. A study of some tourist destinations in Jakarta argues that human resource factors are the most critical factor compared to other factors influencing tourism competitiveness (Budi, 2015). Meanwhile, Salinas Fernández et al. (2020) argue that the ICT pillar has the most significant correlation to tourism competitiveness compared to other pillars, followed by the human resources pillar. In his study, precisely the pillar of natural resources is the lowest correlation with tourism competitiveness. Argues that for developing countries, the pillars of business conditions and infrastructure affect the productivity of tourist destinations, which leads to increased tourism competitiveness.

Some of TTCI's pillars, such as environmental sustainability, have benefited from the Covid-19 pandemic. Some of the results of previous studies have shown that lockdown as an effort to anticipate the spread of COVID-19 to complement human movement and economic activities has had an impact on improving environmental quality (Bilal et al., 2020; Chakraborty et al., 2021; Ghosh et al., 2020; Khan et al., 2021; Zalakeviciute et al., 2020). Natural and cultural resources maintained during the pandemic are also unique tourist attractions because they can provide a unique and safe natural environment or cultural experience. However, the labour market and human resources are pillars of TTCI that the pandemic has negatively impacted, characterized by rising unemployment, being prone to dismissal, and hindering career opportunities (Dvořák et al., 2020).

## RESEARCH METHODS

This research uses a mixed method with a *sequential explanatory design* approach, which begins with quantitative data collection and analysis, followed by a qualitative approach (Ivankova et al., 2006). This study used A descriptive quantitative approach to map and analyze tourism competitiveness by adopting the World Economic Forum (WEF) method, namely the Travel and Tourism Competitiveness Index (TTCI). Furthermore, a qualitative approach was used with the FGD technique, one of the qualitative data collection techniques designed to obtain participants' information, perspectives, and experiences on a topic, with direction from a facilitator or moderator (Paramita & Kristiana, 2013).

This research was conducted from March to August 2022. This study's data type is secondary data obtained from Village Potential data (Podes) released by BPS. The Podes used were used in 2018 and 2019 to measure the tourism competitiveness index before the Covid-19 pandemic, and Podes data in 2021 for analysis during the Covid-19 pandemic. In addition, data from Sumedang Regency Regional Regulation Number 10 of 2020 concerning the Sumedang Regency Tourism Development Master Plan for 2021-2025 is also used to identify tourist objects in each village area.

The first stage is to identify variables in PODES that can represent the pillars of the WEF TTCI. There are 14 pillars, pillars that can be used for this study related to tourism and the availability of data at the village level into eight pillars as follows:

1. Environmental and Sustainability
2. Health Services
3. Human Resources
4. ICT Readiness
5. Natural and Cultural Resources
6. Safety and Security
7. Tourist Service Infrastructure

## 8. Transport Infrastructure

The second stage is data aggregation and variable normalization by scoring techniques. Variables in village potential data are standardized at the village level and aggregated to the sub-district level and Regional Tourism Destinations. The normalization of these variables is adjusted to the TTCI rating, namely scores 1 (lowest) to 7 (highest). Thus, the values of each variable can be compared between units.

The third stage is to determine the weight of each indicator against each pillar based on the Focus Group Discussion (FGD) agreement. The score weighting for each TTCI pillar is based on the importance of the post and the distribution of scores in each pillar. The more urgent and the data is relatively more evenly distributed without any outliers, and it will be given a higher weight. The fourth stage calculates the TTCI composite score from each village, sub-district, and Regional Tourism Destination area.

