The gap analysis between perception and expectation of visitor in Bantimurung Bulusaraung National Park

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Abstract. This study aimed to analyze the gap between visitors’ perception and expectation for better development of ecotourism potential in Bantimurung Bulusaraung National Park (BBNP). The gap analysis approach used a descriptive survey to 200 respondents selected by non-probability sampling in November 2018. Several ecotourism potentials assessed were accessibility, accommodation, cultural attractions, public facilities, human resources, information and natural attractions. The result showed that there is a higher expectation rather than perception of visitor in BBNP. The highest gap value was found in public facility [-1.71], while the lowest gap value was found in accessibility [-0.97]. Thus, public facility should be prioritized to develop in order to meet the visitors’ expectation. In term of public facility, the highest gap value was found in communication facilities (telephone, fax, internet), while the lowest gap value was found in garbage dump and clean water availability. Therefore, the top priority to improve was the quality and quantity of communication facilities (telephone, fax, internet).

1. Introduction
Ecotourism is responsible and sustainable tourism activity that adheres to the principles of conservation and education in order to have a positive impact not only for the natural environment but also for local communities [1]. Ecotourism is proved as success method to boost the growth of such regions due to its contribution in economic and social welfare improvement [2,3]. The growth of ecotourism is the fastest rather than other types of tourism industry [4], specifically in the region of Asia Pacific [5]. This phenomenon is associated with the latest trend of healthy lifestyle among modern society so that they love to have activity with nature tagline, leading to the high preference of nature based tourism rather than artificial based tourism [6]. However, the enter of tourism activity in nature potentially produced a negative environmental impacts [7]. Thus, there is a need for more research to minimize negative impacts.

The research focussing on visitor is important milestone for developing ecotourism. Visitor is the main component that should be well managed in the sustainable ecotourism [8]. The higher number of visitor is followed by the higher number of income. But too much visitor is potentially damaged the environment if there is no management. Activities of visitor can affect the environment via biotic relationship modification, harvesting, direct stimulation and habitat alteration [7]. There is a challenge for the national park managers to have visitor regulation program. Visitor voice is one of important input for the managerial team of ecotourism. The research on obtaining visitor voice have been
conducted previously in BBNP, specifically in Helena Sky Bridge [9], Leang-Leang Prehistoric Park, Bantimurung Bulusaraung National Park [10]. Previous studies are important for managers to formulate the best policy with the aim to reach both visitor satisfaction and environmental preservation. Two aspects that important to study regarding visitor were visitor perception and visitor expectation. Visitor perception is what visitors felt about the actual condition of ecotourism component, while visitor expectation is what visitors want to related to ecotourism component. The gap between visitor perception and visitor expectation determines the visitor satisfaction. Previous studies by Eagly and Chaiken (1993) and Swarbrooke (1995) have conducted to measure visitors' satisfaction, and the result is able to answer what visitors' need [11,12]. The gap analysis have been also reported worldwide, i.e., Dadia–Lefkimi–Souflion National Park (Greece) [2], riparian area of Jhuoshuei River (Taiwan) [13]. However, there is still limited study specifically in Bantimurung Bulusaraung National Park (BBNP). BBNP is one of the popular national park outside the Java, specifically in South Sulawesi, with numerous leading destination and offering various nature attraction [14]. This study aimed to analyze the gap between visitors’ perception and expectation for better development of ecotourism potential in BBNP.

2. Research method

The research was conducted in the several destinations of Bantimurung Bulusaraung National Park (BBNP). The BBNP itself was located in two administrative locations, i.e., Pangkep and Maros District, South Sulawesi Province, Indonesia (Figure 1). The total area of BBNP was 43,750 ha and the coordinate was ranged from 4°42′49″ to 5°06′42″ SL and 119°34′17″ to 199°55′13″ EL [15].

