JCBAu
Journal of City: Branding and Authenticity
JCBAu 1(1): 1–16
ISSN 3025-4000

Institute for Advanced Science, Social and Sustainable Future
MORALITY BEFORE KNOWLEDGE

# Evaluating regional tourism competitiveness through the competitiveness monitor framework: A spatial and policy-based approach to place branding

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Received Date: June 5, 2025 Revised Date: July 11, 2025 Accepted Date: July 14, 2025

## ABSTRACT

**Background:** Tourism has not yet become a leading sector in regional revenue. To optimize development, it is essential to assess both internal and external subsystems of the tourism sector and measure its competitiveness against national standards. **Methods:** This study used a combination of qualitative and quantitative descriptive methods. The Competitiveness Monitor framework with eight indicators was applied to evaluate tourism competitiveness. Spatial analysis, including identity and union overlays, was used to analyze geographical factors. Data were collected through field observations, secondary data from Regional Government Organizations (OPD), and online sources, which were then mapped and interpreted. **Findings:** The results of this study show that Cilacap Regency is located in a coastal area with gentle slopes that dominate 58.76% of the total area. Because of these natural factors, many natural attractions are found in this regency coupled with the regency capital being right on the coast which makes tourism businesses develop a lot in this area. In addition to natural factors, is also supported by demographic, socio-cultural, technology use, economic, and political factors that discuss tourism policy. Through measurements using the Competitiveness Monitor, of the eight indicators, one indicator is in the improvement stage, namely EI, six of which are in the developing stage, namely HTI, PCI, IDI, TAI, HRI, and SDI. And one indicator is still in the undeveloped stage, namely OI. **Conclusion:** With targeted strategies, Cilacap can enhance its competitiveness and move toward becoming a prominent tourism destination on a national scale. **Novelty/Originality of this article:** This study offers a comprehensive evaluation tourism competitiveness by integrating the Competitiveness Monitor framework with spatial and policy analysis. It uniquely maps the relationship between geographic, demographic, economic, and infrastructural variables, presenting a detailed, data-driven roadmap for future tourism development in a region where tourism is not yet a primary economic sector.

**KEYWORDS**: competitiveness monitor; tourism; tourism attraction.

Many countries in the world, especially in Indonesia, tourism planning and development is a government priority because it is considered important for Indonesia's development, especially as one of the regional and state income sectors that will affect the economy (Nabilah et al., 2024; Pasaribu & Suhartini, 2021). Tourism is considered important in addition to being an economic engine, tourism is also considered capable of cutting unemployment and prospering the surrounding community because it can create new jobs (Aswan et al., 2023; Widayanti & Dewanti, 2017).

Therefore, local governments are competing to maximize the tourism potential of their regions (Aliansyah & Hermawan, 2019; Pribadi & Nurbiyanto, 2021). Tourism potential

**Cite This Article:**
Syarifah, N. M., & Mujahid, L. M. A. (2025). Evaluating regional tourism competitiveness through the competitiveness monitor framework: A spatial and policy-based approach to place branding. *Journal of City: Branding and Authenticity, 3*(1), 1-16. https://doi.org/10.61511/jcbau.v3i1.2025.1943

arises when there is a tourist attraction (Aziza & Buchori, 2020). Based on the Decree of the Minister of Home Affairs Number 100.1.1-6117 of 2022 concerning the Provision and Updating of Codes, Data on Government Administrative Areas and Islands, Indonesia has 17,001 islands which make Indonesia the largest archipelago in the world. With such geographical conditions, Indonesia has different spatial characteristics in each region which makes it a special tourist attraction that is not owned by other regions. This is the main attraction for tourists to visit Indonesia and has enormous potential in the tourism sector (Suryani, 2017).

Central Java Province has enormous potential in the tourism sector (Soeswoyo et al., 2021). This can be seen from the number of domestic tourists by destination province in the last three years, the number of which has always been above 100,000,000 people, Central Java Province is consistently included in the three provinces with the highest number of domestic tourists (Central Bureau of Statistics, 2023a). Cilacap Regency is the largest regency in Central Java Province with a total area of 2,249.2 8 $km^2$. Cilacap Regency covers 6.48 percent of the total area of Central Java Province and is divided into 24 sub-districts. The geographical location of Cilacap Regency is in the south of Java Island, which makes it a coastal city with many beach tourism attractions (Central Bureau of Statistics, 2023b). In the 2011-2031 Regional Spatial Plan of Cilacap Regency, there are 48 tourist attractions (DTW) in Cilacap Regency, which are dominated by natural attractions as many as 31 destinations. As the largest province in Central Java, Cilacap Regency certainly provides great opportunities in the tourism sector that are very likely to be developed and have the opportunity to compete nationally.