**Table 1. Weighted Tourism Competitiveness Index Pillars and Indicators Adjusted to PODES Data**

<b>Pillars/Variables</b>	<b>Indicators</b>	<b>Weight</b>
Environmental Conservation Activities	Tree planting on degraded land	0.15
	Processing and recycling of garbage/waste	0.10
	Existence of Waste Bank	0.08
Activities Impact Environmental degradation	The habit of burning fields/gardens for agricultural business processes	0.03
	The existence of the location of Excavation C	0.05
Pollution Events	Water	0.25
	Soil	0.14
	Air	0.20
<b>Environmental Sustainability (0.11)</b>		<b>1.00</b>
Availability of Health Facilities	Hospital / Puskesmas	0.22
	Clinic	0.15
	Doctor's office	0.10
Disease outbreaks	KLB (Muntaber/diarrhoea and DHF)	0.05
Drinking Water and Sanitation	The source of drinking water for the majority of the population	0.26
	Domestic waste disposal sites	0.16
	Landfills	0.06
<b>Health &amp; Hygiene (0.14)</b>		<b>1.00</b>
The main business field of the population	The main business field of the population (trade, services, food, and drink accommodation)	0.40
Access to secondary and high schools, as well as educational and skills institutions	Access to SMA/ MA/ SMK	0.20
	Access to colleges/colleges	0.15
	Existence of Skill Institutes	0.25
<b>Human Resources (0.10)</b>		<b>1.00</b>
ICT Infrastructure Support	Number of BTS	0.22
	Number of Communication service operators	0.23
	Mobile Phone Signal Strength	0.30
	Types of Internet signals in most areas	0.25
<b>ICT Readiness (0.12)</b>		<b>1.00</b>
Natural and Cultural Potential	There are river tours	0.10
	There are irrigation tours	0.05

<b>Pillars/Variables</b>	<b>Indicators</b>	<b>Weight</b>
	There are lake tours	0.10
	There is a reservoir tour	0.05
Number of Attractions	Natural Attractions	0.30
	Cultural / Religious Tourism Objects	0.20
	Artificial Attractions	0.20
<b>Natural &amp; Cultural Resources (0.16)</b>		<b>1.00</b>
Safety from Natural Disasters	Natural Disaster Events (Landslides, Floods, Droughts)	0.35
	Natural disaster early warning system	0.05
	Safety equipment	0.05
	Disaster evacuation signs and routes	0.10
Safety from crime	Access to police stations	0.25
	Trends in theft cases	0.20
<b>Safety &amp; Security (0.13)</b>		<b>1.00</b>
Public spaces	Field Football	0.05
	Shops	0.05
	Permanent market	0.03
	Semi-permanent market	0.04
	Convenience store	0.10
Access to means of supporting economic activity	ATM	0.06
	Bank Agent	0.07
	Automobile/motorcycle repair shop	0.05
	Beauty salon	0.02
	Ticketing/travel agents	0.02
	Karaoke entertainment venues	0.04
Access to accommodation providers	Restaurant	0.02
	Food and beverage stalls	0.04
	Hotel	0.03
	Lodging	0.08
Number of Small Micro Enterprises	Grocery Store	0.15
	Craft	0.15
	Food & Drink	0.05
<b>Tourist Service Infrastructure (0.15)</b>		<b>1.00</b>
Transportation supporting infrastructure	Street lighting	0.40
	Public transport	0.35
	The road can be passed by 4/more wheeled vehicles	0.25
<b>Transport Infrastructure (0.09)</b>		<b>1.00</b>

Source: Data processing and FGD, 2022

## RESULTS AND DISCUSSION

This study calculates the tourism competitiveness index at the village level, which is then aggregated to the sub-district level and Regional Tourism Destination areas based on Sumedang Regency Regional Regulation No. 10 of 2020 concerning the Sumedang Regency Tourism Development Master Plan for 2021-2025. The competitiveness index

is produced from 8 pillars and 56 indicators adopted from the *Travel and Tourism Competitiveness Index* released by the World Economic Forum.

The results of village stage data processing produce TTCI scores for each village in Sumedang Regency for 2019 (before the pandemic) and 2021 (during the pandemic). The score is then ranked based on the results of the 2021 score and compared to the changes from 2019 and the difference with the average score of Sumedang Regency (Appendix 1).