![Figure 1. The location of Bantimurung Bulusaraung National Park.](image_url)

Data were collected using a structured questionnaire method with close ended questions. Respondents are representatives of the visitor population who are expected to provide actual information related to the research objectives. To select respondent, this study used non-probability sampling method [16]. Non probability sampling, also known as accidental sampling method, was defined as the selection of respondents who were met at the time of data collection [17]. The number of respondents who were interviewed were 200 respondents.
This study used gap analysis approach, i.e., revealing the gap value between perception and expectation of visitor on ecotourism condition. The positive gap value was resulted from the higher visitors’ perception rather than expectation, while the negative gap value was resulted from the lower visitors’ perception rather than expectation. The positive gap value associated with the high visitors’ satisfaction, while the negative gap value implied the less satisfaction of visitor regarding the actual condition of ecotourism. This study assessed seven components of ecotourism potential, i.e., natural attractions, cultural attractions, accommodation, accessibility and transportation, information, public facilities and human resources.

3. Results and discussions
3.1. Respondent characteristics
The present study invited various characteristics of respondents, as depicted in Figure 2. Based on gender, most of visitors who come in BBNP was male rather than female. This condition was associated with the fact that this activity was more adventurous. In terms of age, the respondents found predominantly in the range of 18 to 28 years old group. The respondents aged 40 or more seemed less interested in visiting BBNP. It was implied that most of visitors is young people that have a relatively fit and strong body in general. Most of destinations in BBNP were required a physical strength to travel. Based on the education background, most of respondents who visit BBNP was a high school student. This finding was emphasized that BBNP was well suited for young people who love to adventure. Respondents who visited BBNP were dominated by people of Makassar city and then people of neighbor city such as Bone, Pangkep, Barru, etc. The lack of international visitor shows that the segmentation of BBNP’s visitor was still at a local level.

![Figure 2. Respondent characteristics involved in present study, based on gender, education, age and domicile.](image-url)
3.2. Gap analysis

Visitor is the main component for developing ecotourism. Visitors’ perception and expectation were two important variables for the calculation of gap analysis. The gap between visitors’ perception and expectation described the level of satisfaction of visitors. The visitors’ satisfaction is produced by the assessment of perceptible quality of the offering services to visitor [2]. Indirectly, visitors’ satisfaction is measured by experiences that visitors received during the time of ecotourism in national park [18,19]. The gap analysis help the managerial team to evaluate visitors’ behavior and determine what should be prioritized for the improvement actions [2].

The results of gap analysis in present experiment showed a variation of gap value in seven assessed ecotourism components, i.e., human resources, public facility, tourism information, accessibility, accommodation, cultural attraction and natural attraction. The gap value was varied from -0.97 to -1.71. The average of gap value among 7 assessed components was -1.25, implied that there was still a higher visitors’ expectation rather than their perception. The highest gap value was observed in public facility (-1.71), then followed by cultural attraction (-1.34), accommodation (-1.33), tourism information (-1.31), natural attraction (-1.06) and human resources (-1.02), while the lowest gap value was noted in accessibility (-0.97) (Figure 3). The order from the high to low gap value indicated the priority of improvement actions. The ecotourism with a high gap between visitors’ perception and expectation should be prioritized to improve, rather than a low gap ecotourism component. This argument was in agreement with previous study [2].

![Gap value of the ecotourism potential at BBNP](image)

**Figure 3.** The gap value of seven assessed ecotourism potentials in Bantimurung Bulusaraung national park.

In term of natural attraction, there was four subcomponents assessed such as fauna attractions, flora attractions, panorama, and specific attractions, i.e., waterfall, pool and cave exploration. Gap analysis in natural attraction showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in fauna attraction, while the lowest gap value was found in panorama [Table 1]. Panorama of BBNP was less prioritized to develop and visitor believed that BBNP’s panorama was relatively as good as their expectation. However, this result also indicated that fauna attraction should be prioritized for future development, to meet the visitors’ expectation. There were several fauna that should be well-managed in BBNP, for example, butterfly and birds. Butterfly is the main icon of BBNP in general and BNTA in particular [20–22]. The managerial team, especially in
Bantimurung nature tourism area should preserve the biodiversity of butterfly [23]. The butterfly was frequently found in the sandy soil next to water body of river [24]. The BBNP have been reported as a potential bird habitat and able to provide the bird watching activities as one of tourism leading attraction [25]. The preservation of fauna biodiversity was important step toward the fulfilment of visitor expectation on natural attraction in BBNP.