When viewed from the number of tourists visiting Cilacap Regency in the last three years, the number has continued to increase. In 2022 the number of tourists visiting Cilacap Regency reached 1,069,294 tourists. However, data on the number of tourists is not enough to see the level of tourism competitiveness in an area. To see the level of tourism competitiveness, other indicators are needed such as demographic conditions, service quality, accessibility, socio-economic conditions, and so on (Širá & Pukała, 2019). Measurement of tourism competitiveness is important to provide an overview of the competitiveness position in a region in order to determine the policy strategies that need to be taken by the local government to develop the tourism sector by paying attention to the indicators that determine its competitiveness (Rini & Ma'ruf, 2017). This is what encourages the author to conduct research entitled "Analysis of the Effect of Tourism on the Economy" in order to determine the level of competitiveness of the tourism industry. The results of the analysis are expected to be used by tourism managers or local governments to improve indicator variables that are still lacking in the competitiveness index. This research is expected to provide benefits and serve as evaluation material for regional management, particularly in relation to tourism development.

## 2. Methods

There are two types of research used in this research, namely descriptive research with qualitative and quantitative approaches. The descriptive qualitative research type in this research is used to explain the tourism characteristics of Cilacap Regency, while the quantitative research type is used to determine the level of tourism competitiveness of Cilacap Regency. The location of this research is in Central Java Province, precisely in Cilacap Regency.

Based on the source, the types of data used in this study are primary data and secondary data. Sugiyono (2016) explained that primary data is information obtained directly by researchers from the source. This primary data source is generated through interview interactions with research subjects and through direct observation or observation at the scene. Primary data in this study is in the form of data on tourism elements located in five tourist attraction areas in Cilacap Regency which will explain the condition of tourism at the research location.

Secondary data is information that is not obtained directly by data collectors, but is obtained through intermediaries such as other people or through written documents. This secondary data source can be in the form of books, journals, theses, or government agency documents relevant to the research being conducted (Sugiyono, 2016). Secondary data in this study includes: (a) district profile which includes natural conditions, demographics, socio-culture, data on the use of technology, economy, and accessibility; (b) data on tourist attraction objects of Cilacap Regency 2022 based on their type; (c) data on the number of tourists in Cilacap Regency between 2015-2023; (d) data on the average length of stay of tourists while visiting Cilacap Regency in 2022; (e) data on accommodation and food and beverage businesses that support the Cilacap Regency tourism sector; (f) data on Cilacap 2.4Regency tourism levies in Cilacap Regency PAD; (g) documents and shapefiles of the Cilacap Regency Regional Spatial Plan base map 2012-2032; (h) regulations and decrees that serve as references.

### *2.1 Data collection & analysis*

Sugiyono (2016) explained that observation is a data collection technique that involves direct observation of conditions, behaviors, or situations related to research. The observations made in this study focus on observing the elements that describe the tourism characteristics of Cilacap Regency. This observation includes the identification of tourist attractions in Cilacap Regency, the availability and feasibility of tourist facilities, accessibility to tourist attractions, and the availability and feasibility of public facilities. Literature review is a technique used to obtain theories related to tourism that come from government policies/regulations, journals, articles, or previous research (Sugiyono, 2016). In this study, all secondary data were collected through document and literature studies obtained from the Youth, Sports and Tourism Office and from the Central Bureau of Statistics.

Sugiyono (2016) explains that data analysis is a step in compiling, transforming, and interpreting the data that has been collected to support the research journey. Data analysis is the process of processing data that has been obtained from data collection methods. The first research objective was achieved using qualitative descriptive analysis and spatial analysis. Qualitative descriptive analysis is used to determine indicators that explain the external conditions of tourism in Cilacap Regency (natural conditions, demographics, socio-culture, technological progress, economy, and tourism policy) and the internal conditions of tourism in Cilacap Regency (tourist visits and average length of stay of tourists, road conditions as accessibility, tourism supply, and tourism contribution in the regional economy). Meanwhile, spatial analysis is used to determine the distribution of tourism supply in Cilacap Regency.

The second research objective was achieved using quantitative descriptive analysis. The analysis used is the Competitiveness Monitor analysis method to determine the competitiveness of the tourism industry in Cilacap Regency. The calculation of this method is done by calculating the tourism competitiveness index by including all competitiveness indicators from the World Travel and Tourism Council (WTTC) (2004) as many as eight indicators, namely Human Tourism Indicator (HTI), Price Competitiveness Indicator (PCI), Infrastructure Development Indicator (IDI), Environment Indicator (EI), Technology Advancement Indicator (TAI), Human Resources Indicator (HRI), Openness Indicator OI), Social Development Indicator SDI).

## 3. Results and Discussion

### *3.1 Overview*

Cilacap Regency is a regency located in the western part of Central Java Province with Cilacap City as its capital. Cilacap Regency is the largest regency in Central Java Province with an area of 6.48% of the total area of Central Java Province. Cilacap Regency is located

between 7°30' and 7°45'20'' south latitude and between 108°4'30'' and 109°30'30'' east longitude. Cilacap Regency covers 6.48 percent of the area of Central Java Province and is divided into 24 sub-districts. The boundaries of the region place Cilacap Regency in a strategic location with direct access to the sea and connectivity with several surrounding regencies, both in Central Java and West Java. This gives Cilacap Regency an important position in the context of trade, agriculture and regional development.