Urban villages still dominate areas with high competitiveness scores because they have complete infrastructure and facilities in South Sumedang District and North Sumedang District. Some villages with urban characteristics or adjacent to the sub-district capital, such as Hegarmanah Village and Cikeruh Village in Jatinangor District, also have high TTCI scores. However, there are also several villages whose TTCI scores have been able to increase significantly, such as Sukamenak, Cimarias, Cikadu, and Nagarawangi, even though the base is not urban.

The results of the 2019 and 2021 TTCI Scoring for village areas aggregated to the sub-district levels show each pillar's advantages and weaknesses. The results of this TTCI can be used as a reference for developing priority areas, such as Jatigede Areas, which benefit from high natural and cultural resource potential, with improvements to other pillars. Urban areas still dominate the sub-districts with the highest TTCI scores with more complete supporting infrastructure and infrastructure. Therefore, the Central DPD Sumedang Region has the most increased competitiveness.

**Table 2. Results of District Tourism Competitiveness Scoring**

Rank	Sub-District	Score 2021	Changes from 2019		Diff. form District avg (%)	Rank	Sub-District	Score 2021	Changes from 2019		Diff. form District avg (%)
			Rank	Score					Rank	Score	
1	Smd Selatan	4.30	5	0.49	8.59	14	Tanjungsari	4.00	-6	0.29	1.01
2	Smd Utara	4.27	0	0.32	7.83	15	Situraja	3.96	5	0.58	0.00
3	Jatinangor	4.25	-2	0.08	7.32	16	Pamulihan	3.94	0	0.53	-0.51
4	Ujung Jaya	4.17	9	0.65	5.30	17	Conggeang	3.93	5	0.62	-0.76
5	Paseh	4.12	-2	0.28	4.04	18	Jatinunggal	3.91	-7	0.31	-1.26
6	Darmaraja	4.10	8	0.59	3.54	19	Cibugel	3.86	-2	0.45	-2.53
7	Cimalaka	4.09	-3	0.27	3.28	20	Buahdua	3.84	-1	0.45	-3.03
8	Tomo	4.05	-3	0.22	2.27	21	Cisitu	3.84	0	0.49	-3.03
9	Rancakalong	4.04	6	0.59	2.02	22	Wado	3.79	2	0.52	-4.29
10	Cisarua	4.01	0	0.32	1.26	23	Sukasari	3.78	-5	0.38	-4.55
11	Ganeas	4.01	-2	0.31	1.26	24	Jatigede	3.67	-1	0.38	-7.32
12	Cimanggung	4.00	-5	0.28	1.01	25	Tanjungmedar	3.61	0	0.40	-8.84
13	Tanjungkerta	4.00	-1	0.46	1.01	26	Surian	3.39	0	0.42	-14.39

East
  South
  North
  West
  Middle

Source: Data processing, 2022

South Sumedang District became the district with the highest TTCI score (up five places compared to 2019), followed by North Sumedang District, which did not experience a change in rank from 2019. Ujungjaya District is the area that has the highest increase in TTCI score. Tourism competitiveness for Regional Tourism Destinations (DPD) has not changed at all, both before and during the Covid-19