Table 1. The gap analysis of natural attraction in Bantimurung Bulusaraung National Park.

| Natural attraction     | Perception | Expectation | Gap value |
|-----------------------|------------|-------------|-----------|
| A1 Flora              | 3.57       | 4.55        | -0.98     |
| A2 Fauna              | 2.84       | 4.47        | -1.63     |
| A3 Panorama           | 4.01       | 4.61        | -0.6      |
| A4 Special attraction | 3.47       | 4.50        | -1.03     |

Cultural attraction consisted of nine subcomponents, namely local traditions and habits, local cultural arts, historical heritage, festivals, cultural landscape, carving and craft, daily life, local food and hospitality of the local community. Gap analysis in cultural attraction showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in local cultural art, while the lowest gap value was found in hospitality of local people [Table 2]. The local people of Bugis have been already famous for their hospitality in social life. The culture of Bugis people is warm and friendly. Thus, the hospitality of local people is low priority to develop.

The order from low priority to high priority was local people hospitality, then historical heritage, cultural landscape, local people’s daily life, carving and crafts, local traditional and customs, local food, festival and the highest priority to develop was local cultural art.

Table 2. The gap analysis of cultural attraction in Bantimurung Bulusaraung National Park.

| Cultural attraction          | Perception | Expectation | Gap value |
|------------------------------|------------|-------------|-----------|
| B1 Local cultural arts       | 1.78       | 4.01        | -2.23     |
| B2 Local traditions and Customs | 1.86     | 3.76        | -1.9      |
| B3 Festival                  | 1.54       | 3.67        | -2.13     |
| B4 Historical heritage       | 3.49       | 4.11        | -0.62     |
| B5 Carvings and crafts       | 2.72       | 3.94        | -1.22     |
| B6 Cultural landscape        | 3.55       | 4.18        | -0.63     |
| B7 Local food                | 2.05       | 4.14        | -2.1      |
| B8 Local peoples’ daily life | 3.42       | 4.2         | -0.78     |
| B9 Hospitality of local people | 3.85   | 4.33        | -0.49     |

Accommodation was composed of three subcomponents such as hotels, homestays and camping ground. Gap analysis in accommodation showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in camping ground, while the lowest gap value was found in homestay. The gap value was varied from -1.24 to -1.45 [Table 3]. The camping ground became top priority to improve in term of accommodation.
Table 3. The gap analysis of accommodation in Bantimurung Bulusaraung National Park

| Accommodation    | Perception | Expectation | Gap value |
|------------------|------------|-------------|-----------|
| C1 Homestay      | 2.59       | 3.83        | -1.24     |
| C2 Hotel/Losmen  | 2.11       | 3.41        | -1.31     |
| C3 Camping ground| 2.64       | 4.08        | -1.45     |

Accessibility was consisted of four subcomponents, namely easy access to get transportation, easy access to get location, transportation costs and easy access to get information about the distance from the nearest city. Gap analysis in accessibility showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in easy access to get transportation, while the lowest gap value was found in easy access to locations. The gap value was varied from -0.52 to -1.62 [Table 4]. The easy access to get transportation became top priority to improve in term of accessibility.