The largest sub-district in Cilacap Regency is Wanareja Sub-district with an area of 195.92 $km^2$ which covers 8.29% of the total area of Cilacap Regency while the smallest sub-district is Cilacap Selatan Sub-district with an area of 8.04 $km^2$. Dayeuhluhur, Wanareja and Majenang sub-districts are the farthest sub-districts from the regency capital with a distance of 105 km for Dayeuhluhur and 86 km for Wanareja and Majenang sub-districts. Sub-districts located in the center or capital city, such as Kecamatan Cilacap Tengah and Kecamatan Cilacap Utara, have relatively smaller areas but are very close to the administrative center, while sub-districts farther from the capital city, such as Kecamatan Dayaeuhluhur and Kecamatan Wamareja, tend to have larger areas. The average temperature in Cilacap Regency is 27.3ºC, which is lower than the average temperature of Central Java Province, which is 29.13ºC. Details of the temperature of Cilacap Regency per month can be seen in Table 1.

Table 1. Observations of climate elements by month

| Month | Temperature (ºC) | | |
|---|---|---|---|
| | Minimum | Average | Maximum |
| January | 23.6 | 27.8 | 34.2 |
| February | 23.6 | 27.5 | 33.2 |
| March | 23.9 | 27.6 | 33.9 |
| April | 23.8 | 28.0 | 33.0 |
| May | 24.0 | 28.3 | 34.0 |
| June | 23.4 | 27.3 | 31.8 |
| July | 21.6 | 27.2 | 31.6 |
| August | 23.0 | 26.9 | 31.0 |
| September | 23.4 | 27.1 | 31.0 |
| October | 23.0 | 26.5 | 31.6 |
| November | 23.1 | 26.6 | 31.8 |
| December | 23.0 | 27.2 | 33.1 |

The highest average temperature is in May with 28.3ºC and the lowest average temperature is in August with 26.9ºC. In general, the average temperature in Cilacap Regency is quite stable throughout the year, with little fluctuation in maximum and minimum temperatures. May and March show the highest maximum temperatures, while July and August are cooler months with lower minimum temperatures.

### *3.2 Characteristics of tourism system elements*

#### *3.2.1 Natural factors*

External subsystems are classified as supporting factors that exert an indirect influence on tourism (Nugroho, 2019). These external subsystems interact with the tourism system and can have a significant impact on the success and sustainability of tourism (Gazoni & Silva, 2022; Luongo et al., 2023). The external subsystem consists of 6 components, namely natural factors, demographic factors, socio-cultural factors, technological factors, economic factors, and political factors (Iswanto et al., 2024).

The natural factor in question is topography. Topography is a picture that displays an identifiable picture of the earth's surface, in the form of natural and artificial projects (Ahmed & Mahmud, 2022; Hatzopoulos & Hatzopoulos, 2024). Topographic maps show objects on the earth's surface with heights calculated from sea level and are usually presented with contour lines with each contour line representing an altitude. Sourced from

Demnas data, Cilacap Regency has a land elevation that is classified into six classifications. Each classification has unique characteristics that affect various aspects of environment and land use in the area. For more details, the topographic classification of Cilacap District can be seen in Table 2 below.

Table 2. Topography classification

| Altitude | Morphography | Area ($km^2$) | Percentage (%) |
|---|---|---|---|
| 0 - 50 m | Gentle Slope | 1,078.30 | 58.76 |
| 51 - 75 m | Wavy-Hilly Ramps | 108.82 | 5.93 |
| 76 - 200 m | Steep Hills | 294.54 | 16.05 |
| 201 - 500 m | Very steep hills | 215.63 | 11.75 |
| 501 - 1000 m | Steep Mountains | 121.71 | 6.63 |
| 1001 - 1500 m | Very steep mountains | 16.19 | 0.88 |

Based on Table 2 above, it can be seen that land with an altitude of 0 - 50 meters above sea level, covering 58.76% of the total area of Cilacap Regency, dominates in Cilacap Regency. Meanwhile, land with an altitude of 1001-1500 meters is rarely found Cilacap District, covering only 16.19 $km^2$ or 0.88% of the total area of Cilacap District. Low altitude land is found in all subdistricts, but high altitude land is found in only a few subdistricts, namely Dayeuhluhur, Majenang, and Wanareja.

### *3.2.2 Demographic factors*

One important aspect in the growth of an area is the population aspect because this can show the characteristics of population development and is also an indicator to determine the amount of demand in an area in the coming years. In 2022, the population of Cilacap Regency was recorded at 1,988,622 people. Population density tends to increase along with the increase in (Diao et al., 2021; Güneralp et al., 2020). On the other hand, the distribution of population in each sub-district is not evenly distributed. In the Cilacap Regency area in 2022, South Cilacap Sub-district was recorded as the most populous area with 9,214 people/$km^2$, while the sub-district with the lowest population density was Kampung Laut Sub-district with 109 people/$km^2$ (BPS Cilacap Regency, 2023).

The productive age in Cilacap Regency is 1,384,656 people, which is calculated from the population age of 15 years to 64 years. In 2022, according to the age group of the Cilacap Regency population, the age of 30-34 is the age of the largest population in that year. With the large number of people of productive age in 2022, namely 1,384,656 people, this illustrates the large number of Human Resources (HR) in Cilacap Regency. The more productive age means the more goods and services that can be produced because productive age tends to be physically stronger than non-productive age.