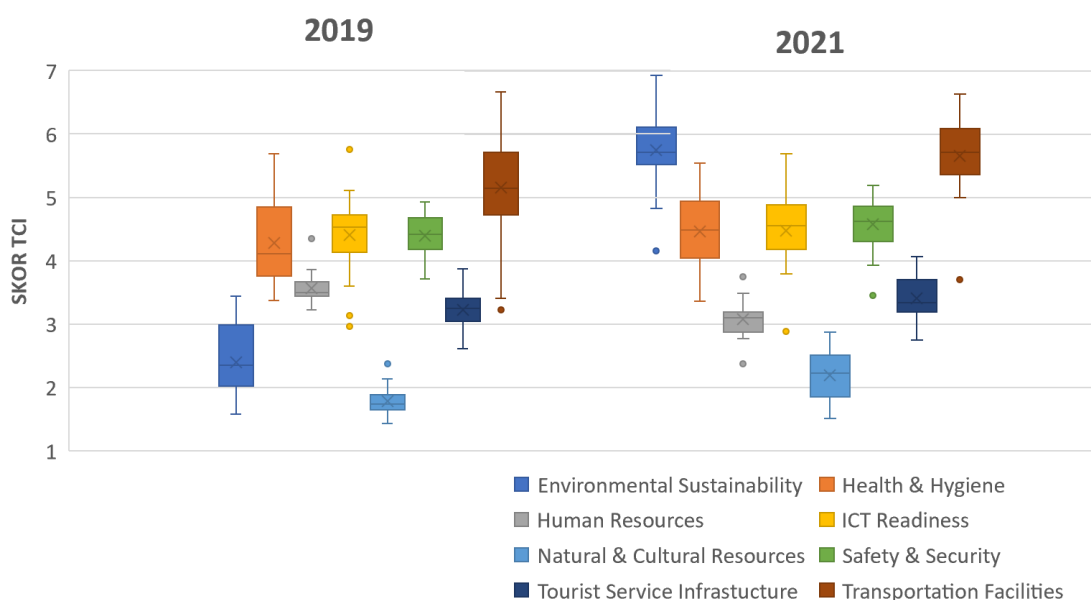
pandemic, and is dominated by the Central region of Sumedang Regency consisting of North Sumedang and South Sumedang Districts.

**Tabel 3. Hasil Skoring Daya Saing Pariwisata Destinasi Pariwisata Daerah**

Rank	DPD	Kecamatan	Score 2021	Changes from 2019		Diff. form District avg (%)
				Rank	Score	
1	Tengah	Sumedang Utara, Sumedang Selatan	4.28	0	0.41	0.32
2	Barat	Cimanggung, Jatinangor, Pamulihan, Tanjungsari, Rancakalong, Sukasari	4.02	0	0.34	0.06
3	Selatan	Cisarua, Ganeas, Situraja	3.98	0	0.46	0.02
4	Utara	Buahdua, Cimalaka, Conggeang, Paseh, Surian, Jungkerta, Tanjungmedar, Tomo, Ujungjaya	3.92	0	0.42	-0.04
5	Timur	Cibugel, Cisitu, Darmaraja, Jatigede, Jatinunggal, Wado	3.86	0	0.46	-0.10
<b>Sumedang</b>			<b>3.96</b>			

Sumber: Pengolahan data, 2022

The score difference from the 8 TTCI Pillars was most significant in the higher environmental sustainability pillars in 2021 than before the pandemic (2019). Other pillars that also increased in the average score were the pillar of cultural and natural resources and transportation facilities. Meanwhile, the human resources pillar experienced a decrease in average scores. Outliers in some pillars indicate that there are still development inequalities between villages (Figure 1).