Table 4. The gap analysis of accessibility in Bantimurung Bulusaraung National Park

| Accessibility                        | Perception | Expectation | Gap value |
|--------------------------------------|------------|-------------|-----------|
| D1 Easy access to locations          | 3.86       | 4.37        | -0.52     |
| D2 Easy access to get transportation | 2.78       | 4.4         | -1.62     |
| D3 Easy access to get information about the distance from the nearest city | 3.55 | 4.39 | -0.85 |
| D4 Transportation costs              | 3.46       | 4.36        | -0.9      |

Information was composed of two subcomponents, i.e., guide/interpreter and brochures/maps/road directions. Gap analysis in information showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in guide and interpreter, while the lowest gap value was found in brochures, maps or other directions. The gap value was varied from -1.04 to -1.58 [Table 5]. The guide and interpreter became top priority to improve in term of information.

Table 5. The gap analysis of information in Bantimurung Bulusaraung National Park

| Information                          | Perception | Expectation | Gap value |
|--------------------------------------|------------|-------------|-----------|
| E1 Guide and interpreter             | 2.86       | 4.44        | -1.58     |
| E2 Brochures, maps or other directions | 3.49 | 4.52 | -1.04 |

Public facility was consisted of eight subcomponents, namely garbage dump, public lavatory, communication facilities (telephone, fax, internet), rest area, health, security facilities, easy access to get clean water and shopping facilities (stalls, souvenir shops, etc). Gap analysis in public facilities showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in communication facilities (telephone, fax, internet), while the lowest gap value was found in garbage dump and clean water availability. The gap value was varied from -1.44 to -2.15 [Table 6]. The order from high priority to low priority to improve was the communication facilities, health facility, public lavatory, rest area, security facility and shopping facility and the last was garbage dump and clean water availability.
Table 6. The gap analysis of public facilities in Bantimurung Bulusaraung National Park.

| Public facilities         | Perception | Expectation | Gap value |
|---------------------------|------------|-------------|-----------|
| F1 Public lavatory        | 2.88       | 4.64        | -1.77     |
| F2 Garbage dump           | 3.25       | 4.68        | -1.44     |
| F3 Rest area              | 2.81       | 4.53        | -1.72     |
| F4 Telephone, fax or internet | 1.89   | 4.04        | -2.15     |
| F5 Health facility        | 2.47       | 4.36        | -1.9      |
| F6 Security facility      | 2.86       | 4.5         | -1.64     |
| F7 Shopping facility      | 2.88       | 4.5         | -1.62     |
| F8 Clean water availability | 3.18   | 4.61        | -1.44     |

Human resource was composed of three subcomponents such as care, services and skill. Gap analysis in human resources showed that there is a higher expectation rather than perception of visitor. The highest gap value was found in care, while the lowest gap value was found in skill. The gap value was varied from -0.99 to -1.13 [Table 7]. The care of human resources became top priority to improve by managerial team by conducting further training near future in order to meet the visitors’ expectation and finally achieve visitors’ satisfaction. Visitors' satisfaction was a dynamic measure, implied that it was not remain stable all the time [2]. Therefore, managerial team should monitor and continuously upgrade their service to visitor as the same time with conserve the ecology of ecotourism.

Table 7. The gap analysis of human resources in Bantimurung Bulusaraung National Park.

| Human resources | Perception | Expectation | Gap value |
|-----------------|------------|-------------|-----------|
| G1 Service      | 3.64       | 4.63        | -0.99     |
| G2 Care         | 3.66       | 4.61        | -0.95     |
| G3 Skill        | 3.44       | 4.57        | -1.13     |

4. Conclusion
Present study concluded that there is a higher expectation rather than perception of visitor in Bantimurung Bulusaraung National Park. The highest gap value was found in public facility, while the lowest gap value was found in accessibility. Thus, public facility should be prioritized to develop in order to meet the visitors’ expectation. In term of public facility, the highest gap value was found in communication facilities (telephone, fax, internet), while the lowest gap value was found in garbage dump and clean water availability. Therefore, the top priority to improve was the quality and quantity of communication facilities (telephone, fax, internet).

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