### *3.2.3 Socio-cultural factors*

In Cilacap Regency, the Javanese are dominated by the Sundanese who are spread almost throughout the Cilacap Regency, while the Sundanese are more concentrated in the western part of Cilacap (which borders West Java Province) and several other tribes and ethnicities such as Arabs, Padang, Chinese, and other tribes who are immigrants whose distribution is more random than the Javanese and Sundanese. According to the Central Bureau of Statistics (2023), most of the population of Cilacap Regency is Muslim. In 2022, around 98.39% of the population of Cilacap Regency embraced Islam, indicating that Islam is the majority religion and is very influential in the cultural and social aspects of Cilacap Regency.

Meanwhile, the number of Christians (Catholic and Protestant) was recorded at around 1.57%, indicating that although there are Christians, these two religions are still a minority in Cilacap Regency and the rest are Buddhists, Hindus and Confucianists. In line with this, the number of worship facilities found in Cilacap are mosques and mushollas, which were

recorded at 2,466 and 5,324 respectively in 2022, while there were 128 protestant churches and 11 Catholic churches. In addition to education, technological advancement is an illustration that symbolizes the range of novelty that an area can receive that will support tourism. This technological advancement can be seen from the use of cellular phones and internet network access of local district residents. The percentage of male cell phone users shows fluctuations, but overall increases from 2018 to 2022, while the percentage of female cell phone users generally increases from 2018 to 2021 before experiencing a small decrease in 2022. This indicates an increase in mobile phone adoption among women over the period.

### *3.2.4 Economic& political factors*

To see the real economic performance in a region is to look at its economic growth indicators (Trisnawati et al., 2008). Based on data from the Central Bureau of Statistics, the GRDP value of Cilacap Regency has increased and decreased in certain years. In 2019 the GRDP value of Cilacap Regency increased from the previous year by 2,226.72 billion rupiah, after that in 2020 it experienced a significant decline of 10,315.71 billion rupiah and in 2021 and 2022 the GRDP value of Cilacap Regency continued to increase.

The sector that contributes the most revenue is the processing industry sector, which amounted to 61.655 billion rupiah in 2022 or 63.78% of all revenue obtained by Cilacap Regency. The total PAD of Cilacap Regency in the last five years has always increased from year to year, but in 2022 it has decreased. Other legitimate PAD as a whole is consistently the object with the largest contribution to PAD every year and has positive growth (Riani, 2021). The economic revenue in the tourism sector is reviewed from taxes and levies on the tourism sector recorded in the Regional Original Revenue. Political factors in the tourism external subsystem include various aspects that can affect tourism development and management. These political factors play an important role in determining the direction and success of tourism development, Government policies, stability and support affect how the tourism sector develops and adapts to change.

### *3.3 Internal subsystem*

The internal subsystem has a direct relationship and is very important to the existence of tourism (Zhang et al., 2022). The internal subsystem consists of three types, namely tourism demand, intermediaries elements, and tourism supply (Richardy, 2014). The number of domestic tourists shows fluctuations, with a general trend of significant increase from 2015 to 2022, especially after 2020. A sharp increase is seen in 2021 and 2022 with a jump from 845,009 tourists in 2021 to 1,069,294 tourists in 2022. The number of foreign tourists is very low throughout the period and there are no foreign tourists in some years. In 2017, there were 18 foreign tourists and in 2019 there were only 8 foreign tourists. In 2018 to 2020 the average length of stay of tourists was relatively stable, ranging from 1.29 to 1.37 days and in 2021 there was a significant spike in the average length of stay to 3.03 days. In 2022 the average length of stay decreased slightly to 2.76 days, but remained higher than the years before 2021.

In 2020, roads in good condition were recorded as long as 843.00 $km^2$, in 2021 it increased to 849.58 $km^2$ and in the following year it increased again to 853.47 $km^2$, so it can be concluded that in the last three years roads in Cilacap Regency have increased to good condition by 20.47 $km^2$. Several roads in Cilacap district over the past three years have experienced a decline in quality so that the condition of the roads has become severely damaged. Based on Table 8, in 2020 the severely damaged roads in Cilacap District were 123.83 $km^2$, in 2021 they increased to 135.31 $km^2$ and in 2022 they further increased to 156.66 $km^2$. From this data, it can be concluded that Cilacap district has 32.83 $km^2$ of severely damaged roads in just three years.

As an element of supply, tourist attractions offer everything to attract tourists. The offer in question is a product and service. This tourism offering is intended for or consumed

by tourists during tourism activities. The tourism supply element of Cilacap Regency in this study consists of three types of tourism businesses that are the basic needs of tourists, namely Cilacap Regency tourist attractions, accommodation provision, and food and beverage service businesses located in Cilacap Regency.

### *3.3 Competitiveness monitor indicator*

Tourism competitiveness is a representation of the forming indicators, of which there are eight indicators, namely the Human Tourism Indicator (HTI), Price Competitiveness Indicator (PCI), Infrastructure Development Indicator (IDI), Environment Indicator (EI), Openness Indicator (OI), and Social Development Indicator (SDI), where the better the performance of the forming indicators, the higher the tourism competitiveness in a region.