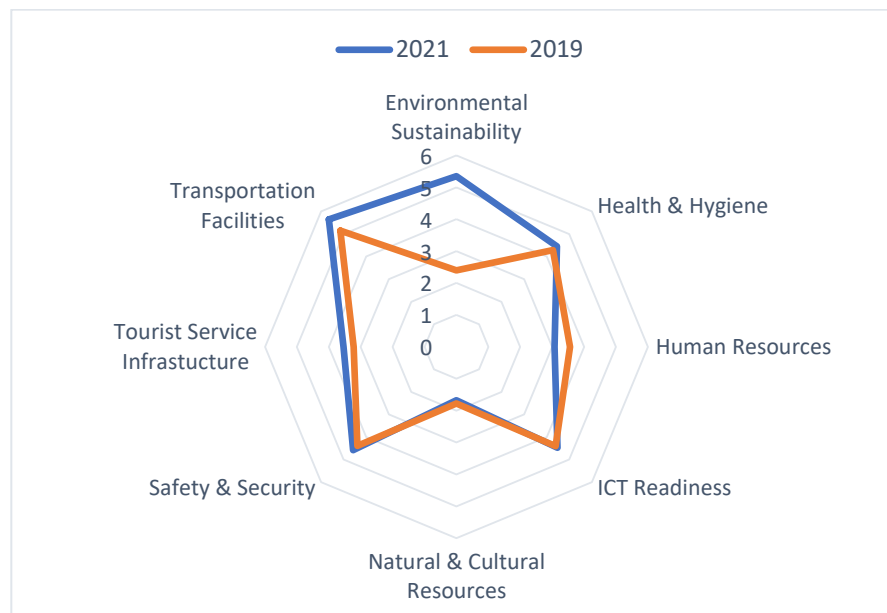


Source: Data processing, 2022

**Figure 1. Comparison of TTCI Score Data Distribution for 2019 and 2021**

Areas with the highest TTCI scores generally have advantages from the pillars of health and hygiene, human resources, ICT readiness, tourism service infrastructure, and transportation facilities. Meanwhile, areas with low TTCI scores have better environmental sustainability pillars because they are generally rural areas with lower economic activity and relatively minimal pollution.





Source: Data processing, 2022

**Figure 2. TTCI Score Comparison 2019 & 2021**

The results of the composite assessment of all TTCI indicators and pillars (Figure 2) show very prominent differences in the pillars of environmental sustainability, which have increased very highly compared to before the Covid-19 pandemic. The increase in post-pandemic environmental sustainability pillars in Sumedang Regency is due to reduced water, soil, and air pollution. In addition, there has been a reduction in mining activities and field burning for agricultural businesses, as well as an increase in waste recycling and tree planting on critical land. Meanwhile, domestic waste management has become worse during the pandemic, and there has been a reduction in waste banks compared to before the pandemic. Waste management is a new challenge that arises during and after the pandemic, so a responsive and dynamic environmental policy perspective is needed. The excellence of environmental quality during this period of *social distancing* can inspire the adoption of an environmentally friendly development path (Sharifi & Khavarian-Garmsir, 2020).

Meanwhile, human resources and natural and cultural resource pillars scored lower during the Covid-19 pandemic. The decline in the human resources pillar was caused by the transition of people's livelihoods from tourism-related business fields, such as food and beverage accommodation, trade, and services, to activities in the primary sector, especially agriculture. Declining economic activity in the secondary and tertiary sectors, so many people who work are disrupted and even lose their jobs. For education, access to schools has also become less or more difficult than before the pandemic because learning is carried out online, and many are still constrained by internet networks, especially in rural areas. In addition, online education is currently not fully effective due to limited proficiency in using digital devices that are not evenly distributed among students and instructors (Butnaru et al., 2021).

The pillars of natural resources and culture declined as tourism activities that previously used irrigation and lakes decreased post-pandemic, while the number of tourist attractions was also relatively stagnant. Utilizing local tourists and communities can be a survival strategy when visitors outside the area are reduced due to social restrictions (Gössling et al., 2020).

Several other reports still show an increase in scores after the Covid-19 pandemic. Health facilities and services are increasingly being improved in line with the increasing

needs during the Covid-19 pandemic. The score improvement was supported by more access to health facilities, improved drinking water and sanitation quality, and reduced incidence of extraordinary diseases. During the public health emergency due to the Covid-19 pandemic, efforts are needed to increase support for more controlled health facilities, especially in densely populated areas (Zeng et al., 2021).

The pillar of ICT readiness increases due to the increase in the number of *Base Transceiver Stations (BTS)* so that the signal strength improves. In addition, the increasing use of the Internet during the pandemic has also encouraged the government to provide digital-based services that support working from home. The trend of working from anywhere is an opportunity to increase tourist visits to Sumedang Regency, which is rich in natural beauty, as long as it is supported by ICT readiness. The development of communication technology and digital platforms today allows several types of work to be done anywhere with a computer and internet connection (Anwar & Graham, 2021).

The pillars of safety and security are better than before the pandemic, especially in the availability of safety equipment and better disaster mitigation in each village, even though the number of disaster events has increased slightly. Disaster anticipation readiness is an added value, especially in areas that have disaster potential. In addition, the pandemic has created psychological barriers for prospective tourists, especially regarding tourism safety, so efforts are needed to maintain the quality and reputation of safe tourism (Sánchez-Cañizares et al., 2021).

All indicators in the pillar of tourism service infrastructure had increased compared to before the pandemic, even though the pandemic disrupted people's economic activities. However, adjustments are needed in the "new normal" period for customers; for example, there is an urgent need for business actors to adjust services by implementing health protocols such as disinfection and sanitation (Sánchez-Cañizares et al., 2021).

Transportation facilities have also improved after the pandemic, especially with increasingly widespread street lighting. However, roads travelled by four wheels or more are still relatively stagnant, although it is necessary to improve accessibility and encourage community economic activity. Increasing accessibility in terms of transportation infrastructure can spur sustainable economic development through a multiplier effect and boost economic growth through tourist visits (Wu et al., 2021).

Of the eight pillars of TTCI analyzed in this study, environmental factors can be valuable capital in building an environmentally friendly tourism image after the pandemic. The big challenge that must be faced is to prepare human resources that are more adaptive to change, for example, through mastery of digital technology, which can not only be a means of tourism promotion but can improve the skills of business actors in the tourism sector such as foreign language education and increasing knowledge and insight in various fields related to tourism.

## **CONCLUSIONS AND RECOMMENDATIONS**

Each region has mapped aspects of advantages and weaknesses seen from the pillars of tourism competitiveness based on TTCI parameters. Areas with an urban base still dominate with high competitiveness scores because they have complete infrastructure and facilities at the village, sub-district, and Regional Tourism Destination levels.

Areas with the highest TTCI scores generally have advantages from the pillars of health and hygiene, human resources, ICT readiness, tourism service infrastructure, and transportation facilities. Meanwhile, areas with low TTCI scores have better environmental sustainability pillars because they are generally rural areas with lower economic activity and relatively minimal pollution. The environmental sustainability pillar has the highest score increase compared to before the pandemic, while the human resources pillar experienced a decrease in score. It indicates an improvement in

environmental quality compared to before the pandemic, but on the other hand, there is a negative impact on declining human resources due to reduced learning activities in the community due to social restrictions.

The results of this mapping are expected to be a reference for stakeholders to improve areas that are priorities for tourism development, especially after the Covid-19 pandemic. Coordination between stakeholders is needed to increase tourism competitiveness by utilizing existing potential and strengths to the maximum and facing challenges more effectively. Specifically, the recommendations we provide from the results of mapping tourism competitiveness using this TTCI parameter include the following:

1. Sustainability and environmental preservation. Tourism sustainability is an essential factor in increasing competitiveness. The Sumedang Regency Government needs to maintain a balance between tourism development and environmental conservation. Introducing eco-friendly practices, reducing negative environmental impacts, and involving local communities in conservation efforts can provide long-term benefits for tourism in Sumedang. The pillar of a better environment during the pandemic needs to be maintained and even become a carrying capacity for natural tourism which is the advantage of Sumedang Regency.
2. Improving the quality of human resources. Training and skills development for the tourism workforce is essential. The government can work with educational institutions and the tourism industry to provide training programs that suit the needs of the tourism sector. Having quality human resources can improve tourist services, thereby increasing tourism competitiveness.
3. Development of transport infrastructure. The government must cooperate with relevant agencies at the central and provincial levels so that infrastructure development is more synergistic with and supports tourism development locations that will facilitate tourist access to Sumedang Regency. For example, the Cisumdawu toll road interchange can be used to improve road access and tourism promotion activities.
4. Expanding information technology and telecommunications networks. Public access to ICT must be more evenly distributed in various regions because access to digital media has now become necessary for the community, both residents and tourist visitors. Residents can use it for practical tourism activities and marketing of tourist destinations through digital media. Using social media, websites, advertising campaigns, participation in tourism fairs, and cooperation with travel agents can help promote tourist destinations widely.

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