#### *3.3.1 Human Tourism Indicator (HTI)*

This indicator illustrates the achievement of regional economic growth as a result of tourist arrivals to the area. The calculation used to measure is the ratio of the number of tourists and the total local population, which can be seen in Table 3.

Table 3. Calculation of HTI indicators

| Year | Number of Travelers | Total Population | HTI |
|---|---|---|---|
| 2018 | 468,431 | 1,906,849 | 0.25 |
| 2019 | 89,078 | 1,937,427 | 0.05 |
| 2020 | 467,059 | 1,944,857 | 0.24 |
| 2021 | 845,009 | 1,963,824 | 0.43 |
| 2022 | 1,069,294 | 1,988,622 | 0.54 |

The Human Tourism Indicator (HTI) in Table 30 above explains the economic development due to the arrival of tourists in Cilacap Regency. The indicator used in the Human Tourism Indicator (HTI) is the ratio between the total number of tourists, both domestic and foreign tourists, and the population of Cilacap Regency from 2018 to 2022. The results of the HTI of Cilacap Regency experienced a decline and increase where in 2019 the decline was very drastic, namely 0.20 from the previous year due to the Covid-19 outbreak, after a very drastic decline in 2019, the HTI value showed a significant upward trend from 2020 to 2022. This increase from 0.24 in 2020 to 0.54 in 2022 indicates that the achievement of regional economic growth as a result of tourist arrivals to Cilacap Regency is positive.

#### *3.3.2 Price Competitiveness Indicator (PCI)*

This indicator describes the consumption of tourists on their tour. Calculated through the product of the number of tourists, the average accommodation rate, and the average date period, it can be seen in Table 4. The following is the PCI value of Cilacap Regency.

Table 4. PCI indicator calculation

| Year | Number of Travelers | Average Hotel Rate | Average Length of Stay | PCI |
|---|---|---|---|---|
| 2018 | 468,431 | 177,000 | 1.29 | 106,957,850,230 |
| 2019 | 89,078 | 180,000 | 1.36 | 21,806,294,400 |
| 2020 | 467,059 | 185,000 | 1.37 | 118,376,103,550 |
| 2021 | 845,009 | 204,000 | 3.03 | 522,316,963,080 |
| 2022 | 1,069,294 | 230,000 | 2.76 | 678,787,831,200 |

For the indicators used in the Price Competitiveness Indicator (PCI), namely the purchasing power in this case what is meant is the average hotel price in Cilacap Regency with the number of foreign tourists and the average stay of tourists visiting Cilacap Regency from 2018 to 2022. PCI in Cilacap Regency experienced fluctuations, which in 2019

decreased and increased again in 2020 to 2022. Which in 2018 has a value of IDR 106,957,850,230 and in 2022 it rose to IDR 678,787,831,200, which means that in the last five years the purchasing power of tourists has increased.

### *3.3.3 Infrastructure Development Indicator (IDI)*

This indicator assesses the progress of infrastructure in supporting tourism. The following is the IDI value of Cilacap Regency which can be seen in Table 5. In the calculation of IDI in Cilacap Regency, data on population (people) and total road length (km) are used. It is known that the IDI of Cilacap Regency continues to decline every year this is because the population continues to increase every year while the total road length does not increase. The IDI shows a downward trend every year until 2022. From 2018 to 2019, the IDI decreased by 1.49%, this decrease continued until 2020 with 1.51% and stabilized again in 2021 without any changes. However, in 2022 the IDI value fell again by 1.54%. In the last five years, it can be seen that the population in Cilacap Regency has grown faster than the length of available roads, indicating potential pressure on existing road infrastructure. In Cilacap Regency, the population continues to decline every year while the length of roads does not increase. This can cause problems with traffic density, congestion, and a decline in the quality of transportation infrastructure, which can indirectly affect the condition of tourism in Cilacap Regency.

Table 5. IDI indicator calculation

| Year | Total Population (population) | Expected Road Length (km) | Total Road Length (km) | IDI |
|---|---|---|---|---|
| 2018 | 1,906,849 | 1,906.85 | 1,269.202 | 0.67 |
| 2019 | 1,937,427 | 1,937.43 | 1,269.202 | 0.66 |
| 2020 | 1,944,857 | 1,944.86 | 1,269.202 | 0.65 |
| 2021 | 1,963,824 | 1,963.82 | 1,269.202 | 0.65 |
| 2022 | 1,988,622 | 1,988.62 | 1,269.202 | 0.64 |

### *3.3.4 Environment Indicator (EI)*

This indicator shows the quality of the environment and people's awareness in protecting their environment. The EI value can be seen by using the Environmental Quality Index/*Indeks Kualitas Lingkungan Hidup* (IKLH) value. The following is the EI value of Cilacap Regency in Table 6. The indicator used in this indicator is the Cilacap Regency EI data from 2018 to 2022. The value of EI of Cilacap Regency has increased and decreased. From 2018 to 2021 the EI value increased gradually from 69.17 to 71.93. This value indicates a good effort in maintaining and improving environmental conditions. In 2022, there was a significant decrease in EI to 63.77, which could be caused by drastically deteriorating environmental factors, such as pollution, natural disasters, or ineffective environmental policies.

Table 6. EI indicator calculation

| Year | IKLH | EI |
|---|---|---|
| 2018 | 69.17 | 69.17 |
| 2019 | 69.93 | 69.93 |
| 2020 | 71.75 | 71.75 |
| 2021 | 71.93 | 71.93 |
| 2022 | 63.77 | 63.77 |

### 3.3.5 *Technology Advancement Indicator (TAI)*

This indicator measures the level of progress in modern infrastructure and technology, which can be measured through increased internet usage. The TAI value of Cilacap Regency can be seen in Table 7.

Table 7. TAI indicator calculation

| Year | Internet users (people) | Total Population 5 years & over (population) | TAI |
|---|---|---|---|
| 2018 | 634,558 | 1,776,977 | 0.33 |
| 2019 | 785,784 | 1,805,156 | 0.41 |
| 2020 | 940,905 | 1,807,002 | 0.48 |
| 2021 | 1,027,522 | 1,826,057 | 0.52 |
| 2022 | 1,132,665 | 1,850,458 | 0.57 |

From Table 7 above, it is known that the ratio of cellular phone usage in the last five years has been more than 50%, which means that more than half of the population in Kabupaten Cilacap already uses a cellular phone. This index shows the level of technology adoption among the population aged 5 years and above. The higher the number, the greater the percentage of the population using the internet.

From 2018 to 2020, the ratio consistently increases every year, from 0.33 in 2018 to 0.57 in 2022. This indicates that significant progress in the adoption or application of technology, especially the internet, continues to increase among the population. The steady increase in TAI could also be due to various factors, such as government policies, more affordable accessibility, or increased digital literacy among the public.

### *3.3.6 Human Resources Indicator (HRI)*

This indicator shows the quality of human resources in tourism areas. Calculated through the ratio of free illiterate population and educated population. The HRI value of Cilacap Regency can be seen in Table 7.

Table 7. HRI indicator calculation

| Year | Population Free of Illiteracy | Number of Educated Population (SD-PT) | HRI |
|---|---|---|---|
| 2018 | 1,380,681 | 1,029,275 | 1.34 |
| 2019 | 1,399,141 | 1,121,800 | 1.25 |
| 2020 | 1,433,962 | 1,178,130 | 1.22 |
| 2021 | 1,466,779 | 1,227,340 | 1.20 |
| 2022 | 1,478,738 | 1,278,879 | 1.16 |

The HRI indicator in Kabupaten Cilacap shows that in the last five years there has been a decrease in the value of the HRI every year even though the number of free illiterate residents and the number of educated residents continues to increase every year. Although there was a decline, the rate of decline in the HRI was not too sharp from year to year. This decline occurred because the growth rate of the educated population and the growth rate of the free illiterate population were quite different. The growth rate of the educated population increased by ±80,000 people each year while the growth rate of the free illiterate population was only ±20,000 people each year.

### *3.3.7 Openness Indicator (OI)*

This indicator reflects openness to international trade and tourist arrivals from abroad. Calculated through the ratio of the number of foreign tourists and the total population. The OI value of Cilacap Regency can be seen in Table 8.

Table 8. OI index calculation

| Year | Number of Foreign Tourists | Total PAD | OI |
|---|---|---|---|
| 2018 | 0 | 2,750,648,470 | 0.00 |
| 2019 | 8 | 422,856,992 | 0.02 |
| 2020 | 0 | 228,745,922 | 0.00 |
| 2021 | 0 | 550,000,000 | 0.00 |
| 2022 | 0 | 632,500,000 | 0.00 |

The OI value shows that Cilacap Regency has a very low level of openness to international interactions in the last five years. In 2019, the OI value of Cilacap Regency was recorded at 0.02. In this OI indicator, the profit cannot be calculated annually due to the absence of foreign visitors visiting for tourism purposes in a particular year. In the last five years, there were only 8 foreign tourists in 2019, other than that in other years there were no foreign tourists visiting.

### *3.3.8 Social Development Indicator (SDI)*

This indicator shows the safety and comfort of tourist destinations for tourists. Measured through the average length of stay of tourists. The SDI value of Cilacap Regency can be seen in Table 9. In this indicator, it can be assumed that the more comfortable and safer tourists travel in an area, the more they will choose to stay in that tourist destination. In 2021, SDI reached its highest value of 3.03, which is the same as the average tourist stay which also peaked at 3.03 days. After 2021, the SDI value decreased to 2.76 in 2022 and the average tourist stay also decreased to 2.76 days.

Table 9. SDI index calculation

| Year | Average Tourist Stay | SDI |
|---|---|---|
| 2018 | 1.29 | 1.29 |
| 2019 | 2.36 | 1.36 |
| 2020 | 1.37 | 1.37 |
| 2021 | 3.03 | 3.03 |
| 2022 | 2.76 | 2.76 |

### *3.4 Tourism index*

This analysis is very necessary in analyzing the determination of the potential owned by Cilacap Regency. After calculating the eight indicators, another calculation was done to produce a tourism index. The tourism index value for each indicator is said to be high if the acquisition of the five tourism index values leans more towards the maximum value (>0.50). This applies vice versa to conditions when the five tourism index values owned by each indicator are more inclined towards the minimum value (<0.50). From Table 10 above, it can be seen that of the eight indicators, the TAI indicator is the only indicator that has increased every year when calculated using the tourism index. The calculation of the tourism index can be seen in Table 10.

Table 10. Calculation of tourism index

| Year | HTI (Ratio) | PCI (Rp) | IDI (%) | EI (Ratio) | TAI (%) | HRI (%) | OI (%) | SDI (Days) |
|---|---|---|---|---|---|---|---|---|
| 2018 | 0.41 | 0.13 | 1.00 | 0.66 | 0.00 | 1.00 | 0.00 | 0.00 |
| 2019 | 0.00 | 0.00 | 0.67 | 0.75 | 0.33 | 0.50 | 1.00 | 0.04 |
| 2020 | 0.39 | 0.15 | 0.33 | 0.98 | 0.63 | 0.33 | 0.00 | 0.05 |
| 2021 | 0.78 | 0.76 | 0.33 | 1.00 | 0.79 | 0.22 | 0.00 | 1.00 |
| 2022 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.84 |

### *3.5 Composite index*

In calculating the composite index to determine tourism competitiveness. The composite index value shows the result of dividing the sum of the tourism index values of each indicator in 5 years by the number of year periods. The results of the Cilacap Regency composite index can be seen in Table 11. When viewed from Table 11 above, this composite index provides a clear picture of the strengths and weaknesses in the eight indicators. Some indicators such as the Technological Advancement Indicator (TAI) and the Environment Indicator (EI) show positive progress, while indicators such as the Openness Indicator (OI) are the indicators with the lowest composite index values, indicating challenges that need

to be overcome. By focusing on several indicators with low composite indexes, Cilacap Regency can optimize its tourism and development potential to achieve better results in the future.

Table 11. Composite index calculation

| Indicator | Composite Index |
|---|---|
| Human Tourism Indicator (HTI) (Ratio) | 0.51 |
| Price Competitiveness Indicator (PCI) (IDR) | 0.41 |
| Infrastructure Development Indicator (IDI) (%) | 0.47 |
| Environment Indicator (EI) (Ratio) | 0.68 |
| Technology Advancement Indicator (TAI) (%) | 0.55 |
| Human Resources Indicator (HRI) (%) | 0.41 |
| Openness Indicator (OI) (%) | 0.20 |
| Social Development Indicator (SDI) (Day) | 0.39 |

*3.6 Tourism competitiveness index*

From Table 12 below, for indicators that are in the improvement stage, namely the Environment Indicator (EI) whose competitiveness index values are both above 2.00 must continue to maintain these values and continue to make improvements for higher improvement. For indicators that are in the developing stage, namely the Human Tourism Indicator (HTI), Price Competitiveness Indicator (PCI), Infrastructure Development Indicator (IDI), Technology Advancement Indicator (TAI), Human Resources Indicator (HRI), and Social Development Indicator (SDI) whose competitiveness index values are between 1.00 - 2.00 must focus on maintaining and strengthening the progress that has been achieved, continuing efforts in improving these sectors to be able to reach the improvement stage category. For indicators that fall into the undeveloped stage, namely the Openness Indicator (OI) whose competitiveness index value is below 1.00 must be identified and implement strategies to improve competitiveness in this indicator. The results of this analysis can provide an overview of the policies that must be carried out by the Cilacap Regency government to develop its tourism sector by looking at each of the indicators determining competitiveness.

Table 12. Calculation of tourism competitiveness index

| Indicator | Power Index Competitiveness | Category |
|---|---|---|
| Human Tourism Indicator (HTI) | 1.86 | Developing Stage |
| Price Competitiveness Indicator (PCI) | 1.47 | Developing Stage |
| Infrastructure Development Indicator (IDI) | 1.69 | Developing Stage |
| Environment Indicator (EI), Ratio | 2.45 | Refinement Stage |
| Technology Advancement Indicator (TAI) | 1.99 | Developing Stage |
| Human Resources Indicator (HRI) | 1.49 | Developing Stage |
| Openness Indicator (OI) | 0.72 | Undeveloped Stage |
| Social Development Indicator (SDI), | 1.40 | Developing Stage |

The value of the HTI indicator obtained is 1.86, which means that the competitiveness of this indicator is at the developing stage. This illustrates that the achievement of economic development due to visitors who want to visit Cilacap Regency has a fairly good quality. From this it can be concluded that the increasing number of tourists will have a better impact on the economy of Cilacap Regency even though it has not yet reached its maximum potential. The solution that can be done from the value obtained is by improving the quality of tourist attractions and conducting tourism promotions through social media to increase the number of domestic and foreign tourist visits (Riyadi & Herman, 2023; Saksana & Thio, 2019).

The value of the PCI indicator obtained from the calculation is 1.47, which means that its competitiveness is included in the scale of the developing stage. This indicator illustrates that the more foreign tourists who travel by staying overnight, the higher the PCI value will

be, or in the sense that these foreign tourists will spend their money at tourist destinations. From the PCI value obtained in Cilacap Regency, the power or consumption ability of foreign tourists is still very lacking.

The value of the IDI indicator obtained from the calculation is 1.69, which means that it is already in the developing stage in the competitiveness index. This value indicates that infrastructure in Cilacap Regency is not yet fully mature, but is still in the process of development. In the context of the Competitiveness Monitor, developed infrastructure plays a key role in improving overall competitiveness as it affects access to resources, services, and mobility of travelers and industries. The solution to this indicator is to improve infrastructure such as building and expanding road networks that connect key regions, including toll roads and bridges, which will improve connectivity between rural and urban areas, facilitating the movement of people and goods. This can provide comfort while traveling for tourists through the provision of decent and better infrastructure (Gooroochurn & Sugiyorto, 2005).

The value of the EI indicator obtained from the calculation is 2.45, which means that this value is included in the improvement stage scale. This indicator can be seen from the value of the Environmental Quality Index. With the assumption that the higher the IKLH value in an area, the better the level of environmental quality in that area. To maintain the EI value, it is expected that the local government will continue to pay attention to the water quality index, air quality index, and land cover quality index so that the IKLH value can be maintained and/or increased.

The value of the TAI indicator obtained from the calculation is 1.99, which is included in the developing stage scale. This indicator uses the variable number of people who use the internet. With a value of 1.99, it illustrates that technological development in Cilacap Regency is still needed again and if utilized properly it can help digitize services for reservations or use social media in tourism promotion. This indicator uses the variables of the number of illiterate people and the number of educated people. The value of the HRI indicator obtained from the calculation is 1.49, which is included in the developing stage scale. This indicates that training and education to improve the quality of human resources are still needed so that human resources in Cilacap Regency are better able to compete on a global scale.

The value of the OI indicator obtained from the calculation is 0.72, where this value is included in the scale of the undeveloped stage. In the calculation of the eight indicators of tourism competitiveness of Cilacap Regency, this indicator has the lowest value of the eight indicators. This shows that Cilacap Regency is still very closed or less connected to the international market. The value of this indicator is low because in the last five years there were only 8 foreign tourists visiting Cilacap Regency in 2019. The solution that can be done is to increase tourism promotion so that foreign tourist arrivals can increase.

The value of the SDI indicator obtained from the calculation is 1.40, where this value is included in the developing stage scale. The value of this indicator is formed from the variable of the average stay of tourists visiting Cilacap Regency. The safer and more comfortable Cilacap Regency is for tourists, the higher the opportunity for tourists to spend the night. Facilities such as lodging play an important role in this.

## 4. Conclusions

The characteristics of the tourism system elements of Cilacap Regency are divided into two subsystems, namely the external subsystem and the internal subsystem. (1) External subsystem conditions according to climatic conditions, Cilacap Regency is dominated by a gentle slope topography (58.76%) with a population of productive age that also dominates in this Regency (1,384,656 people). The majority of the population in Cilacap Regency is Muslim (97.70%) with the largest ethnic group being Javanese. The percentage of literate population in Cilacap Regency reached 97.41% and the percentage of population accessing the internet reached 64% for men and 57.74% for women in 2022. The economic condition

of Cilacap Regency as seen from the GRDP in 2022 increased from the previous year but from the PAD in 2022 decreased from the previous year. For related policies, Cilacap Regency is included in 50 National Tourism Destinations (DPN), namely DPN Pangandaran-Nusakambangan and the Cilacap Regency Government supports tourism which is emphasized in the RTRW with the development and maintenance of tourism areas. (2) For the internal subsystem conditions of Cilacap Regency, in the last five years Cilacap Regency tourists were dominated by archipelago tourists totaling 1,069,294 people with an average stay of 2.76 in 2022. For accessibility, Cilacap Regency has available land, sea, and air transportation facilities. There are 47 ODTW in Cilacap Regency, 54 accommodation units, and 204 food and beverage service businesses.

From the calculation of the eight tourism competitiveness indices of Cilacap Regency, the results are classified into three, namely the improvement stage, the developing stage, and the undeveloped stage. The Openness Indicator (OI) is the indicator with the lowest index value among other indicators, which is below 1.00, which included in the scale of the undeveloped stage, where this indicator has a very large development potential and requires a lot of effort to achieve meaningful development to support tourism competitiveness. Six of the eight indicators are already at the developing stage with an interval score of 1.00 - 2.00, namely the Human Tourism Indicator (HTI), Price Competitiveness Indicator (PCI), Infrastructure Development Indicator (IDI), Technology Advancement Indicator (TAI), Human Resources Indicator (HRI), and Social Development Indicator (SDI) which means that at this stage an indicator has begun to show signs of growth and progress, but has not yet reached its full potential and still requires further improvement to reach a more optimal level. For indicators that have entered the improvement stage with an interval score ranging from 2.00 - 4.00, namely the Environtment Indicator (EI), which at this stage is an indicator that has developed well and has almost reached the maximum potential/standard to support tourism competitiveness.

## Acknowledgement
The authors would like to express their sincere gratitude to all parties who contributed to the completion of this research.

## Author Contribution
The authors contributed fully to the research.

## Funding
This research received no external funding.

## Ethical Review Board Statement
Not available.

## Informed Consent Statement
Not available.

## Data Availability Statement
Not available.

## Conflicts of Interest
The authors declare no conflict of interest.

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